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- 1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
- 2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
- 3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

# X260 MLB - CBB

| REV   | ECN   | DESCRIPTION OF REVISION | CK APPD | DATE      |
|-------|-------|-------------------------|---------|-----------|
| <REV> | <ECN> | <ECO_DESCRIPTION>       |         | <ECODATE> |

LAST\_MODIFICATION=Thu Sep 10 15:22:41 2015

| PAGE | <CSA> | CONTENTS | SYNC            | DATE       | PAGE | <CSA>        | CONTENTS        | SYNC                 | DATE       |
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| 1    | 1     | page1    | MASTER          | MASTER     | 46   | 76           | page78          | DEVMLB               | 05/13/2015 |
| 2    | 2     | page2    | J43_MLB         | 10/24/2012 | 47   | 78           | page79          | DEVMLB               | 05/11/2015 |
| 3    | 3     | page3    | J43_MLB         | 10/24/2012 | 48   | 79           | page80          | DEVMLB               | 05/11/2015 |
| 4    | 4     | page4    | J43_MLB         | 10/24/2012 | 49   | 80           | page81          | DEVMLB               | 05/11/2015 |
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| 13   | 13    | page13   | DEVMLB          | 05/11/2015 | 58   | 90           | page91          | DEVMLB               | 05/11/2015 |
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| 17   | 17    | page17   | DEVMLB          | 05/11/2015 | 62   | 100          | page102         | J43_MLB              | 10/24/2012 |
| 18   | 19    | page19   | DEVMLB          | 05/11/2015 | 63   | 102          | page103         | DEVMLB               | 04/30/2015 |
| 19   | 20    | page20   | DEVMLB          | 05/04/2015 | 64   | 103          | page104         | J92_DEVMLB           | 07/08/2014 |
| 20   | 22    | page22   | DEVMLB          | 04/14/2015 | 65   | 104          | page105         | J92_DEVMLB           | 07/08/2014 |
| 21   | 23    | page23   | DEVMLB          | 04/14/2015 | 66   | 105          | page120         | J41_MLB              | 10/24/2012 |
| 22   | 25    | page25   | DEVMLB          | 04/14/2015 | 67   | 120          | page130         | J92_LAYOUT_STUDY_MLB | 05/18/2015 |
| 23   | 30    | page30   | DEVMLB          | 04/09/2015 |      | 130          | MASTER          | MASTER               |            |
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| 25   | 37    | page37   | J72_MLB         | 05/13/2015 |      | <CSA_PAGE70> | <SYNC_MASTER70> | <SYNC_DATE70>        |            |
| 26   | 38    | page38   | J92_DEVMLB      | 05/13/2015 |      | <CSA_PAGE71> | <SYNC_MASTER71> | <SYNC_DATE71>        |            |
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# ALIASES RESOLVED

Schematic / PCB #'s

| PART NUMBER | QTY | DESCRIPTION    | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|----------------|---------------|----------|------------|
| 051-00532   | 1   | SCHEM,MLB,X260 | SCH           | CRITICAL |            |
| 820-00244   | 1   | PCBF,MLB,X260  | PCB           | CRITICAL |            |

PRODUCT SAFETY REQUIREMENTS:  
 PCB, UL RECOGNIZED, MIN. 130-C TEMP. RATING AND V-0 FLAME RATING PER UL 796 & UL 94.  
 PCB TO BE SILK-SCREENED WITH UL/CUL RECOGNITION MARK, MANUFACTURER'S UL FILE  
 NUMBER, UL PCB MATERIAL DESIGNATION, 130-C TEMP. RATING AND V-0 FLAME RATING.

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|   |  |                    |          |
|---|--|--------------------|----------|
| DRAWING TITLE   |  | <PART_DESCRIPTION> |          |
| Apple Inc.  |  | DRAWING NUMBER     | SIZE     |
|   |  | <SCH_NUM>          | D        |
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BOM Groups

| BOM GROUP     | BOM OPTIONS  |
|---------------|--|
| MLB_COMMON    | ALTERNATE,COMMON,MLB_MISC,MLB_DEBUG:ENG,MLB_PROGPARTS,BUILD:CBB                          |
| MLB_MISC      | CAM_FREQ:24M,CAM_XTAL:NO,SSDRAM:4GBIT,S3X:B0,UPC:A1,PCH24M:SUS,EQ:4CH,PMIC:A0D,BSSB_GP10 |
| MLB_DEBUG:ENG | DEBUGLED   |

CPU DRAM SPD Straps

| BOM GROUP    | BOM OPTIONS                             |
|--------------|---|
| DRAM:SAM_8GB | RAMCFG0_L,DRAM_TYPE:SAMSUNG_8GB         |
| DRAM:HYN_8GB | RAMCFG0_L,RAMCFG1_L,DRAM_TYPE:HYNIX_8GB |
| DRAM:ELP_8GB | DRAM_TYPE:ELPIDA_8GB                    |

Programmable Parts

| PART NUMBER | QTY | DESCRIPTION                                 | REFERENCE DES | CRITICAL | BOM OPTION        |
|-------------|-----|---|---------------|----------|-------------------|
| 335S00084   | 1   | IC,SPI SERIAL FLASH,8MBIT,3.0V,CSP,8P       | U3090         | CRITICAL | UPCROM:BLANK      |
| 341S00466   | 1   | IC,NVM (VXXX) CBB, X260                     | U3090         | CRITICAL | UPCROM:PROG       |
| 338S1231    | 1   | IC,SMC12-B1,40MB/S/500MIPS MCU,7X7,168BGA   | U5000         | CRITICAL | SMC:BLANK         |
| 341S00431   | 1   | IC,SMC-B1,EXTERNAL (V2.33A2) PROTO 1,X260   | U5000         | CRITICAL | SMC:PROG          |
| 335S1009    | 1   | 64 MBIT SPI QUAD I/O FLASH,CSP,3.3V,QUAD IO | U6100         | CRITICAL | BOOTROM_WIN:BLANK |
| 335S1010    | 1   | 64 MBIT SPI QUAD I/O FLASH,CSP,3.3V,QUAD IO | U6100         | CRITICAL | BOOTROM_MAC:BLANK |
| 335S1029    | 1   | 64 MBIT SPI QUAD I/O FLASH,CSP,3.3V,QUAD IO | U6100         | CRITICAL | BOOTROM_MIC:BLANK |
| 341S00465   | 1   | IC,EFI ROM (VXXX) CBB,X260                  | U6100         | CRITICAL | BOOTROM:PROG      |

Module Parts

| PART NUMBER | QTY | DESCRIPTION                                  | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|--|---------------|----------|------------|
| 337S00207   | 1   | IC,CPU,SKY,SRZEN,F9Q,D1,2/2,1.1,5W,.85,B1515 | U0500         | CRITICAL | CPU:1.1GHZ |
| 337S00208   | 1   | IC,CPU,SKY,SRZEN,F9Q,D1,2/2,1.2,5W,.85,B1515 | U0500         | CRITICAL | CPU:1.2GHZ |
| 337S00209   | 1   | IC,CPU,SKY,SRZEN,F9Q,D1,2/2,1.3,5W,.85,B1515 | U0500         | CRITICAL | CPU:1.3GHZ |
| 946-3892    | 1   | J11/J13 MLB DYNAMIC ADHESIVE 29993-SC 0.4G   | GLUE          | CRITICAL |            |
| 825-00162   | 1   | LABEL, BARCODE, 2D, 1D, CONFIG, MLB, X260    | LABEL         |          |            |

DRAM Parts

| PART NUMBER | QTY | DESCRIPTION                          | REFERENCE DES | CRITICAL | BOM OPTION            |
|-------------|-----|--------------------------------------|---------------|----------|-----------------------|
| 333S00052   | 2   | IC,SDRAM,LPDDR-1866,32GBIT,253B FBGA | U2300,U2500   | CRITICAL | DRAM_TYPE:SAMSUNG_8GB |
| 333S00053   | 2   | IC,SDRAM,LPDDR-1866,32GBIT,253B FBGA | U2300,U2500   | CRITICAL | DRAM_TYPE:HYNIX_8GB   |
| 333S00054   | 2   | IC,SDRAM,LPDDR-1866,32GBIT,253B FBGA | U2300,U2500   | CRITICAL | DRAM_TYPE:ELPIDA_8GB  |

Alternate Parts

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS:                   |
|-------------|---------------------------|------------|---------|-----------------------------|
| 376S00074   | 376S0855                  |            | ALL     | Toshiba alt for Diodes dual |
| 376S1129    | 376S0855                  |            | ALL     | SKP alt for Diodes dual     |
| 376S1089    | 376S1128                  |            | ALL     | SKP alt for Diodes single   |
| 138S0703    | 138S0648                  |            | ALL     | Murata alt to Taiyo Yuden   |
| 372S0186    | 372S0185                  |            | ALL     | SKP alt to Diodes           |
| 376S1053    | 376S0604                  |            | ALL     | Diodes alt to Fairchild     |
| 107S0249    | 107S0251                  |            | ALL     | TPP alt to Cystec           |
| 128S00044   | 128S00041                 |            | ALL     | Rubycon alt to Sanyo        |
| 740S00004   | 740S0134                  |            | ALL     | Kemet alt to Sanyo          |
| 740S00005   | 740S0190                  |            | ALL     | Polytronics alt to Wayon    |
| 128S0296    | 128S0487                  |            | ALL     | Sanyo alt to NEC            |
| 128S00012   | 128S0487                  |            | ALL     | ROHM alt to NEC             |
| 128S0397    | 128S0325                  |            | ALL     | Kemet alt to Sanyo          |
| 107S00070   | 107S0085                  |            | ALL     | TKX alt to Murata           |
| 376S00007   | 376S1179                  |            | ALL     | AGS alt to Vishay           |
| 376S1080    | 376S0820                  |            | ALL     | Diodes alt to Onsemi        |
| 152S00311   | 152S2037                  |            | ALL     | Cystec new alt to Cystec    |
| 152S00098   | 152S00224                 |            | ALL     | Vishay alt to Cystec        |
| 128S00021   | 128S00020                 |            | ALL     | ROHM alt to NEC             |
| 138S0786    | 138S0705                  |            | ALL     | Samsung alt to Murata       |

| PART NUMBER | ALTERNATE FOR PART NUMBER | BOM OPTION | REF DES | COMMENTS:                 |
|-------------|---------------------------|------------|---------|---------------------------|
| 128S00007   | 128S00015                 |            | ALL     | NEC alt to Sanyo          |
| 128S00009   | 128S00015                 |            | ALL     | Kemet alt to Sanyo        |
| 128S00029   | 128S00015                 |            | ALL     | ROHM alt to Sanyo         |
| 128S00011   | 128S00010                 |            | ALL     | Kemet alt to Sanyo        |
| 128S00026   | 128S00010                 |            | ALL     | NEC alt to Sanyo          |
| 128S00031   | 128S00010                 |            | ALL     | ROHM alt to Sanyo         |
| 138S00073   | 138S00047                 |            | ALL     | Murata alt to Taiyo       |
| 138S0772    | 138S00013                 |            | ALL     | Taiyo alt to Murata       |
| 132S00012   | 132S0401                  |            | ALL     | Multi alt to Taiyo        |
| 152S00028   | 152S1751                  |            | ALL     | Murata alt to Taiyo Yuden |
| 353S00712   | 353S2216                  |            | ALL     | Onsemi alt to TI          |
| 353S00714   | 353S2208                  |            | ALL     | Onsemi alt to TI          |
| 337S00174   | 337S00175                 | S3X:B0     | ALL     | S3X B0 alt to A8          |
| 138S00077   | 138S00035                 |            | ALL     | Taiyo alt to Murata       |
| 152S00343   | 152S1682                  |            | ALL     | Murata alt to Cystec      |
| 155S00155   | 155S0441                  |            | ALL     | TKX alt to Murata         |
| 155S0741    | 155S0361                  |            | ALL     | Murata alt to TKX         |
| 155S00165   | 155S0382                  |            | ALL     | Taiyo alt to TKX          |
| 155S00166   | 155S0391                  |            | ALL     | TKX alt to Murata         |
| 155S0706    | 155S0302                  |            | ALL     | Taiyo alt to Murata       |
| 197S00053   | 197S00050                 |            | ALL     | Eyosara alt to TKX        |
| 197S00055   | 197S00050                 |            | ALL     | Murata alt to TKX         |
| 311S00004   | 311S0370                  |            | ALL     | Onsemi alt to KXP         |
| 333S00030   | 333S00016                 |            | ALL     | Hynix alt to Micron       |
| 338S00175   | 338S1264                  |            | ALL     | Broadcom alt packaging    |
| 107S00020   | 107S0276                  |            | ALL     | TPP alt to Cystec         |
| 107S00021   | 107S0284                  |            | ALL     | TPP alt to Cystec         |
| 353S00773   | 353S4296                  |            | ALL     | Semtech alt to TI         |
| 311S00057   | 311S0612                  |            | ALL     | Diodes alt to KXP         |
| 155S00011   | 155S00008                 |            | ALL     | Murata alt to TKX         |
| 138S0739    | 138S0706                  |            | ALL     | Samsung alt to Murata     |
| 138S0945    | 138S0706                  |            | ALL     | Eyosara alt to Murata     |
| 138S00090   | 138S0943                  |            | ALL     | Taiyo alt to Murata       |
| 138S00087   | 138S1086                  |            | ALL     | Taiyo alt to Murata       |
| 107S00086   | 107S00056                 |            | ALL     | TPP alt to Cystec         |
| 152S00347   | 152S00220                 |            | ALL     | Chilisin alt to Cystec    |
| 138S00032   | 138S0831                  |            | ALL     | Taiyo alt to Murata       |
| 138S00049   | 138S0831                  |            | ALL     | Eyosara alt to Murata     |
| 152S00362   | 152S1129                  |            | ALL     | Cystec alt to Murata      |
| 128S00039   | 128S00038                 |            | ALL     | NEC alt to Kemet          |

CPU DRAM CFG Chart

| VENDOR  | CFG 1 | CFG 0 |
|---------|-------|-------|
| HYNIX   | 0     | 0     |
| SAMSUNG | 1     | 0     |
| MICRON  | 0     | 1     |
| ELPIDA  | 1     | 1     |

| SIZE    | CFG 3 | CFG 2 |
|---------|-------|-------|
| 2GB     | 0     | 0     |
| 4GB QDP | 0     | 1     |
| 4GB DDP | 1     | 0     |
| 8GB     | 1     | 1     |

SSD Configs

| BOM GROUP      | BOM OPTIONS                                    |
|----------------|--|
| SSD:128GB      | NAND:64GB,CAPACITY1                            |
| SSD:256GB      | NAND:128GB,CAPACITY0,CAPACITY1                 |
| SSD:512GB      | NAND:256GB,CAPACITY2                           |
| SSD:256GB_SAND | NAND:128GB_SAND,CAPACITY0,CAPACITY1,SANDISK_1Y |
| SSD:512GB_SAND | NAND:256GB_SAND,CAPACITY2,SANDISK_1Y           |

SSD Parts

| PART NUMBER | QTY | DESCRIPTION                             | REFERENCE DES  | CRITICAL | BOM OPTION      |
|-------------|-----|---|----------------|----------|-----------------|
| 337S00175   | 1   | IC,S3-X,B0                              | U8600          | CRITICAL | S3X:B0          |
| 333S00017   | 1   | IC,LPDDR3-1600,128MX8,1.8V,25NM,276 POP | U8600_POP_DRAM | CRITICAL | SSDRAM:4GBIT    |
| 335S1030    | 2   | NAND,TOG DDR2,2CH,64GB,1YNM,3.3V,LGA60  | U9100,U9120    | CRITICAL | NAND:64GB       |
| 335S00050   | 2   | NAND,TOG DDR2,2CH,128GB,1YNM,3.3V,LGA60 | U9100,U9120    | CRITICAL | NAND:128GB      |
| 335S00051   | 2   | NAND,TOG DDR2,2CH,256GB,1YNM,3.3V,LGA60 | U9100,U9120    | CRITICAL | NAND:256GB      |
| 335S00121   | 2   | NAND,TOG DDR2,2CH,128GB,1YNM,3.3V,LGA60 | U9100,U9120    | CRITICAL | NAND:128GB_SAND |
| 335S00122   | 2   | NAND,TOG DDR2,2CH,256GB,1YNM,3.3V,LGA60 | U9100,U9120    | CRITICAL | NAND:256GB_SAND |


Module Parts

| PART NUMBER | QTY | DESCRIPTION                             | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|---|---------------|----------|------------|
| 353S00060   | 1   | IC,CD3215,USB PWR SWITCH,A1,6X6MM,BGA96 | U3100         | CRITICAL | UPC:A1     |
| 338S00168   | 1   | IC,PMU,P650839A0D,7X7MM,BGA168          | U7800         | CRITICAL | PMIC:A0D   |

Board IDs

| BOM GROUP    | BOM OPTIONS |
|--------------|-------------|
| BUILD:PROTO1 | BOARDID0_L  |
| BUILD:CBB    | BOARDID1_L  |

Board ID should start all-high (first build), and each new build increment stuffing in a binary fashion (ID0 is the LSB). IDX is high if not set low in the BOM table.

|  |                |                      |          |
|--|----------------|----------------------|----------|
| SYNC_MASTER=X260_ERIC  |                | SYNC_DATE=06/09/2015 |          |
| PAGE TITLE   |                |                      |          |
| <b>BOM Configuration [2]</b>   |                |                      |          |
| <br>Apple Inc.  | DRAWING NUMBER | <SCH_NUM>            | SIZE     |
|  | REVISION       | <E4LABEL>            | D        |
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Top level BOM Variants

| BOM NUMBER | BOM NAME  | BOM OPTIONS  |
|------------|---|--|
| 639-6664   | PCBA,MLB,1.3GHZ,EL 8GB,TOSH 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:ELP_8GB,SSD:256GB,WIFI:FCC       |
| 639-6665   | PCBA,MLB,1.3GHZ,EL 8GB,TOSH 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:ELP_8GB,SSD:512GB,WIFI:FCC       |
| 639-6666   | PCBA,MLB,1.3GHZ,HY 8GB,TOSH 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:HYN_8GB,SSD:256GB,WIFI:FCC       |
| 639-6667   | PCBA,MLB,1.3GHZ,HY 8GB,TOSH 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:HYN_8GB,SSD:512GB,WIFI:FCC       |
| 639-6668   | PCBA,MLB,1.3GHZ,SA 8GB,TOSH 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:SAM_8GB,SSD:256GB,WIFI:FCC       |
| 639-6669   | PCBA,MLB,1.3GHZ,SA 8GB,TOSH 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:SAM_8GB,SSD:512GB,WIFI:FCC       |
| 639-6670   | PCBA,MLB,1.1GHZ,HY 8GB,TOSH 128G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:HYN_8GB,SSD:128GB,WIFI:FCC       |
| 639-6671   | PCBA,MLB,1.2GHZ,EL 8GB,TOSH 256G,WIFI ETSI,X260 | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:ELP_8GB,SSD:256GB,WIFI:ETSI      |
| 639-6672   | PCBA,MLB,1.2GHZ,SA 8GB,TOSH 512G,WIFI APAC,X260 | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:SAM_8GB,SSD:512GB,WIFI:APAC      |
| 639-6673   | PCBA,MLB,1.2GHZ,EL 8GB,SAND 256G,WIFI ETSI,X260 | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:ELP_8GB,SSD:256GB_SAND,WIFI:ETSI |
| 639-6674   | PCBA,MLB,1.3GHZ,EL 8GB,SAND 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:ELP_8GB,SSD:256GB_SAND,WIFI:FCC  |
| 639-6675   | PCBA,MLB,1.3GHZ,SA 8GB,SAND 512G,WIFI APAC,X260 | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:SAM_8GB,SSD:512GB_SAND,WIFI:APAC |
| 639-6676   | PCBA,MLB,1.2GHZ,EL 8GB,SAND 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:ELP_8GB,SSD:256GB_SAND,WIFI:FCC  |
| 639-6677   | PCBA,MLB,1.3GHZ,SA 8GB,SAND 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:SAM_8GB,SSD:512GB_SAND,WIFI:FCC  |
| 639-6678   | PCBA,MLB,1.3GHZ,HY 8GB,SAND 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:HYN_8GB,SSD:512GB_SAND,WIFI:FCC  |
| 639-6679   | PCBA,MLB,1.2GHZ,HY 8GB,SAND 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:HYN_8GB,SSD:512GB_SAND,WIFI:FCC  |
| 639-6680   | PCBA,MLB,1.1GHZ,HY 8GB,TOSH 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:HYN_8GB,SSD:512GB,WIFI:FCC       |
| 639-6681   | PCBA,MLB,1.2GHZ,HY 8GB,TOSH 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:HYN_8GB,SSD:256GB,WIFI:FCC       |
| 639-6682   | PCBA,MLB,1.2GHZ,SA 8GB,SAND 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:SAM_8GB,SSD:256GB_SAND,WIFI:FCC  |
| 639-6683   | PCBA,MLB,1.3GHZ,SA 8GB,SAND 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:SAM_8GB,SSD:256GB_SAND,WIFI:FCC  |
| 639-6684   | PCBA,MLB,1.1GHZ,SA 8GB,SAND 512G,WIFI ETSI,X260 | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:SAM_8GB,SSD:512GB_SAND,WIFI:ETSI |
| 639-6685   | PCBA,MLB,1.2GHZ,SA 8GB,SAND 256G,WIFI IND,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:SAM_8GB,SSD:256GB_SAND,WIFI:IND  |
| 639-6686   | PCBA,MLB,1.3GHZ,HY 8GB,TOSH 128G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:HYN_8GB,SSD:128GB,WIFI:FCC       |
| 639-6687   | PCBA,MLB,1.1GHZ,SA 8GB,TOSH 128G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:SAM_8GB,SSD:128GB,WIFI:FCC       |
| 639-6688   | PCBA,MLB,1.1GHZ,HY 8GB,TOSH 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:HYN_8GB,SSD:256GB,WIFI:FCC       |
| 639-6689   | PCBA,MLB,1.1GHZ,SA 8GB,SAND 256G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:SAM_8GB,SSD:256GB_SAND,WIFI:FCC  |
| 639-6690   | PCBA,MLB,1.1GHZ,SA 8GB,SAND 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.1GHZ,DRAM:SAM_8GB,SSD:512GB_SAND,WIFI:FCC  |
| 639-6691   | PCBA,MLB,1.2GHZ,HY 8GB,TOSH 128G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:HYN_8GB,SSD:128GB,WIFI:FCC       |
| 639-6692   | PCBA,MLB,1.2GHZ,SA 8GB,TOSH 128G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:SAM_8GB,SSD:128GB,WIFI:FCC       |
| 639-6693   | PCBA,MLB,1.2GHZ,SA 8GB,TOSH 512G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.2GHZ,DRAM:SAM_8GB,SSD:512GB,WIFI:FCC       |
| 639-6694   | PCBA,MLB,1.3GHZ,SA 8GB,TOSH 128G,WIFI FCC,X260  | ALTERNATE,CMN,CPU:1.3GHZ,DRAM:SAM_8GB,SSD:128GB,WIFI:FCC       |

Partial & development BOMs

| BOM NUMBER | BOM NAME                                       | BOM OPTIONS  |
|------------|--|--|
| 685-00073  | CMN PTS,PCBA,MLB,X260                          | MLB_COMMON   |
| 939-01879  | PCBA,MLB,NO CPU,SA 8GB,TOSH 512G,WIFI FCC,X260 | ALTERNATE,CMN,DRAM:SAM_8GB,SSD:512GB,WIFI:FCC      |
| 939-01880  | PCBA,MLB,NO CPU,SA 8GB,SAND 512G,WIFI FCC,X260 | ALTERNATE,CMN,DRAM:SAM_8GB,SSD:512GB_SAND,WIFI:FCC |

BOM Groups

| BOM GROUP     | BOM OPTIONS                               |
|---------------|---|
| MLB_PROGPARTS | BOOTROM:PROG,BT:PROG,SMC:PROG,UPCROM:PROG |

Common BOM

| PART NUMBER | QTY | DESCRIPTION           | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-----------------------|---------------|----------|------------|
| 685-00073   | 1   | CMN PTS,PCBA,MLB,X260 | CMNPTS        | CRITICAL | CMN        |

Programmable Parts

| PART NUMBER | QTY | DESCRIPTION                      | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|----------------------------------|---------------|----------|------------|
| 341S00345   | 1   | BT ROM (VXX) PROT00,X260         | U3770         | CRITICAL | BT:PROG    |
| 341S00346   | 1   | WIFI ROM (PXXXX) PROT00,W1,X260  | U3780         | CRITICAL | WIFI:FCC   |
| 341S00347   | 1   | WIFI ROM (PXXXX) PROT00,W2,X260  | U3780         | CRITICAL | WIFI:ETSI  |
| 341S00348   | 1   | WIFI ROM (PXXXX) PROT00,W3,X260  | U3780         | CRITICAL | WIFI:APAC  |
| 341S00349   | 1   | WIFI ROM (PXXXX) PROT00,IND,X260 | U3780         | CRITICAL | WIFI:IND   |

SYNC\_MASTER=J43\_MLB SYNC\_DATE=10/24/2012

PAGE TITLE X260 BOM Variants

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DRAWING NUMBER <SCH\_NUM> SIZE D  
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 BRANCH <BRANCH>  
 PAGE 3 OF 130  
 SHEET 3 OF 67

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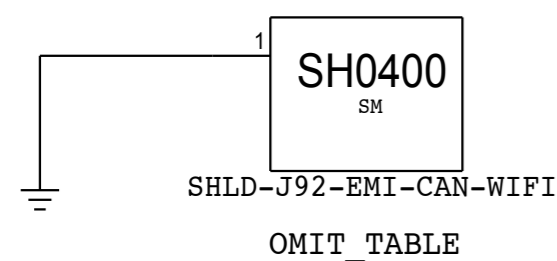
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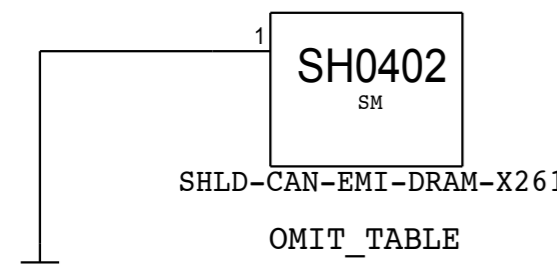
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### WIFI EMI CAN



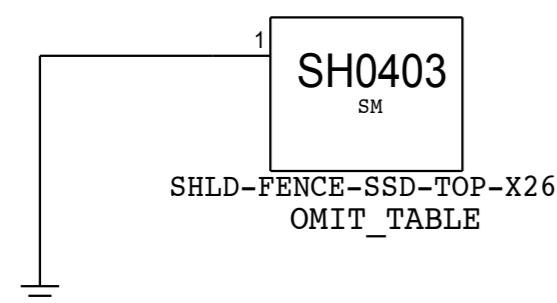
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| 806-7064    | 1   | CAN,EMI,WIFI,X261 | SH0400        | CRITICAL |            |

### DRAM EMI CAN

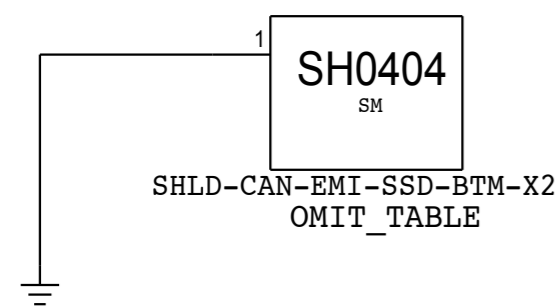


| PART NUMBER | QTY | DESCRIPTION       | REFERENCE DES | CRITICAL | BOM OPTION |
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| 806-04848   | 1   | CAN,EMI,DRAM,X260 | SH0402        | CRITICAL |            |

### SSD EMI CANS

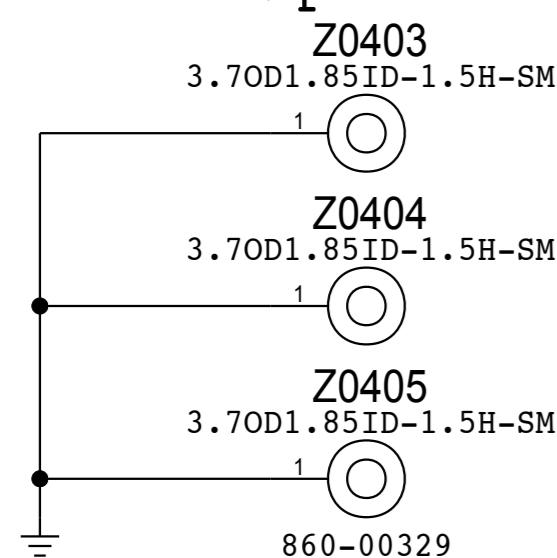


| PART NUMBER | QTY | DESCRIPTION                   | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-------------------------------|---------------|----------|------------|
| 806-00889   | 1   | FENCE,EMI,SSD,TOP,X261        | SH0403        | CRITICAL |            |
| 870-00878   | 1   | TAPE,CONDUCTIVE,SSD,REEL,X261 | SSD_TAPE_TOP  | CRITICAL |            |

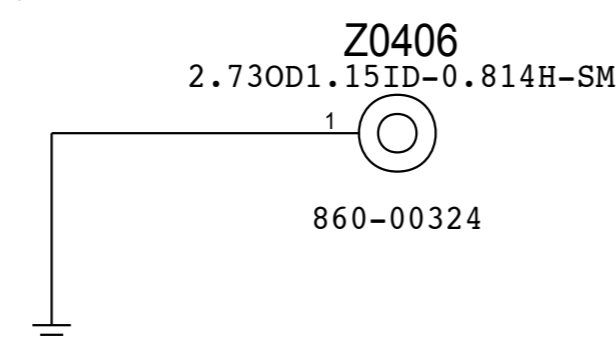


| PART NUMBER | QTY | DESCRIPTION                   | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-------------------------------|---------------|----------|------------|
| 806-05622   | 1   | FENCE,EMI,SSD,BTM,X260        | SH0404        | CRITICAL |            |
| 870-01557   | 1   | TAPE,CONDUCTIVE,SSD,REEL,X260 | SSD_TAPE_BTM  | CRITICAL |            |

### CPU Heat Spreader Bosses



### USB-C BTB Connector Boss



| PART NUMBER | QTY | DESCRIPTION         | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|---------------------|---------------|----------|------------|
| 870-00998   | 1   | MYLAR,SHIM,MLB,X261 | MYLAR_SHIM    | CRITICAL |            |

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|---|----------------|----------------------|----------|
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| <b>PD PARTS</b>   |                |                      |          |
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|   |                | PAGE                 | 4 OF 130 |
|   |                | SHEET                | 4 OF 67  |

CRITICAL OMIT\_TABLE

U0500 SKL-Y-ULX BGA SKL-Y SYM 1 OF 20 DISPLAY

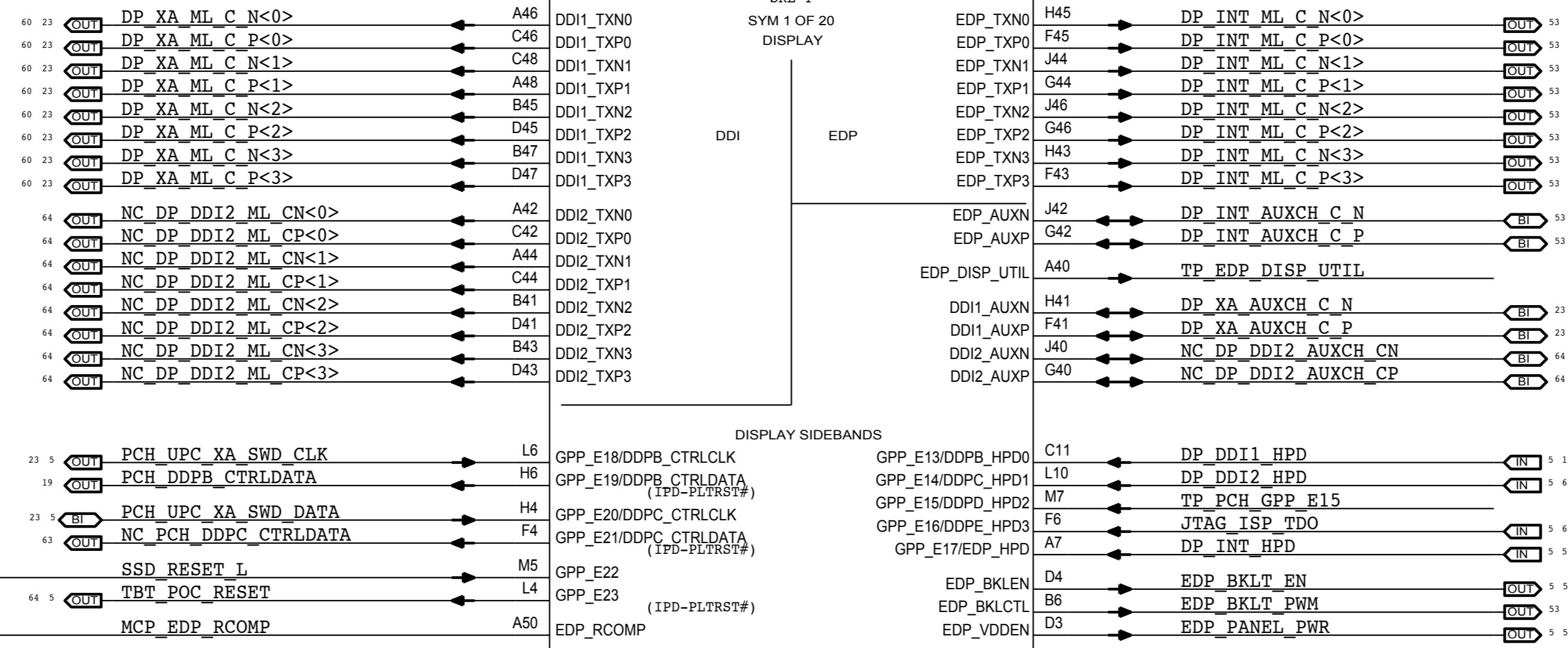
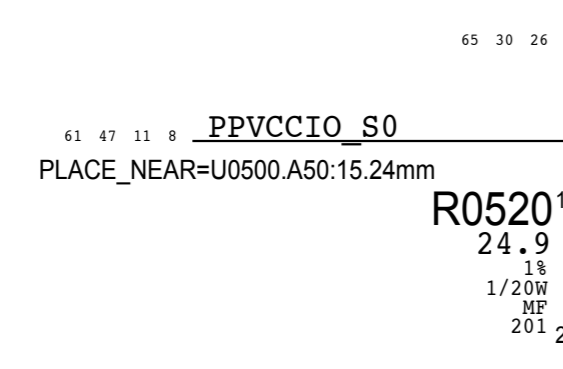
DDI Port Assignments:

USBC Sink 0

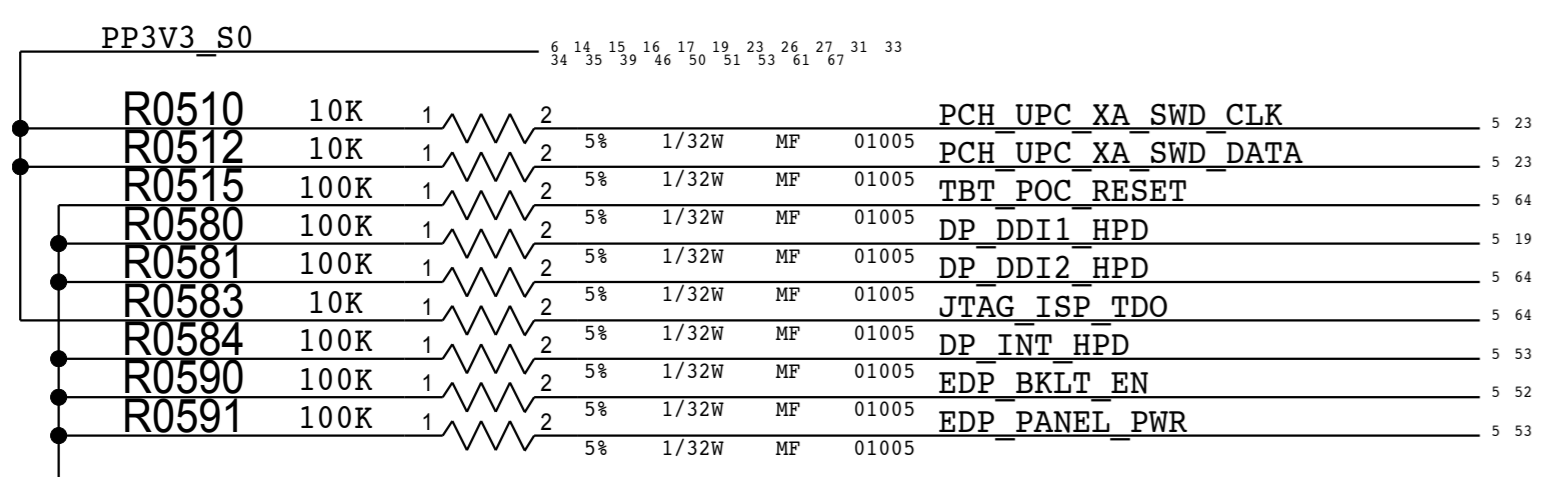
USBC Sink 1

EDP Port Assignment:

Internal panel

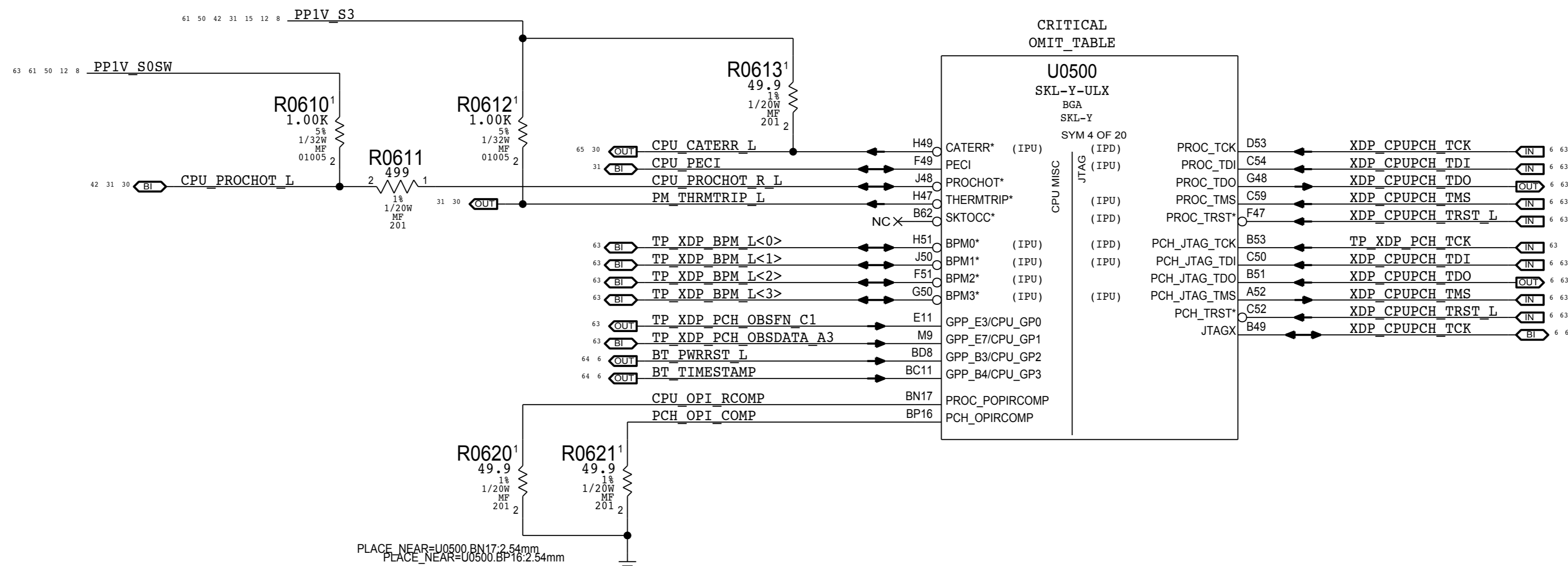


'Ridge systems: GPP\_E18: JTAG\_TBT\_X\_TMS GPP\_E20: JTAG\_TBT\_T\_TMS

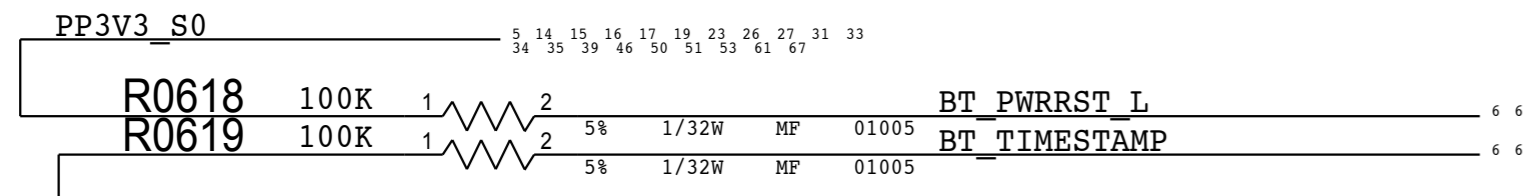
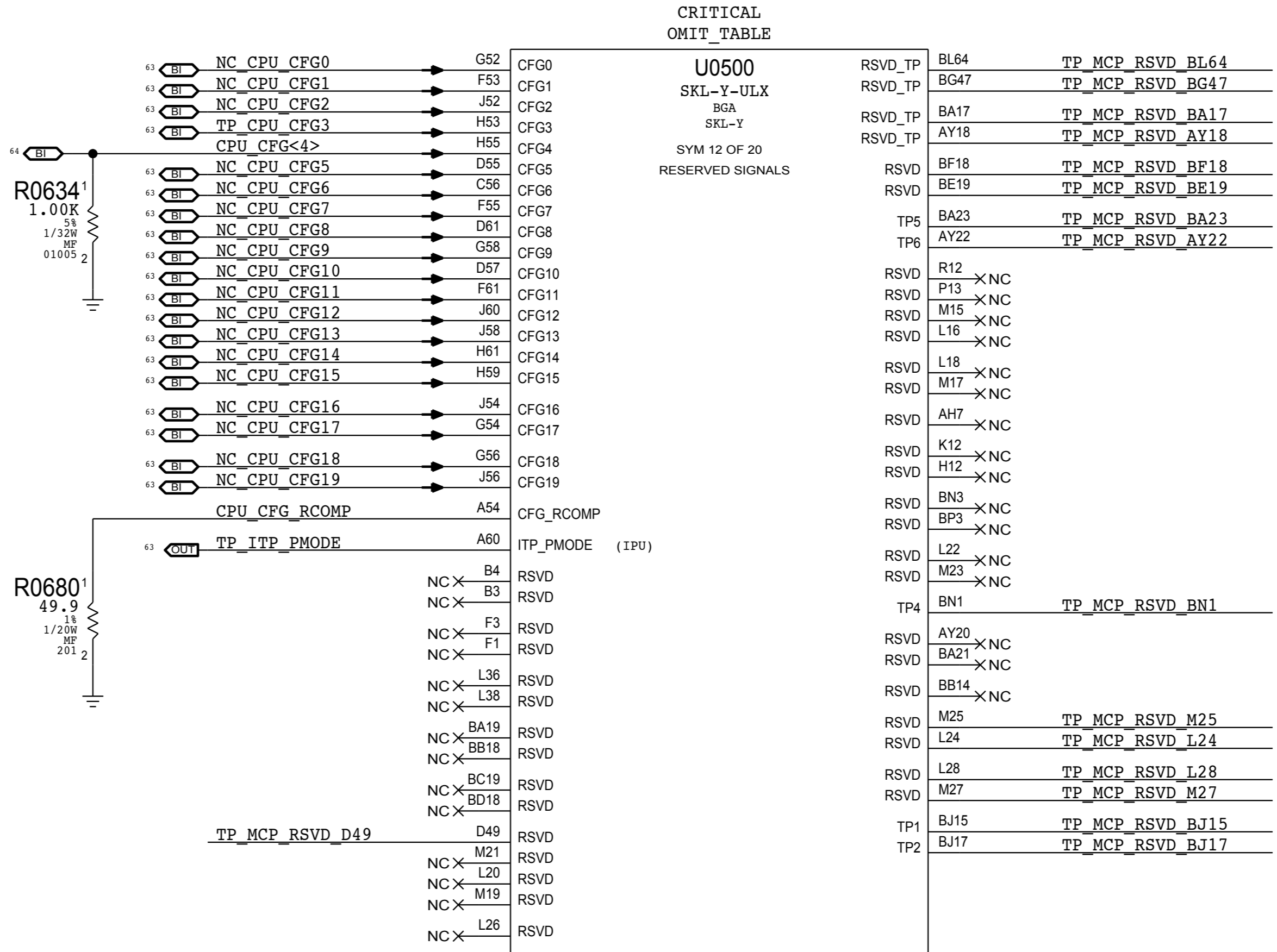


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| <b>CPU GFX</b>  |  |                      |          |
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|   |  | SHEET                | 5 OF 67  |

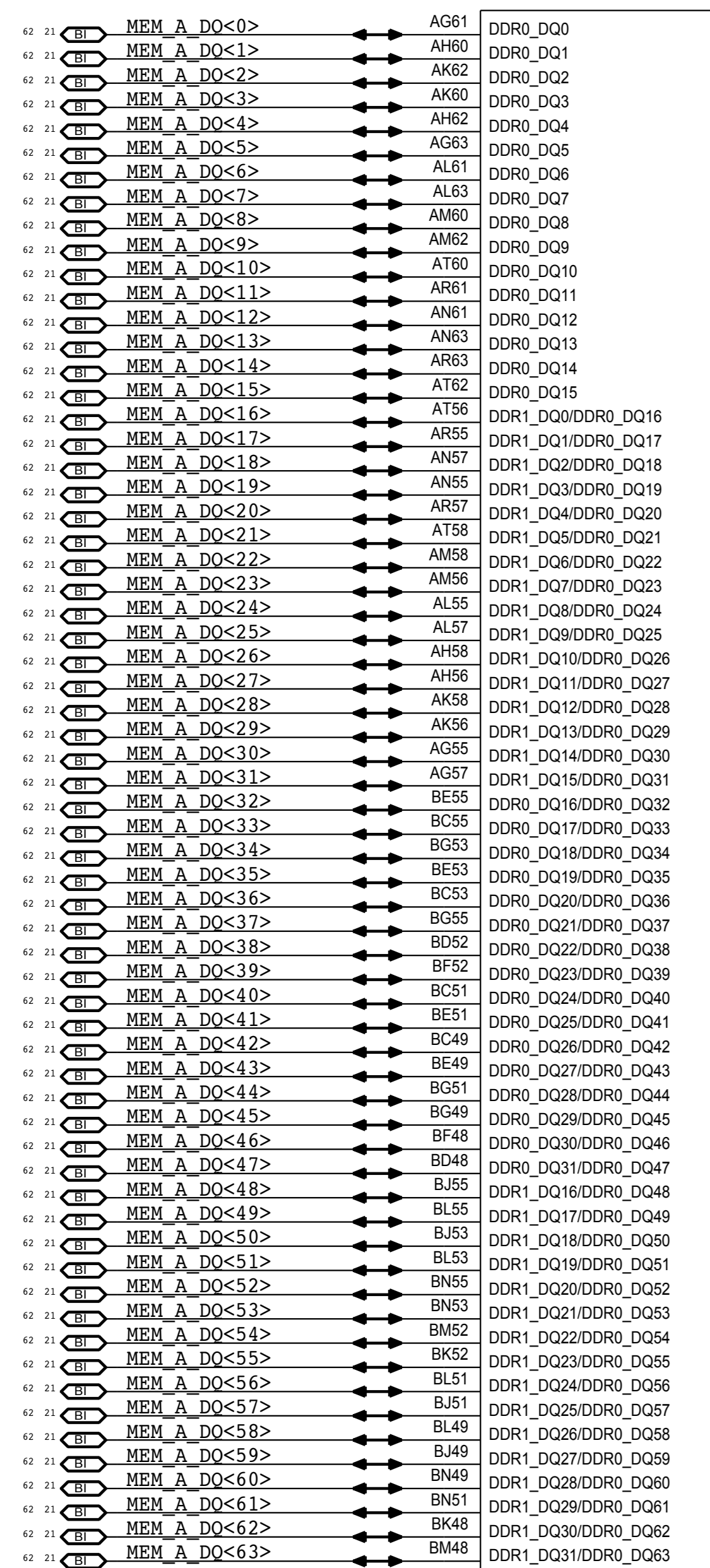


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PLACE\_NEAR=U0500.BP16:2.54mm



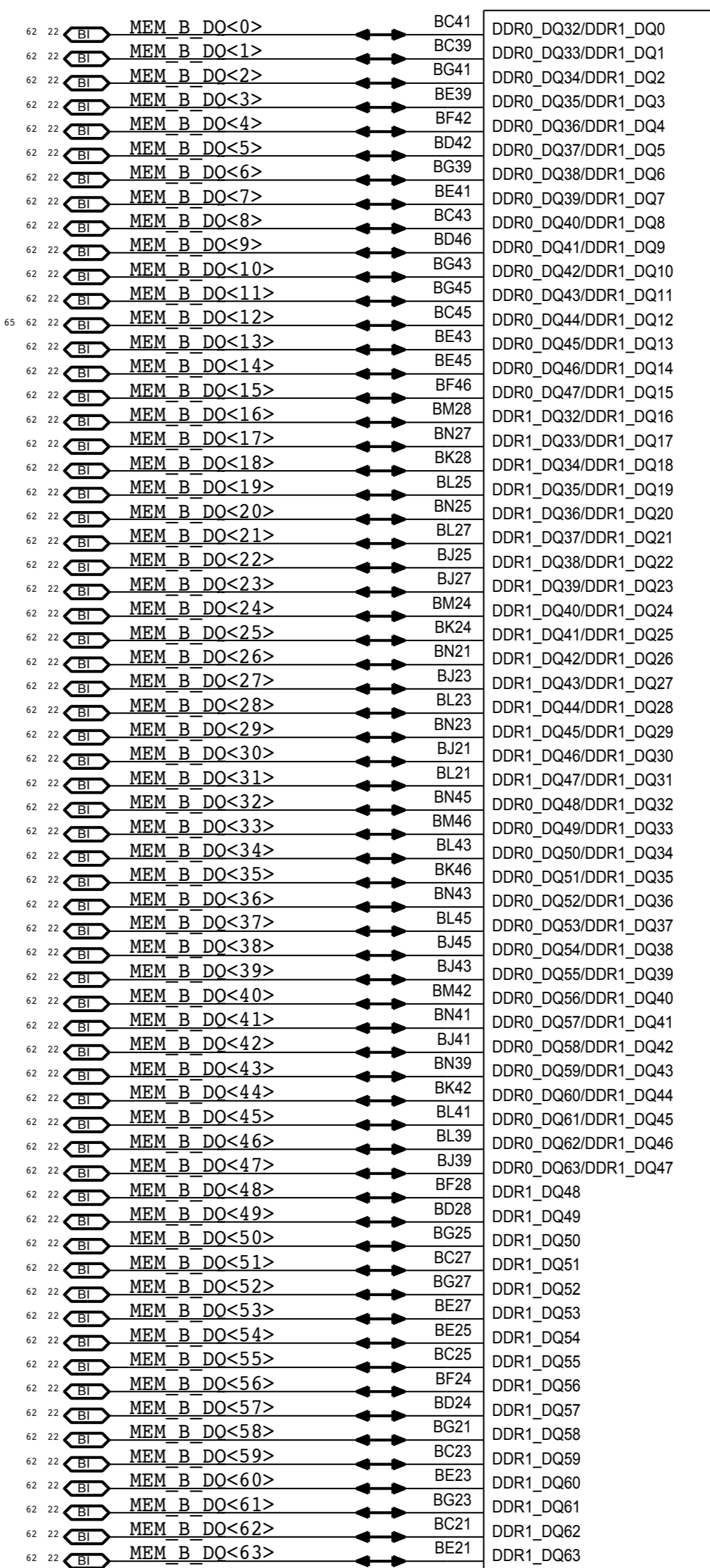
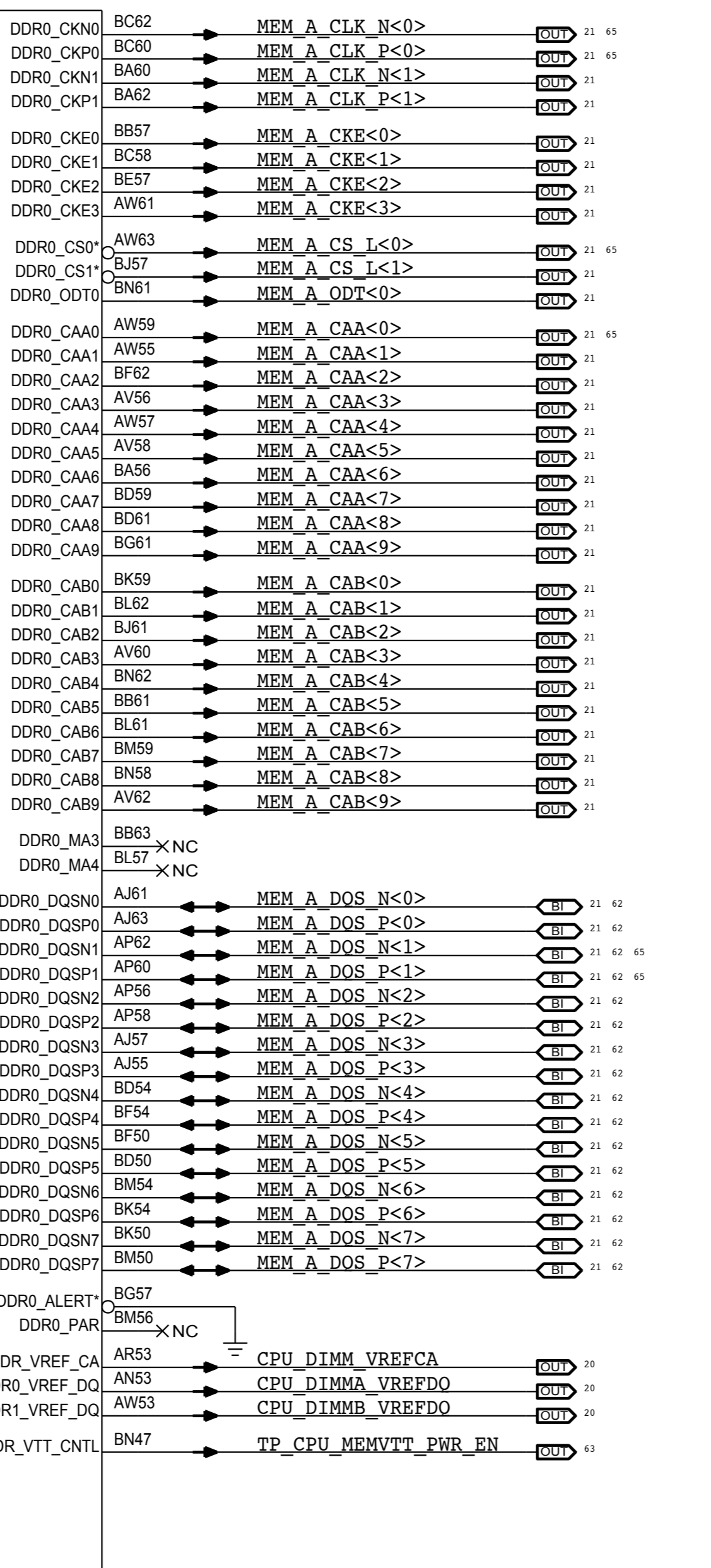
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| <b>CPU Misc/JTAG/CFG/RSVD</b>   |  |                      |          |
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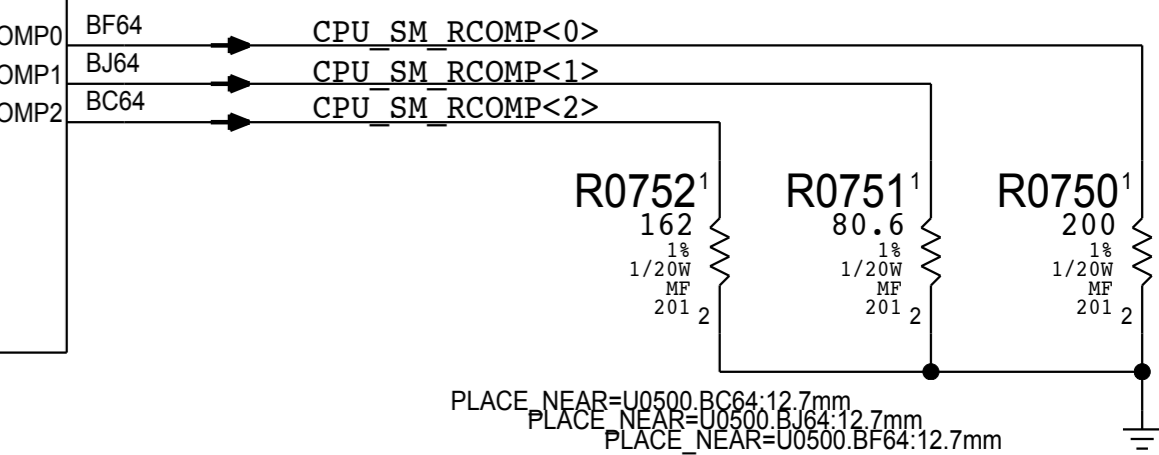
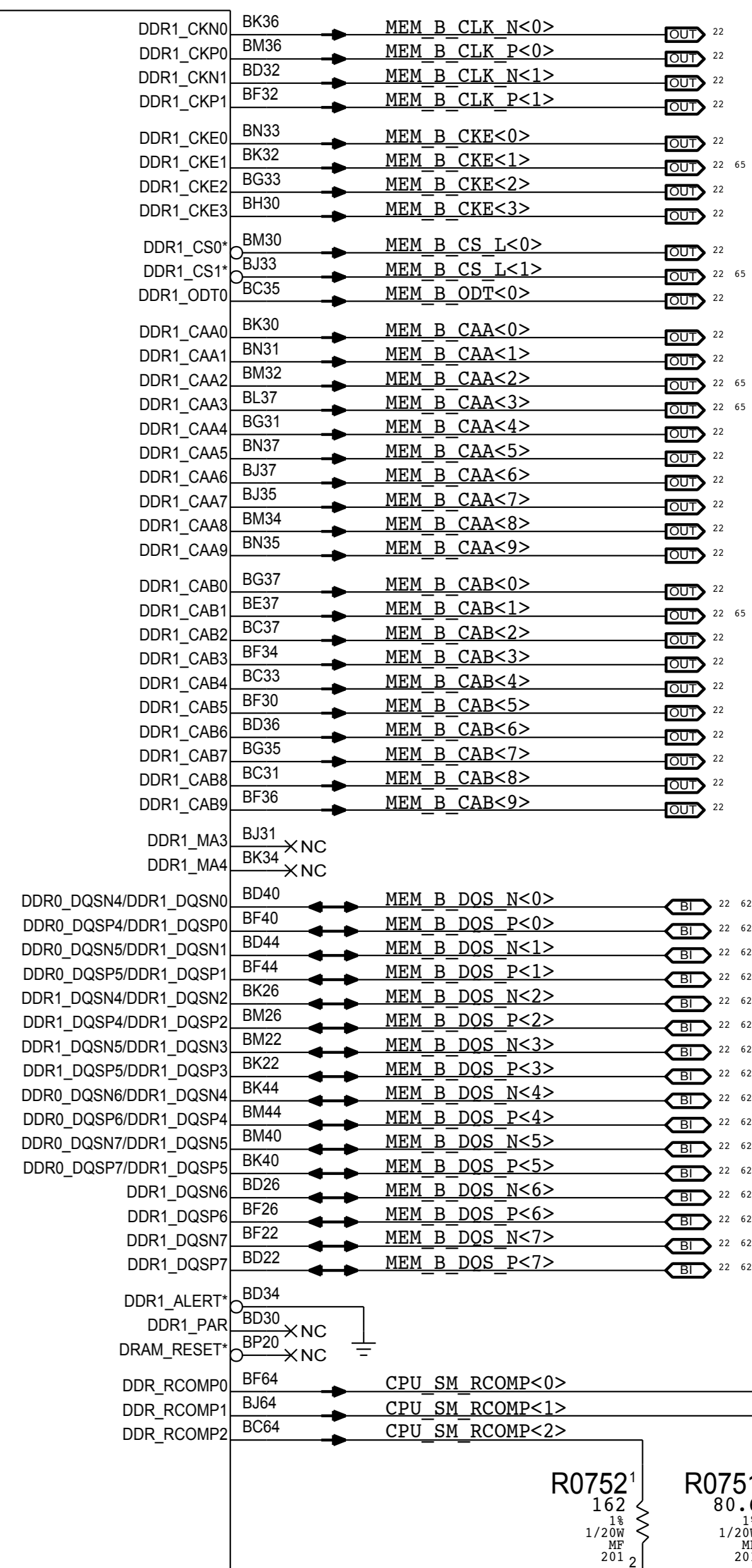
CRITICAL OMIT\_TABLE

U0500 SKL-Y-ULX BGA SKL-Y SYM 2 OF 20 DDR CH - A



CRITICAL OMIT\_TABLE

U0500 SKL-Y-ULX BGA SKL-Y SYM 3 OF 20 DDR CH - B



PLACE\_NEAR=U0500:BC84:12.7mm PLACE\_NEAR=U0500:BF84:12.7mm

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| <b>CPU LPDDR3 Interface</b>   |  | DRAWING NUMBER       | SIZE      |
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|   |  | SHEET                | 7 OF 67   |

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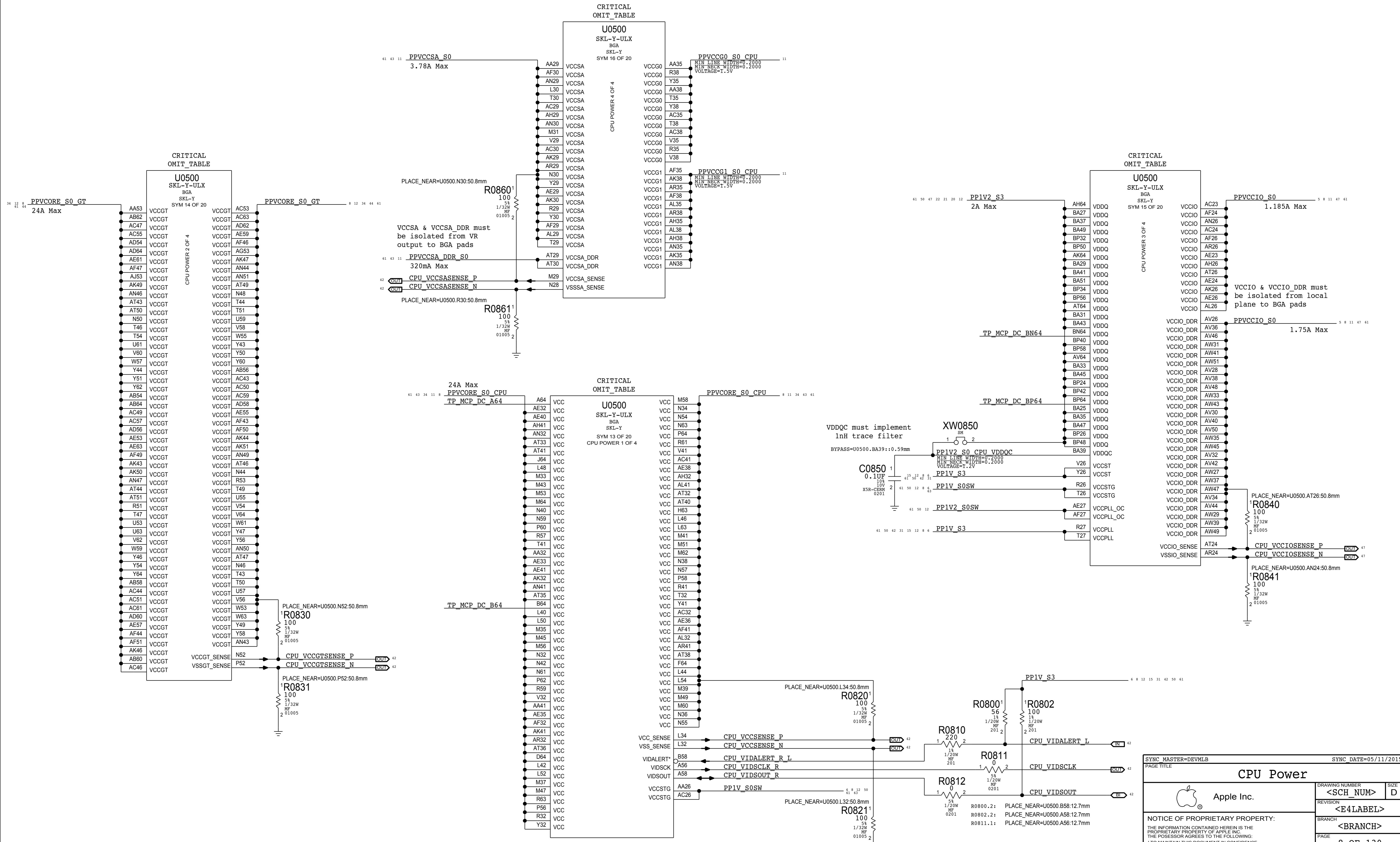
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B

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A



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| <b>CPU Power</b>   |  |                      |          |
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|                    |  | SHEET                | 8 OF 67  |

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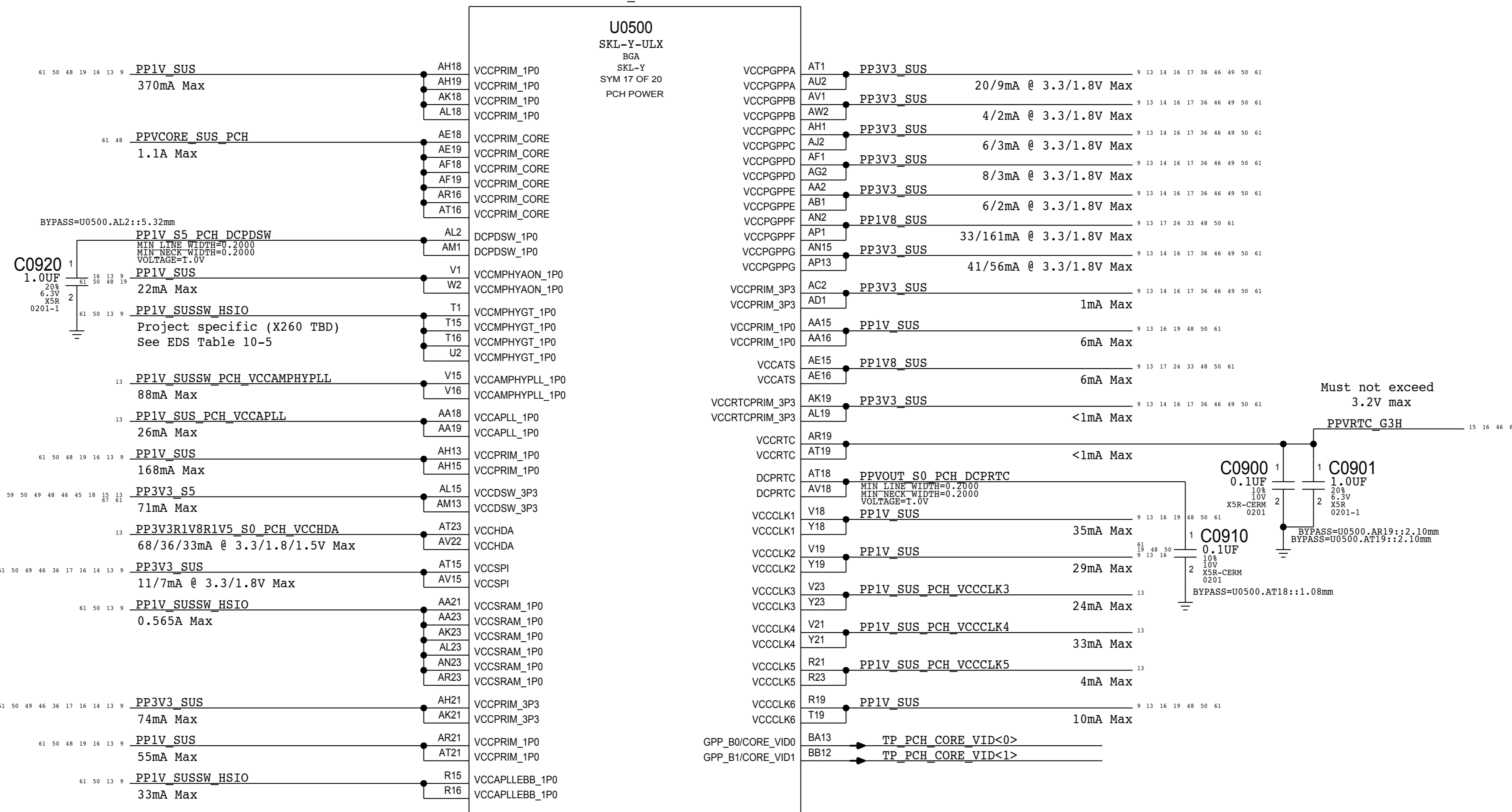
BOM\_COST\_GROUP=CPU & CHIPSET



SPT-LP current estimates from Sunrise Point-LP PCH EDS vol 1, doc #545659, vl.2.  
VCCAMPHYPLL\_1P0 and VCCPRIM\_1P0 / VCCPRIM\_3P3 breakdowns from Srini email 4/13/15

NOTE: Aliases not used on CPU supply outputs to avoid any extraneous connections.

CRITICAL OMIT\_TABLE



SYNC\_MASTER=DEVMLB SYNC\_DATE=05/11/2015  
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### PCH Power

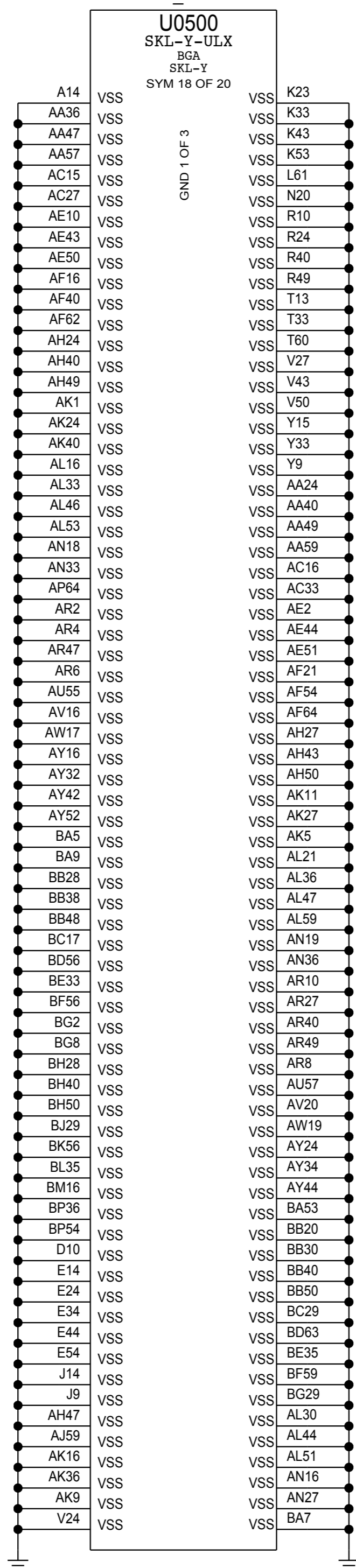
Apple Inc.

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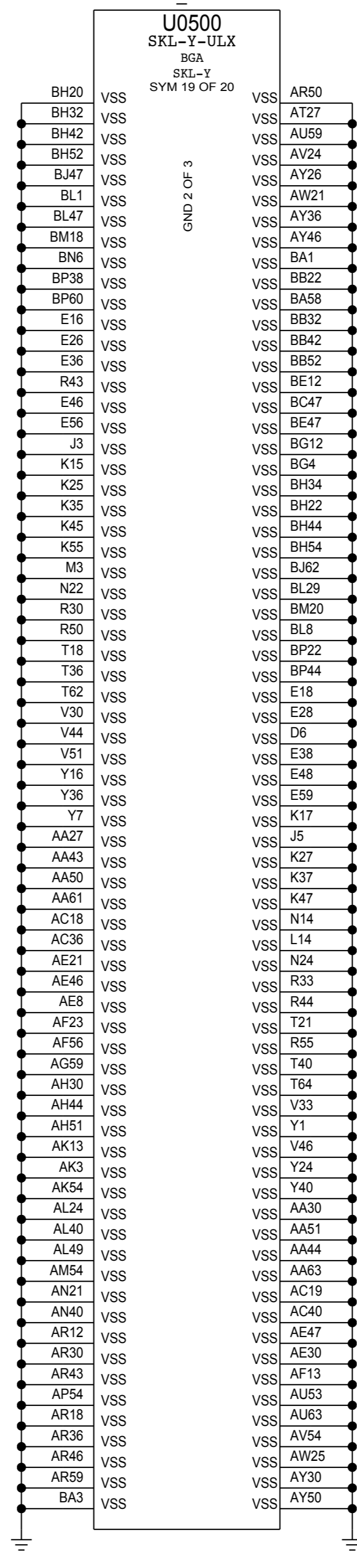
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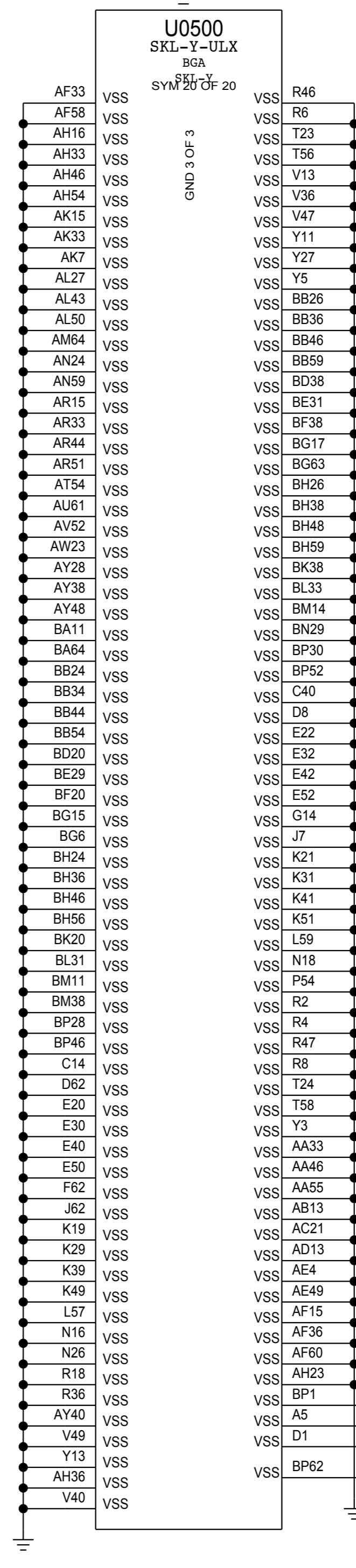
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CRITICAL OMIT\_TABLE



CRITICAL OMIT\_TABLE



SYNC\_MASTER=DEVMLB SYNC\_DATE=04/14/2015

PAGE TITLE CPU & PCH Grounds

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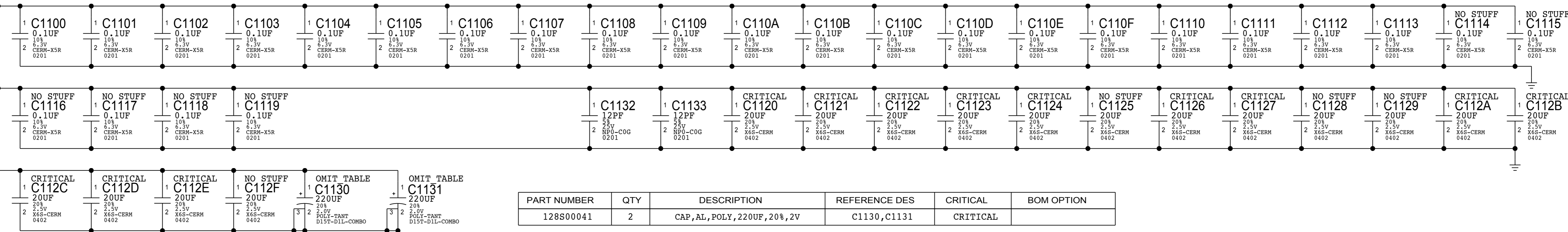
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| PAGE           |      |
| 10 OF 130      |      |
| SHEET          |      |
| 10 OF 67       |      |

BOM\_COST\_GROUP=CPU & CHIPSET

All Intel recommendations from Intel doc #543016 Skylake U and Y Platform Design Guide Rev 1.3 unless stated otherwise  
 Intel's placeholders are no longer required per 4/20/15 email from Srin

### CPU VCORE Decoupling

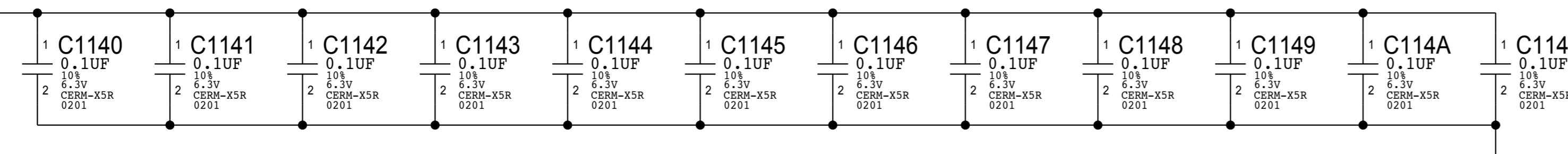
Intel recommendation (Table 52-2): 20x 0.1uF 0201 STUFF, 8x 10uF 0402, 6x 47uF 6.3V 0805 STUFF (2x NO STUFF)  
 Apple implementation : 20x 0.1uF 0201 STUFF (6x NO STUFF), 16x 20uF 0402, 3x 270uF 2V B2



| PART NUMBER | QTY | DESCRIPTION                   | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-------------------------------|---------------|----------|------------|
| 128S00041   | 2   | CAP, AL, POLY, 220UF, 20%, 2V | C1130, C1131  | CRITICAL |            |

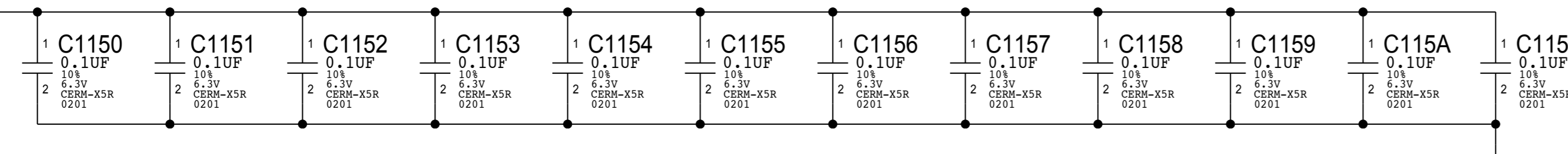
### CPU VCORE G0 Decoupling

Intel recommendation (Table 52-2): 12x 0.1uF 0201  
 Apple implementation : 12x 0.1uF 0201



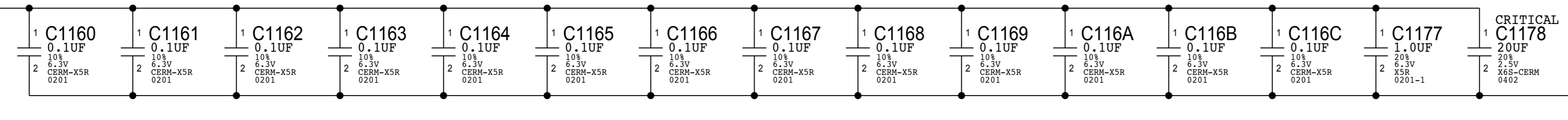
### CPU VCORE G1 Decoupling

Intel recommendation (Table 52-2): 12x 0.1uF 0201  
 Apple implementation : 12x 0.1uF 0201



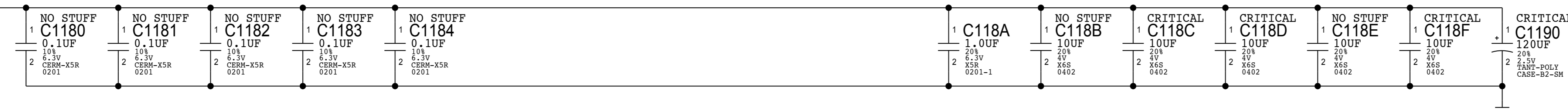
### CPU VCCIO Decoupling

Intel recommendation (Table 52-2): 13x 0.1uF 0201 STUFF (10x NO STUFF), 1x 1uF 0402, 1x 22uF 0805  
 Apple implementation : 13x 0.1uF 0201 STUFF (10x NO STUFF), 1x 1uF 0201, 1x 20uF 0402



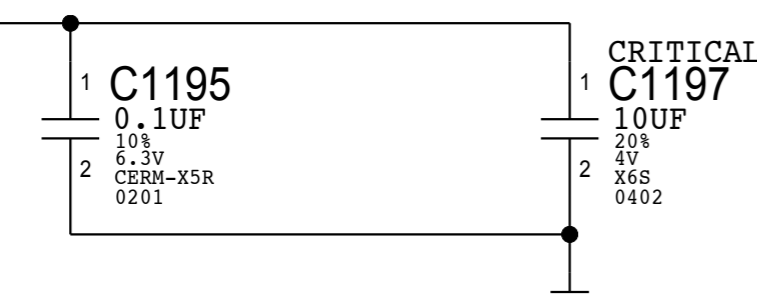
### CPU VCCSA Decoupling

Intel recommendation (Table 52-2): 1x 1uF 0201, 4x 22uF 0603  
 Apple implementation : 1x 1uF 0201, 5x 0.1uF NO STUFF, 5x 20uF 0402, 1x 270uF 2V B2



### CPU VCCSA DDR Decoupling

Intel recommendation (Table 52-2): 1x 0.1uF 0201 STUFF, 1x 22uF 0603  
 Apple implementation : 1x 0.1uF 0201 STUFF, 1x 20uF 0402



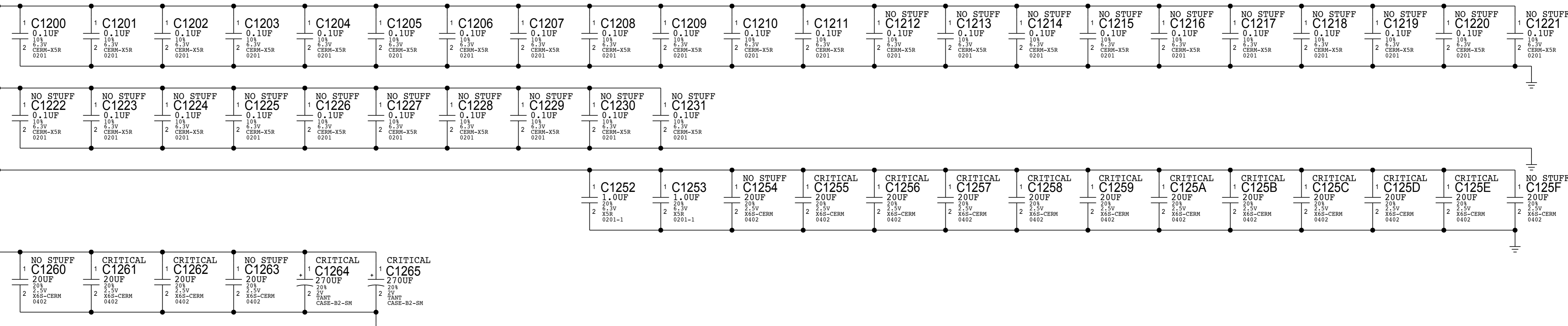
BOM\_COST\_GROUP=CPU & CHIPSET

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|   |  | PAGE                 | 11 OF 130 |
|   |  | SHEET                | 11 OF 67  |

All Intel recommendations from Intel doc #543016 Skylake U and Y Platform Design Guide Rev 1.3 unless stated otherwise  
 Intel's placeholders are no longer required per 4/20/15 email from Srin

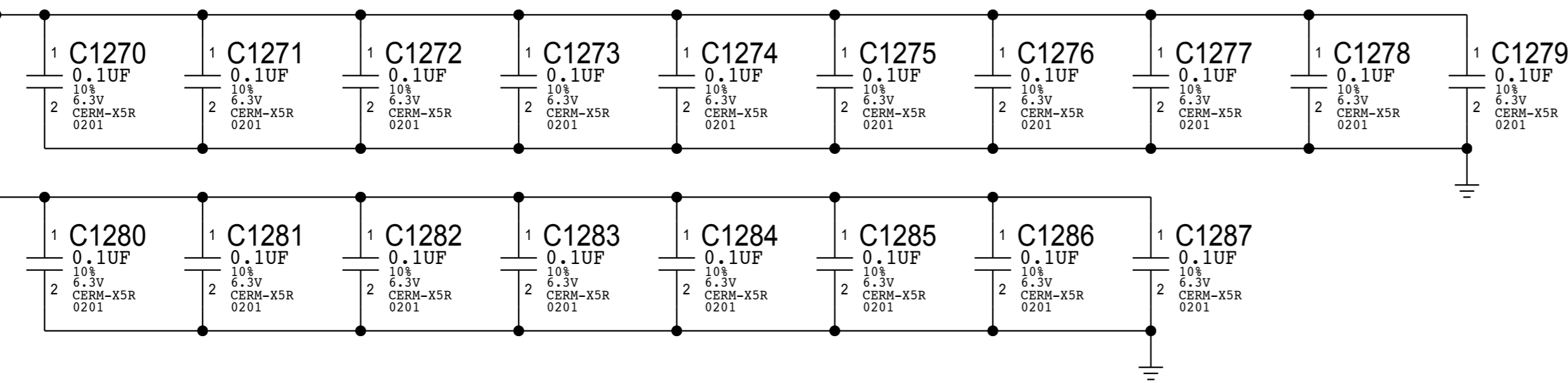
### CPU GT Decoupling

Intel recommendation (Table 52-2): 12x 0.1uF 0201 STUFF, 2x 1uF 0402, 2x 10uF 0402 NO STUFF, 9x 47uF 6.3V 0805  
 Apple implementation : 12x 0.1uF 0201 STUFF (20x NO STUFF), 2x 1uF 0201, 16x 20uF 0402, 2x 270uF 2V B2

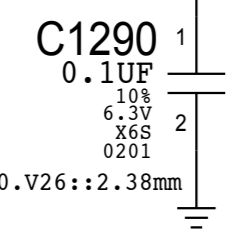


### CPU VDDQ DECOUPLING

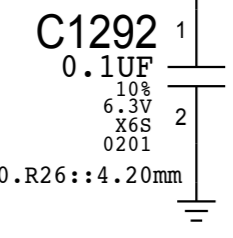
Intel recommendation (Table 52-2): 18x 0.1uF 0201  
 Apple implementation : 18x 0.1uF 0201



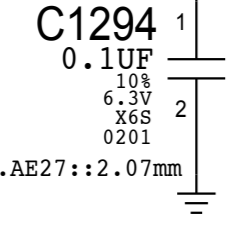
CPU VCCST BYPASS  
 (CPU 1.0V SUSTAIN PWR)  
 PPIV\_S3



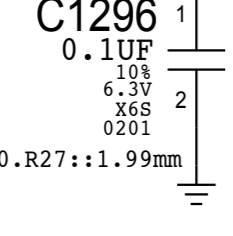
CPU VCCSTG BYPASS  
 (CPU 1.0V SUSTAIN GATED PWR)  
 PPIV\_S0SW



CPU VCCPLL\_OC BYPASS  
 (CPU 1.2V PLL PWR)  
 PPIV2\_S0SW

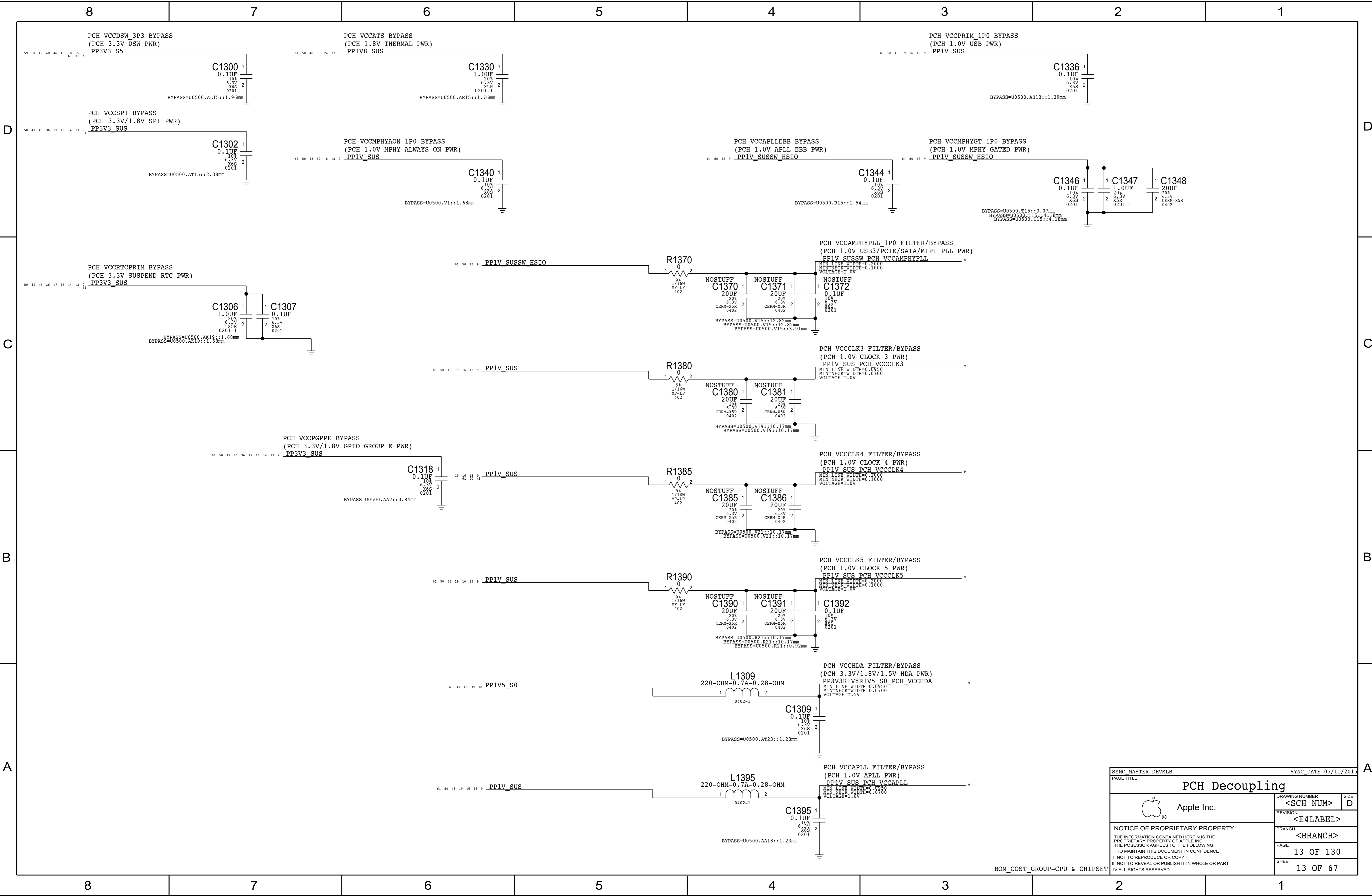


CPU VCCPLL BYPASS  
 (CPU 1.0V DIGITAL PLL PWR)  
 PPIV\_S3



NOTE: Bypass calcs based on 0.1mm trace width with worst case stackup and 500pH added for power/ground via pair.

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|   |  | PAGE                 | 12 OF 130 |
|   |  | SHEET                | 12 OF 67  |



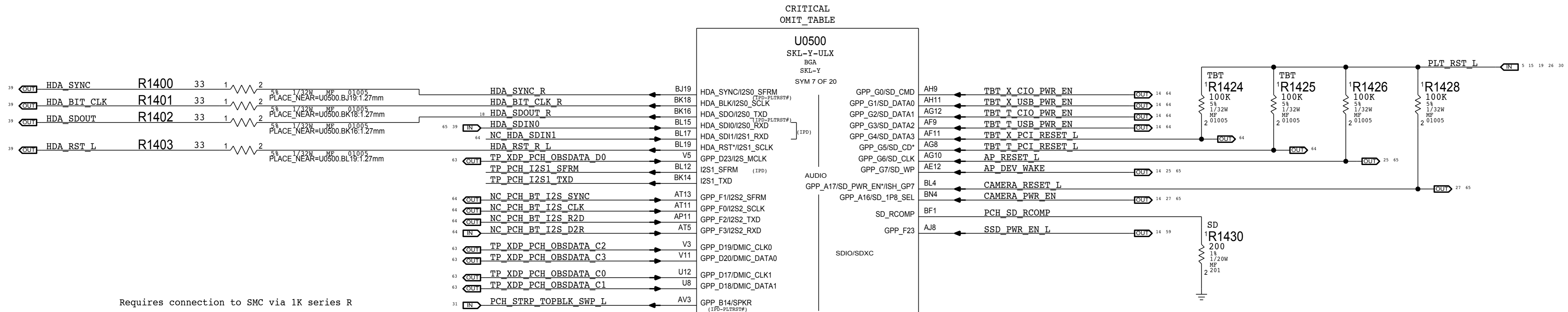
BOM\_COST\_GROUP=CPU & CHIPSET

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|   |  | SHEET                | 13 OF 67  |



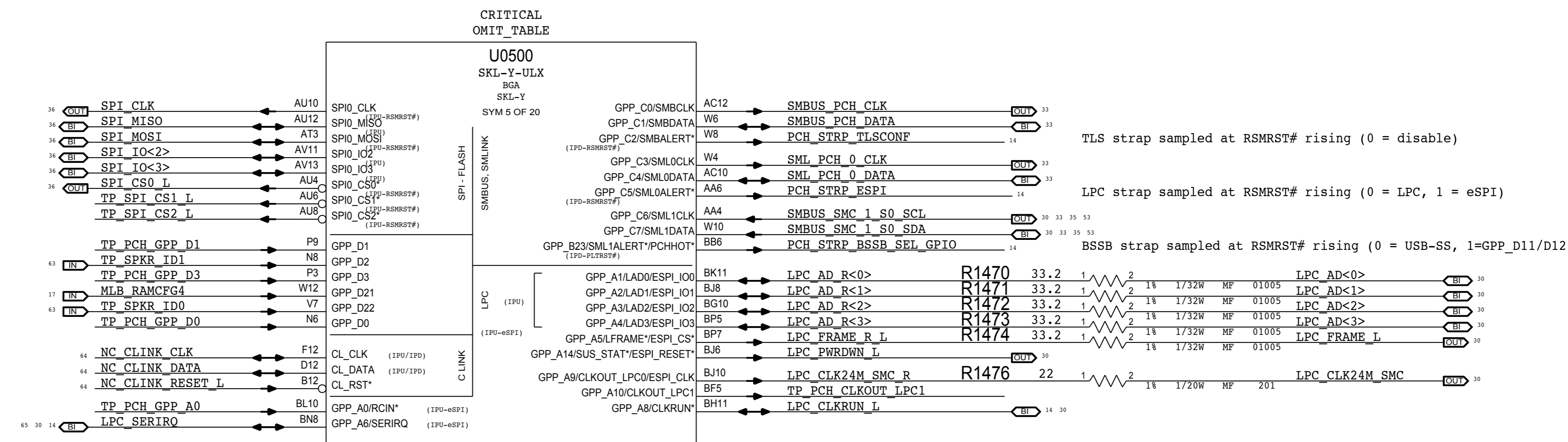
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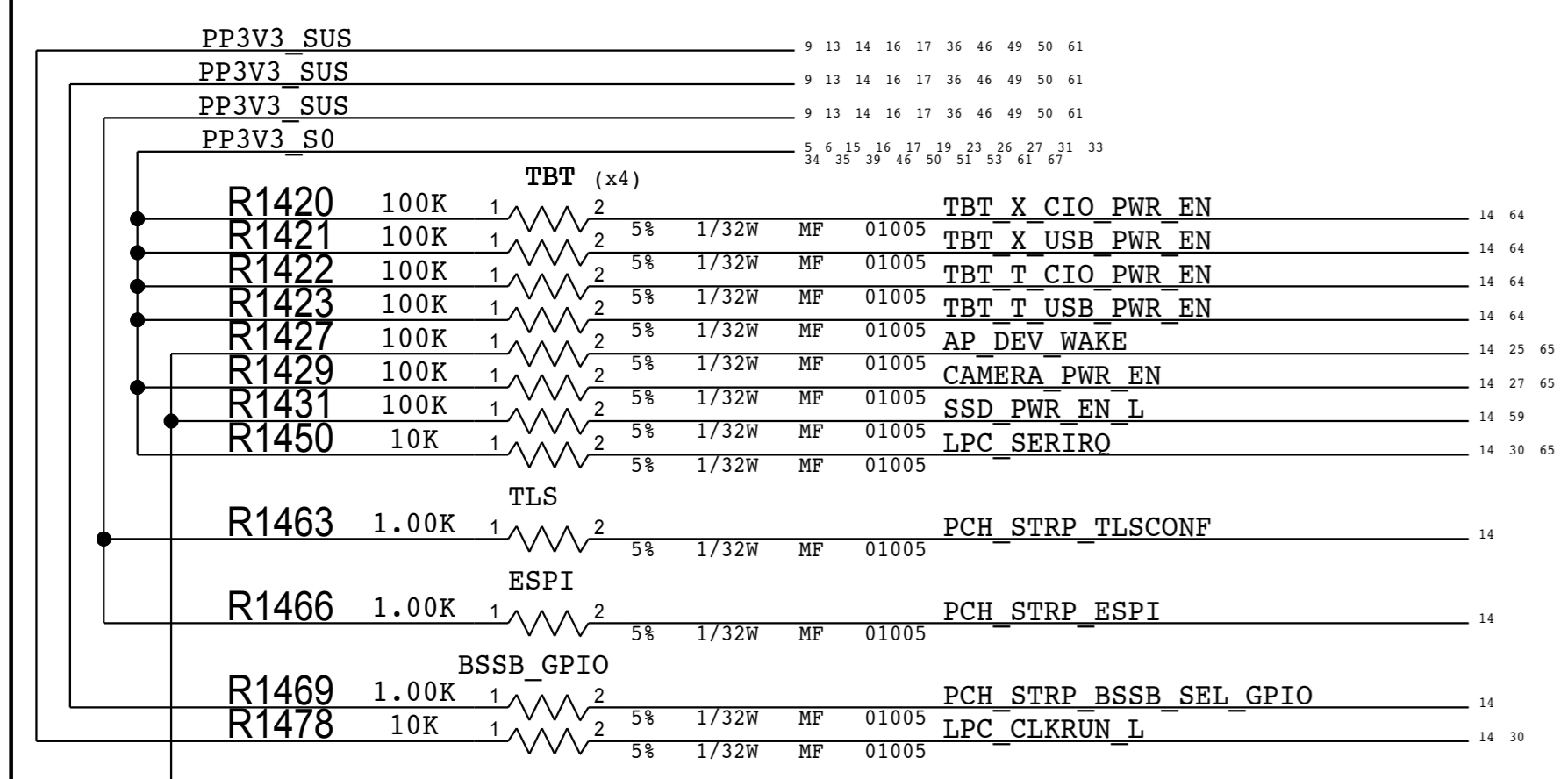
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|   |  | PAGE                 | 14 OF 130 |
|   |  | SHEET                | 14 OF 67  |

D

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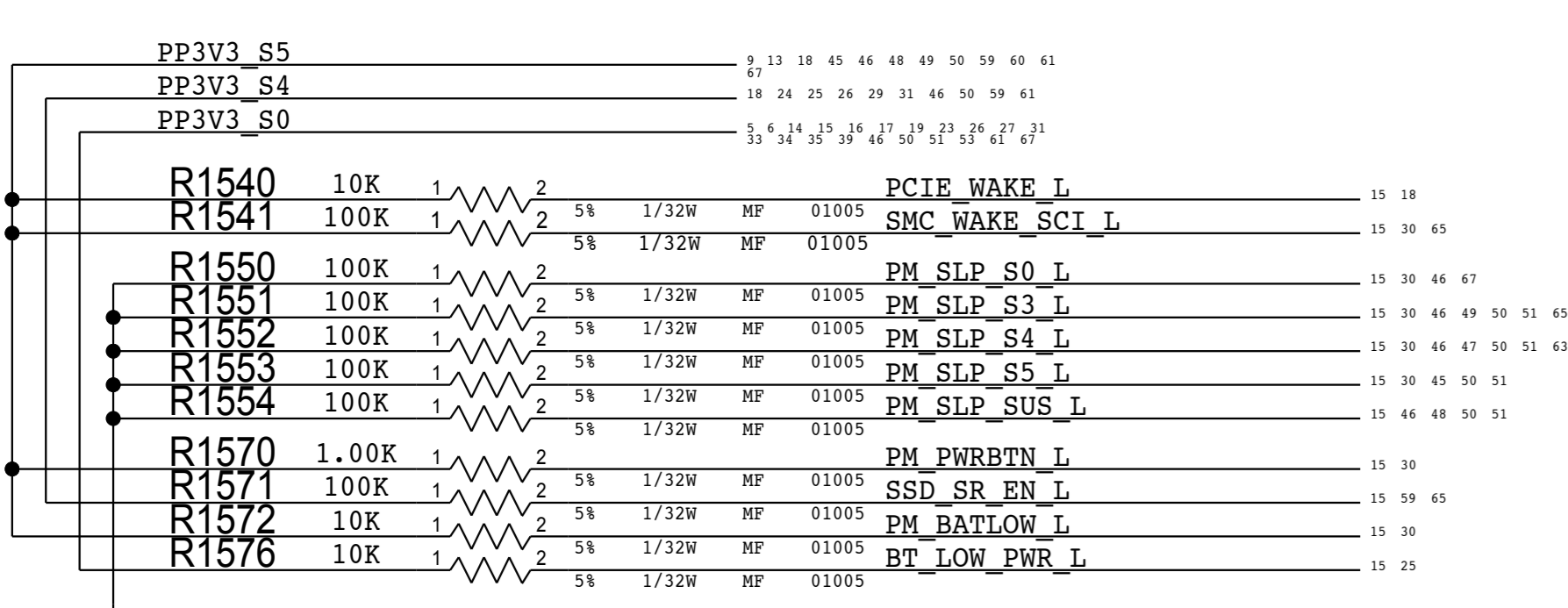
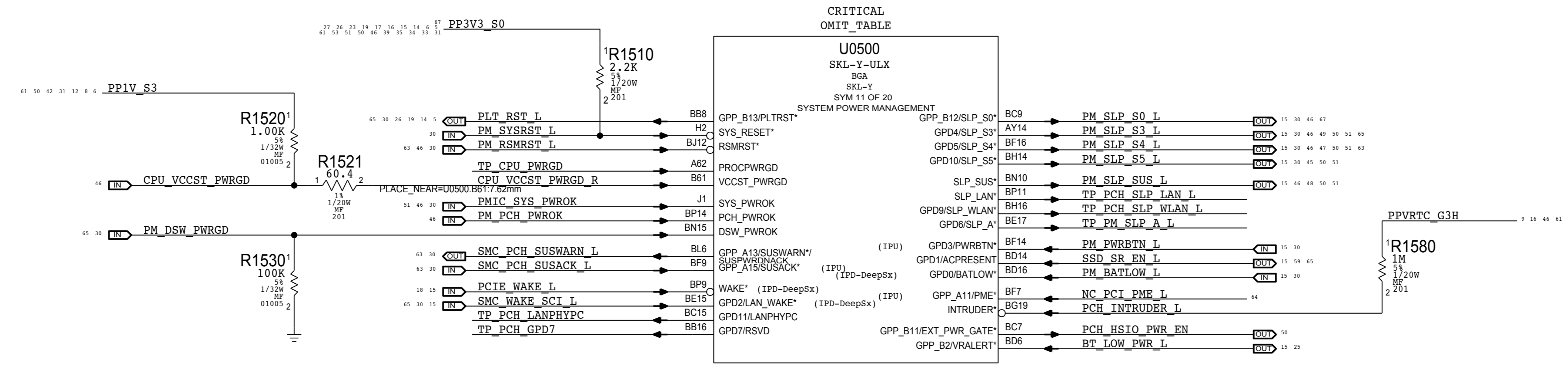
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BOM\_COST\_GROUP=CPU & CHIPSET

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|   |  | <BRANCH>             |           |
|   |  | PAGE                 | 15 OF 130 |
|   |  | SHEET                | 15 OF 67  |

PCIe Port Assignments:

SSD lane 0

SSD lane 1

SSD lane 2

SSD lane 3

Reserved: Thunderbolt A lane 0

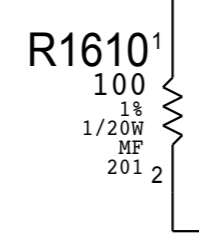
Reserved: Thunderbolt A lane 1

Reserved: Thunderbolt B lane 0

Reserved: Thunderbolt B lane 1

Airport

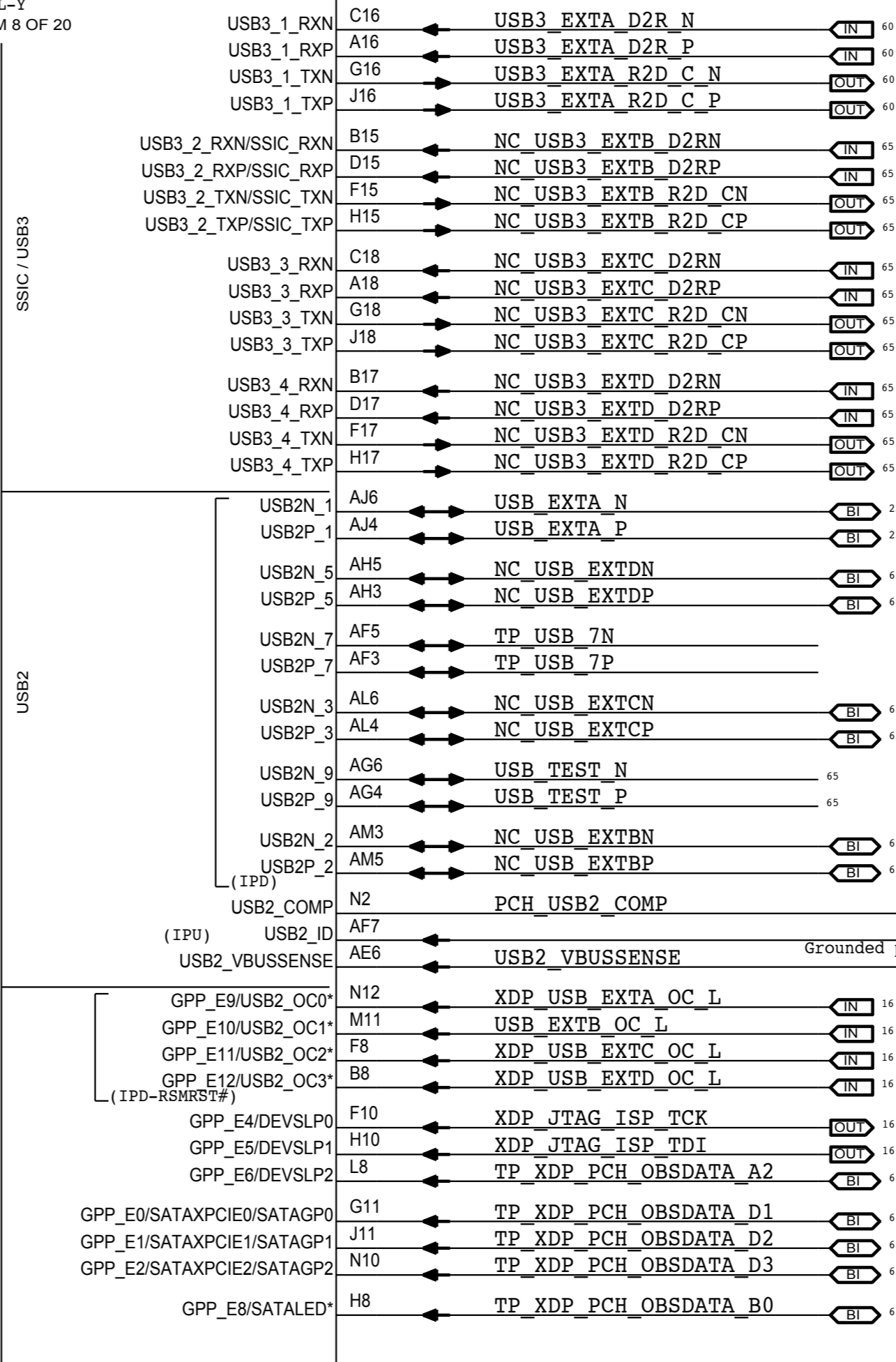
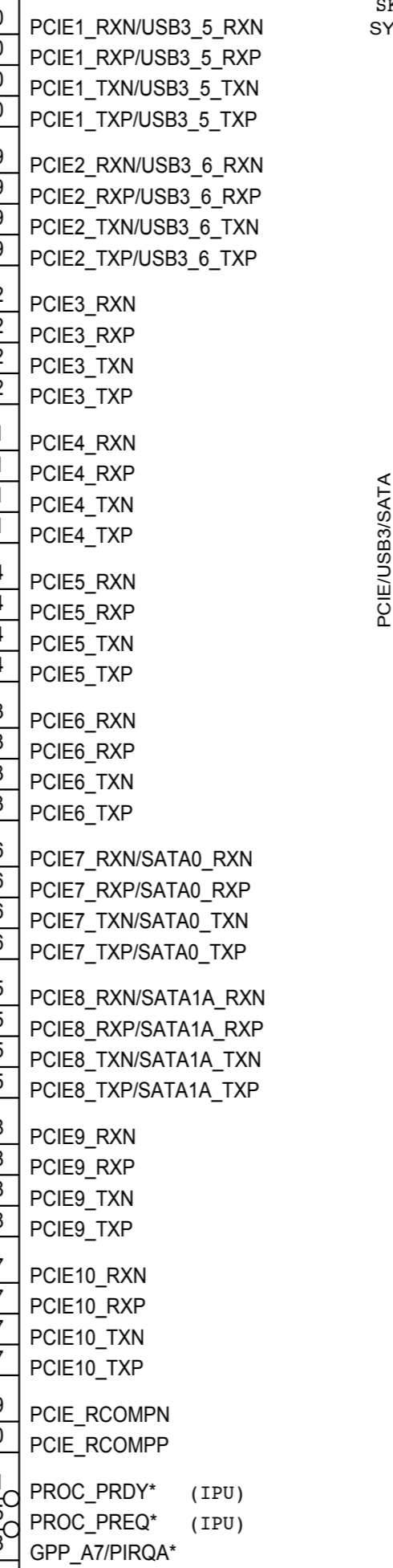
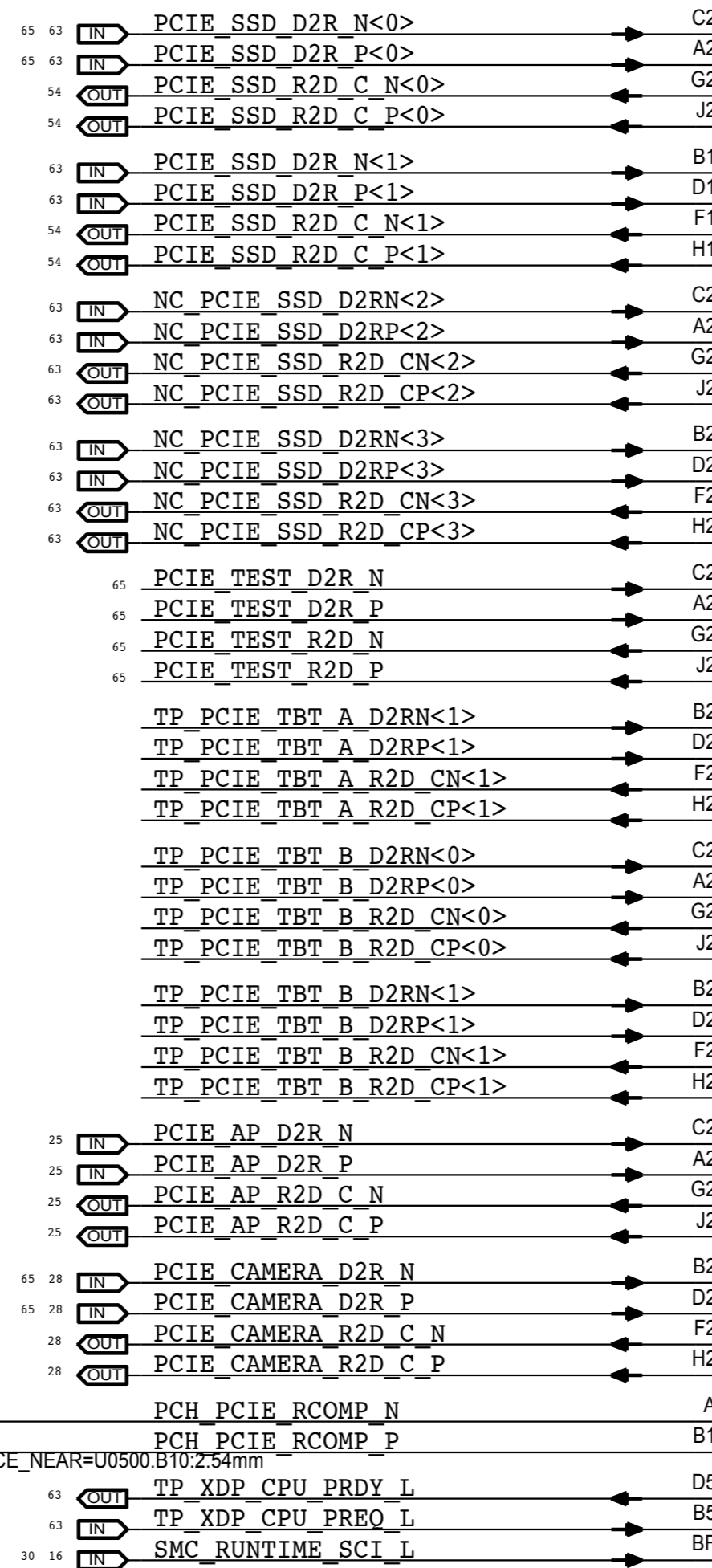
Camera



PLACE\_NEAR=U0500.B10:2.54mm

CRITICAL OMIT TABLE

U0500 SKL-Y-ULX BGA SKL-Y SYM 8 OF 20



USB3 Port Assignments:

Ext A (SS, DCI)

Ext B (SS)

Ext C (SS)

Ext D (SS)

USB Port Assignments:

Ext A (LS/FS/HS)

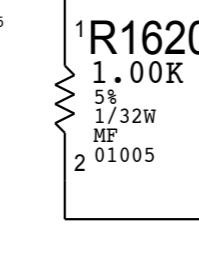
Ext D (LS/FS/HS)

Unused

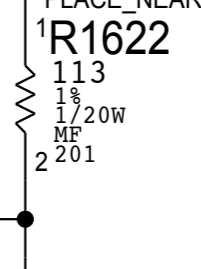
Ext C (LS/FS/HS)

Unused

Ext B (LS/FS/HS)



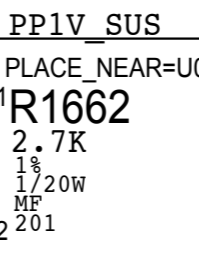
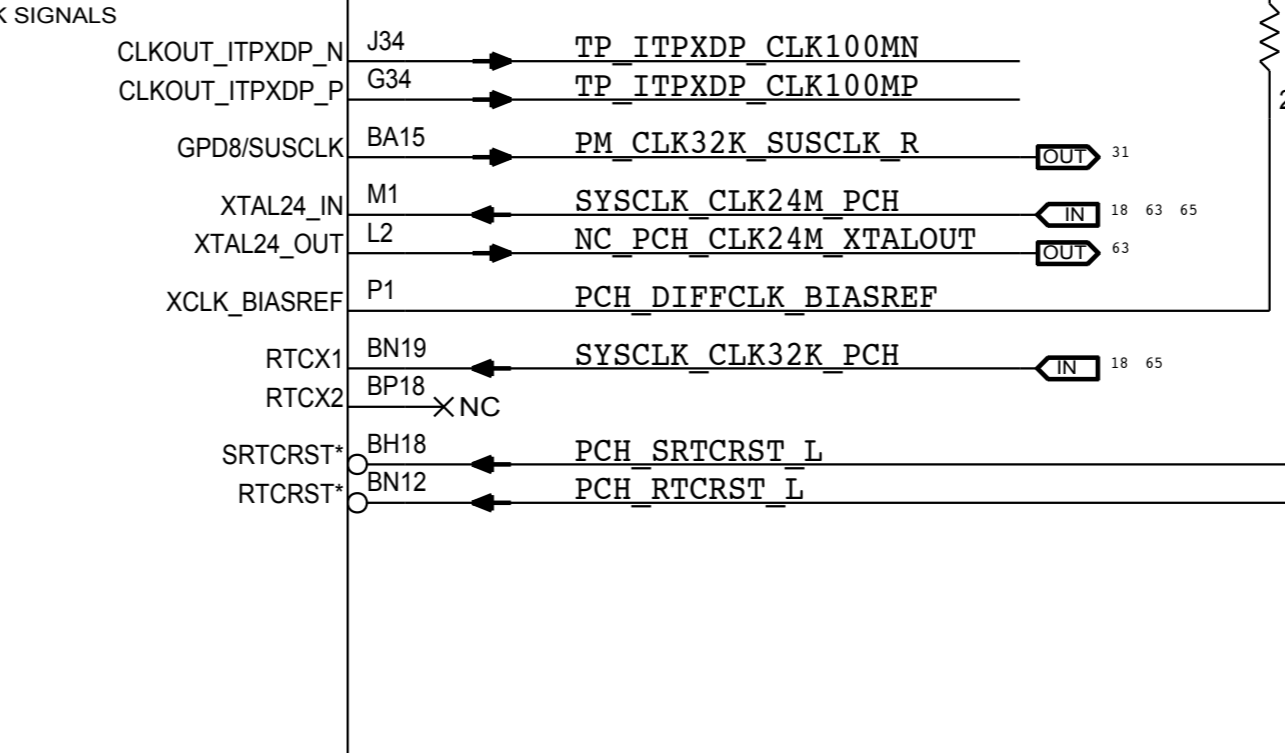
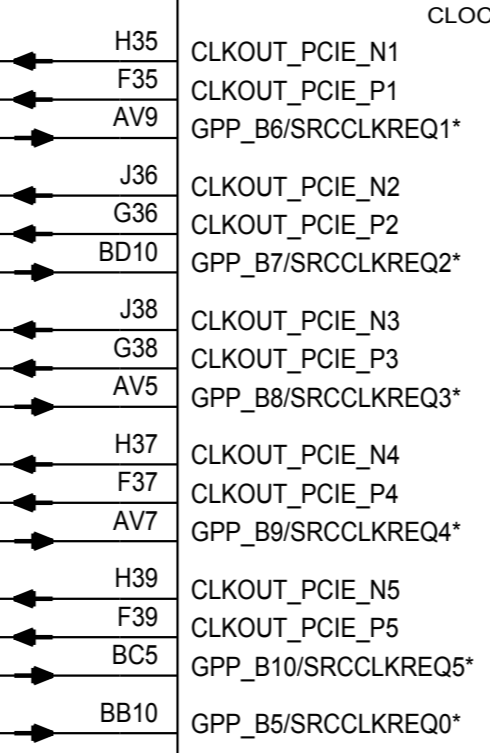
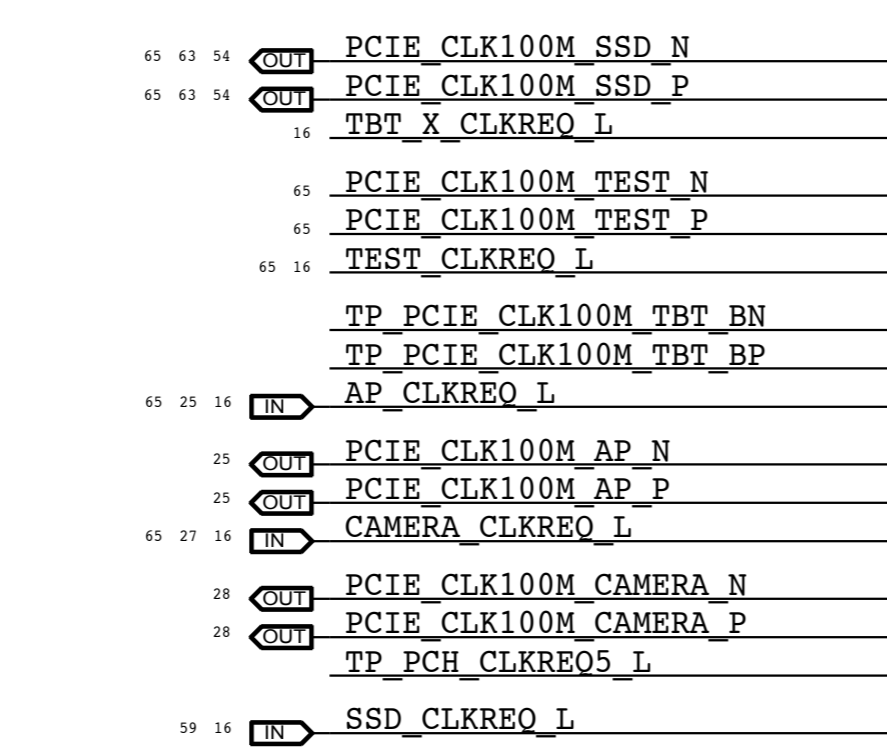
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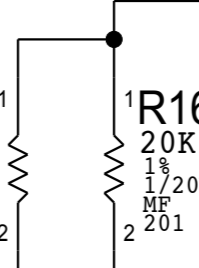
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CRITICAL OMIT TABLE

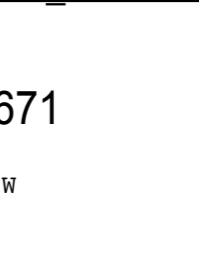
U0500 SKL-Y-ULX BGA SKL-Y SYM 10 OF 20 CLOCK SIGNALS



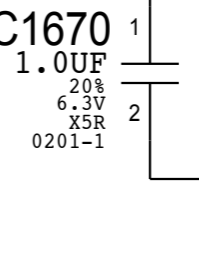
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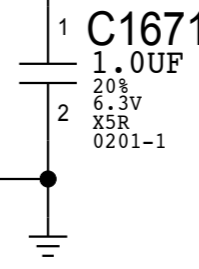
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PLACE\_NEAR=U0500.P1:2.54mm



PLACE\_NEAR=U0500.P1:2.54mm



PLACE\_NEAR=U0500.P1:2.54mm

D

D

C

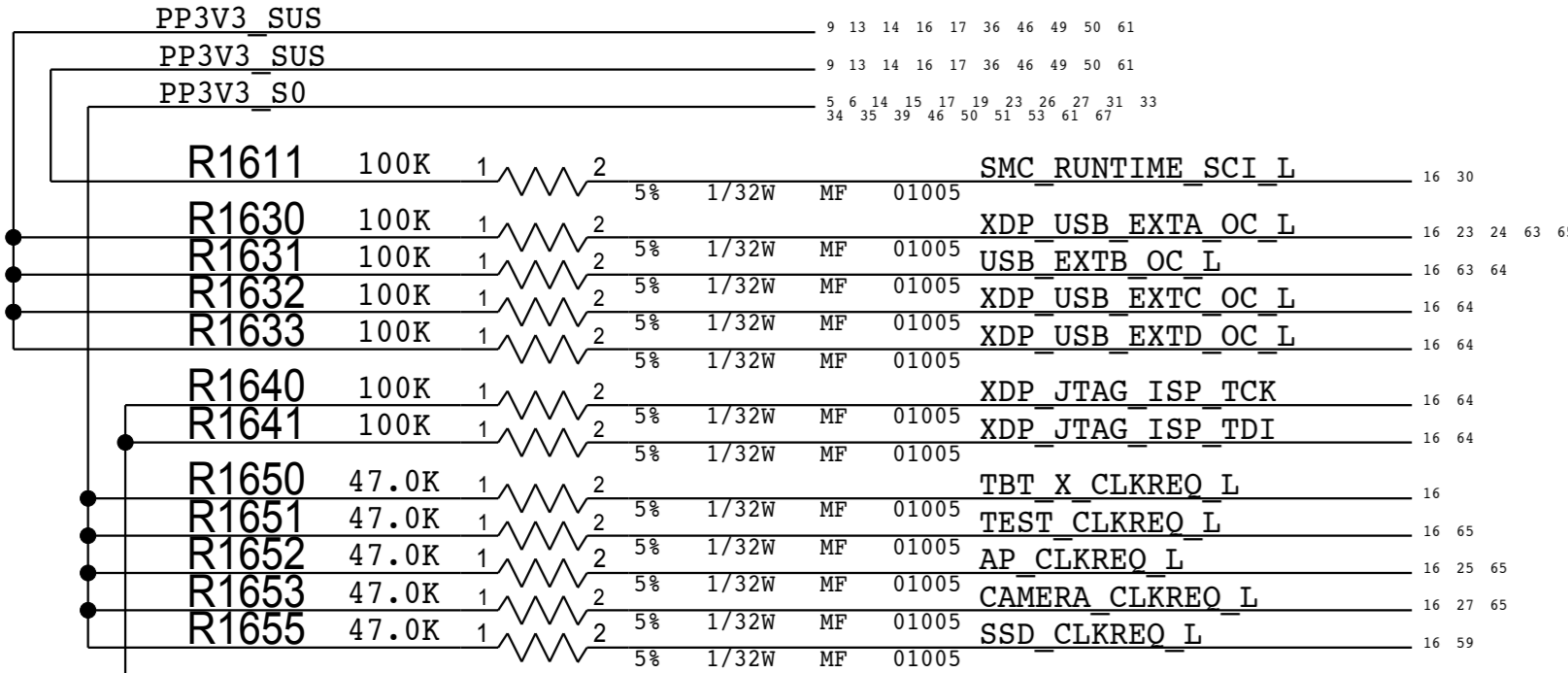
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B

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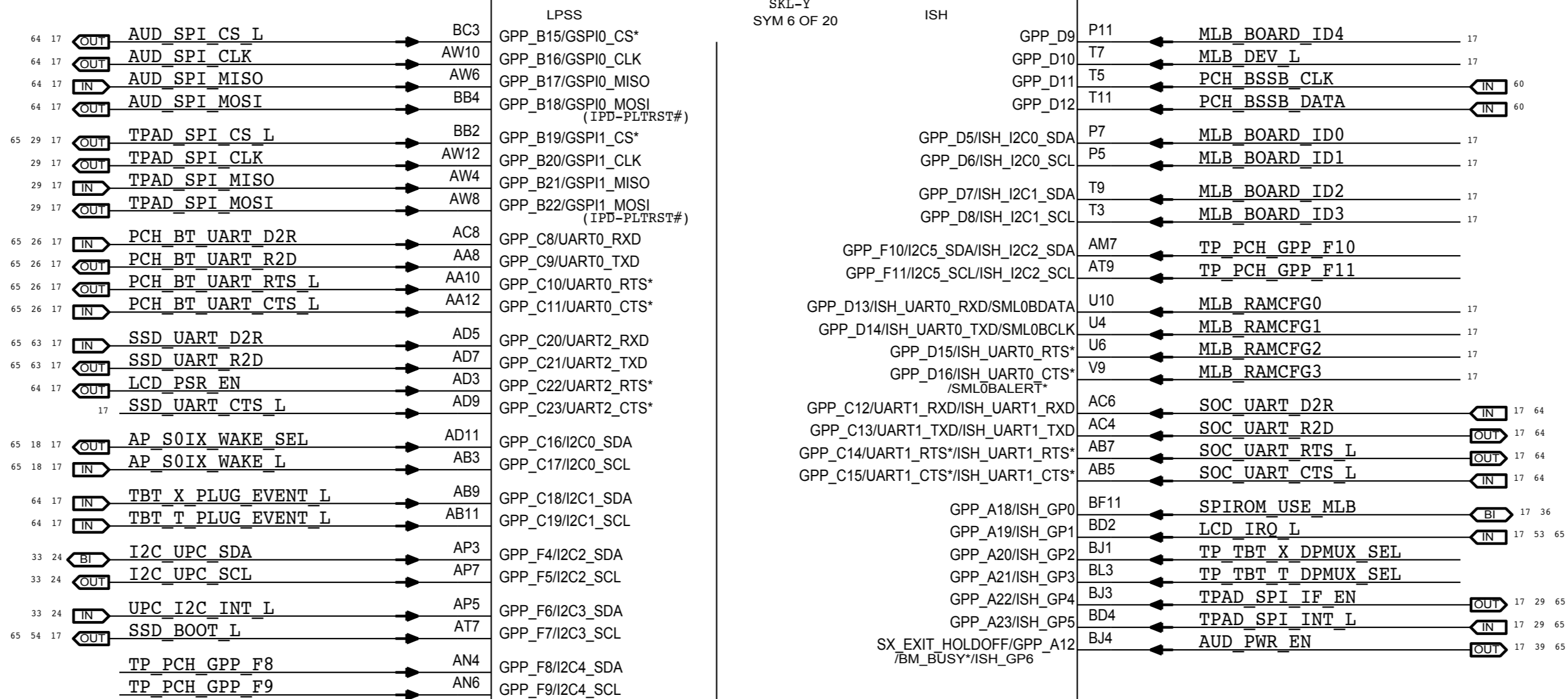


Apple Inc. PCH PCIe/USB/CLK drawing header with revision and sheet information.

CRITICAL OMIT\_TABLE

U0500

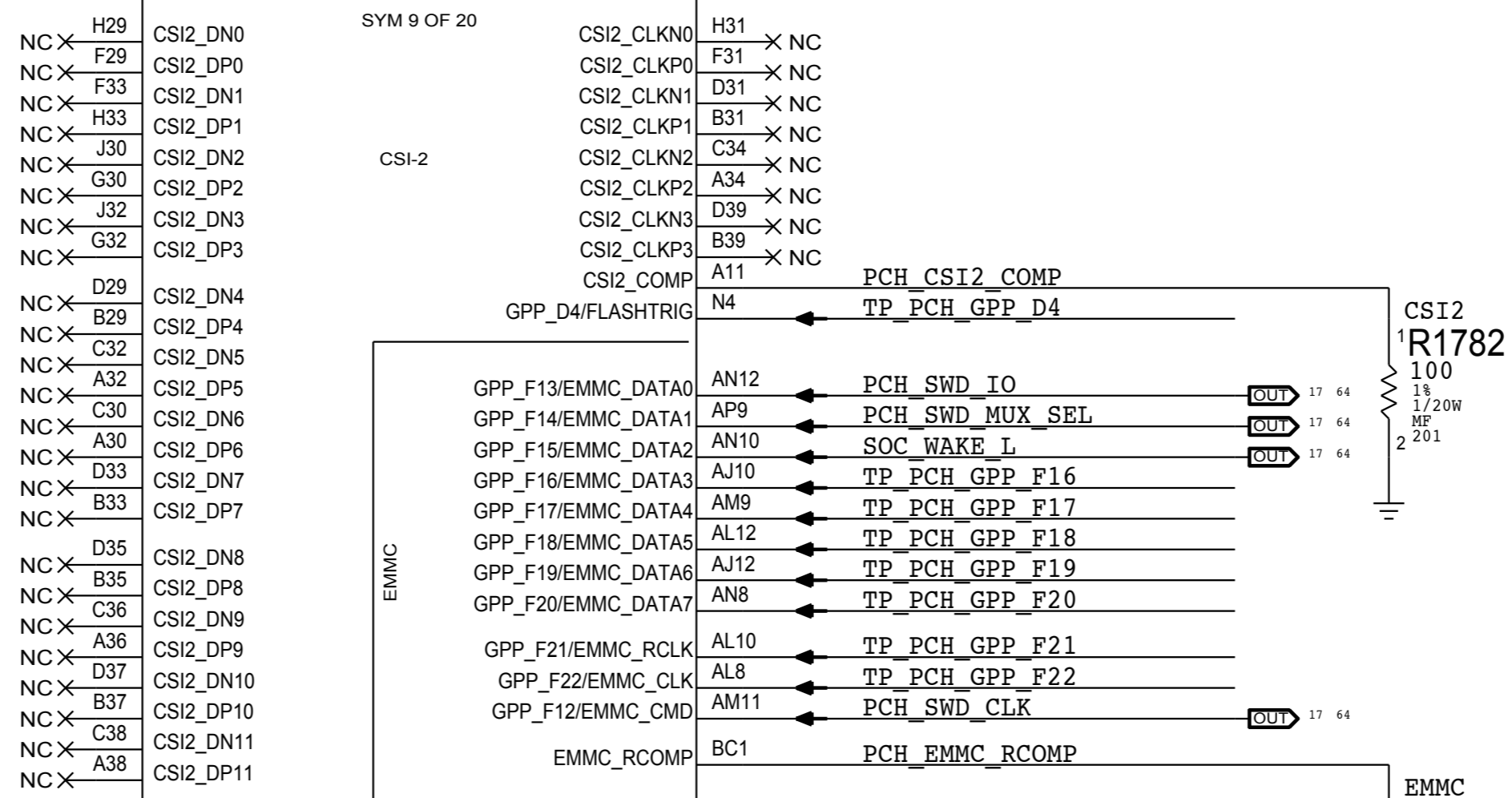
SKL-Y-ULX  
BGA  
SKL-Y  
SYM 6 OF 20



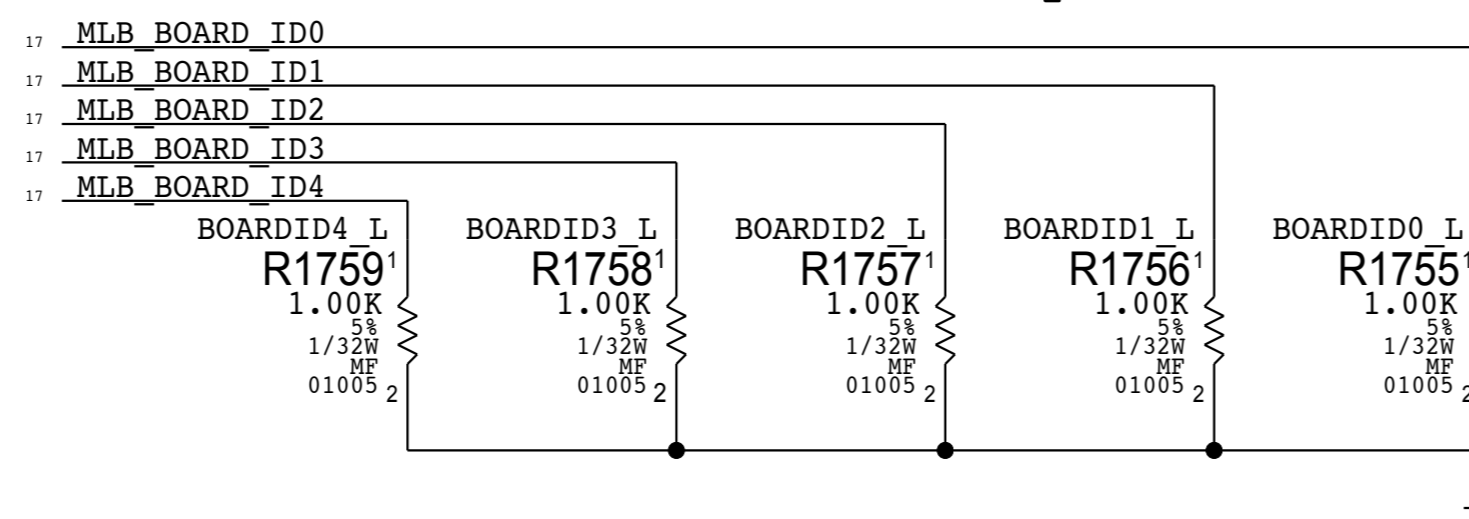
CRITICAL OMIT\_TABLE

U0500

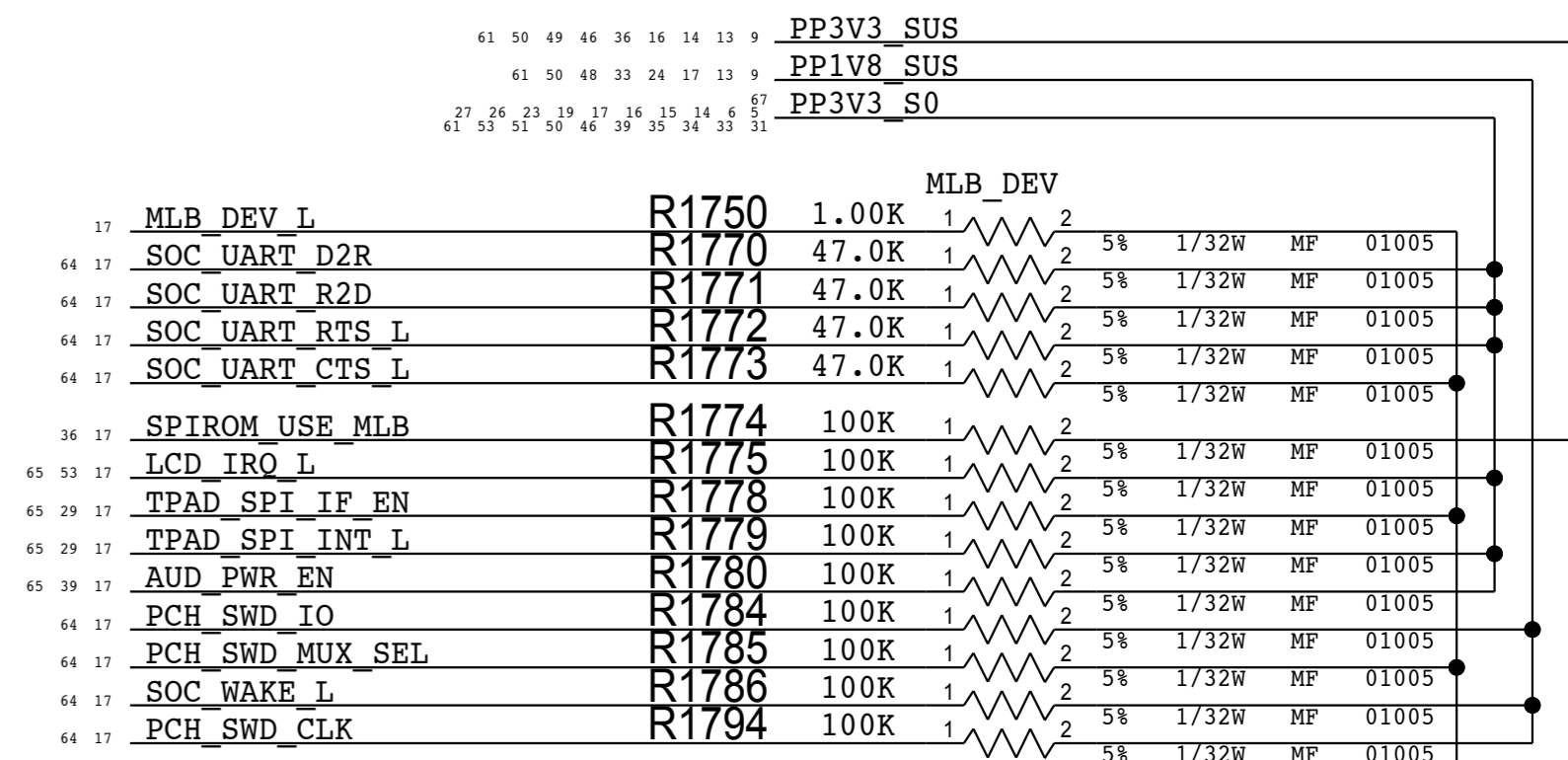
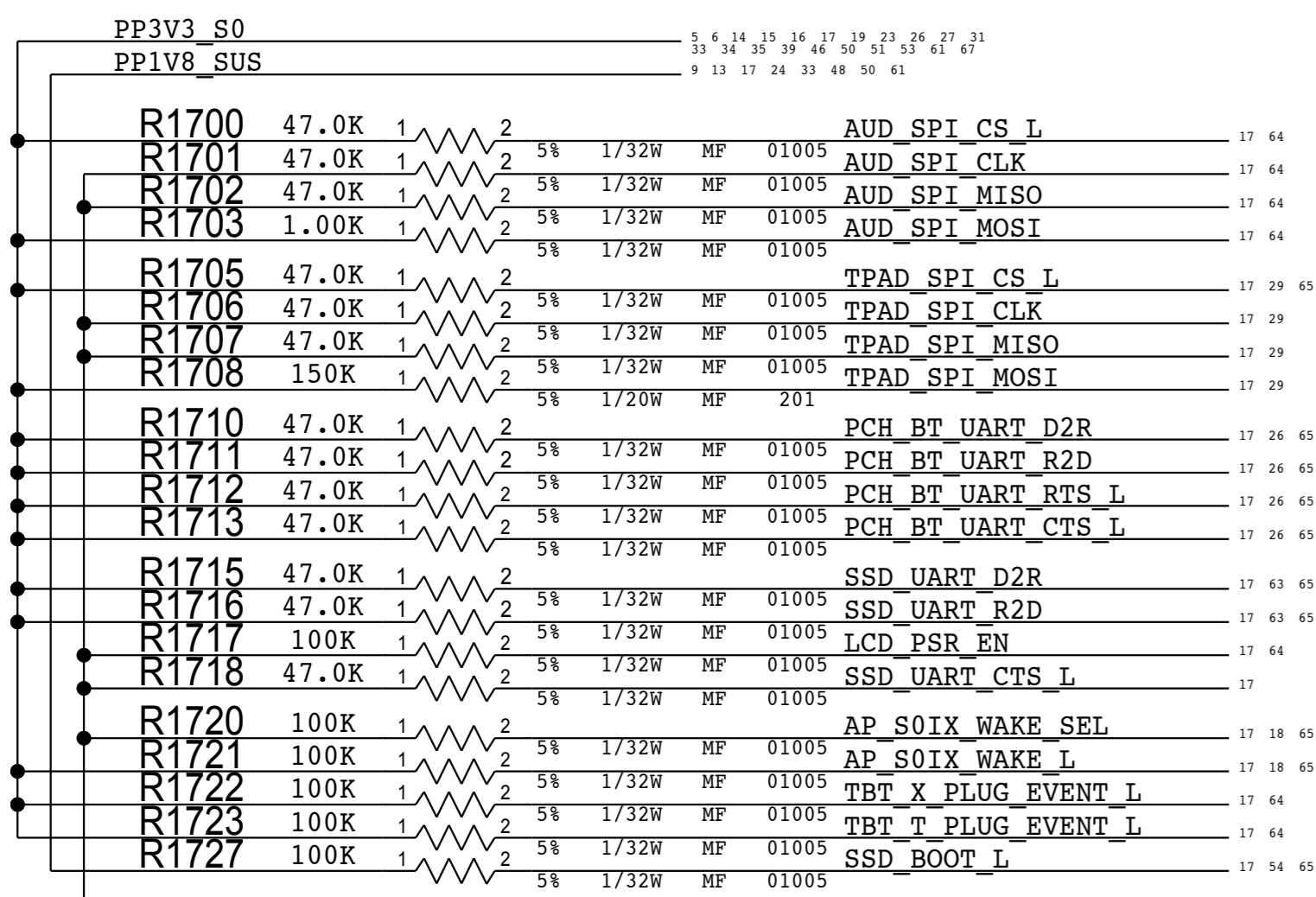
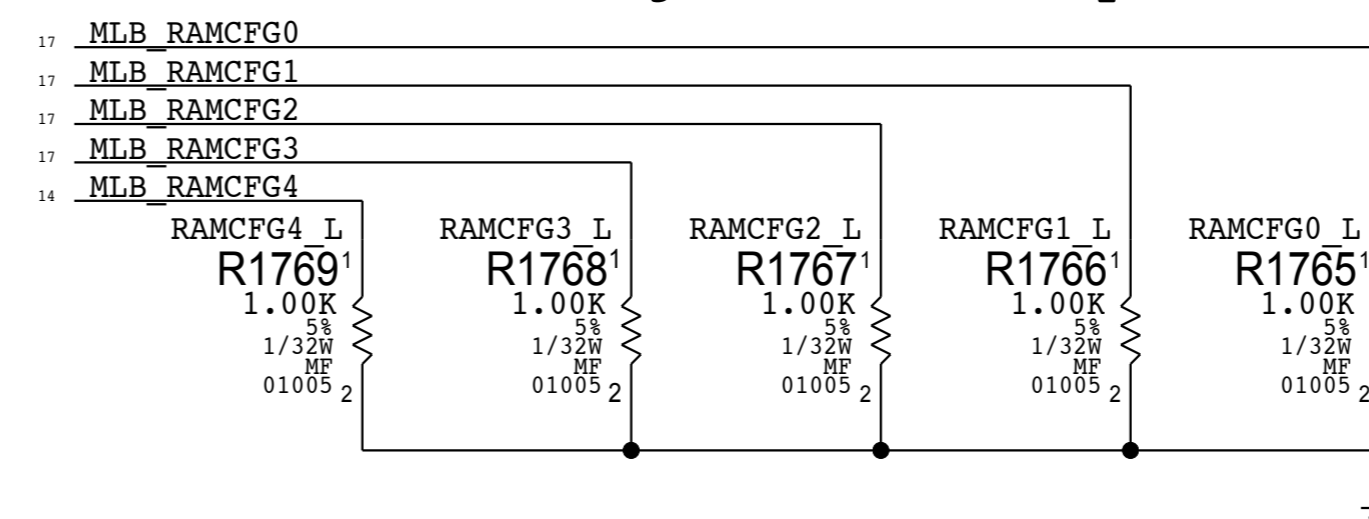
SKL-Y-ULX  
BGA  
SKL-Y  
SYM 9 OF 20



Board ID Straps



RAM Configuration Straps



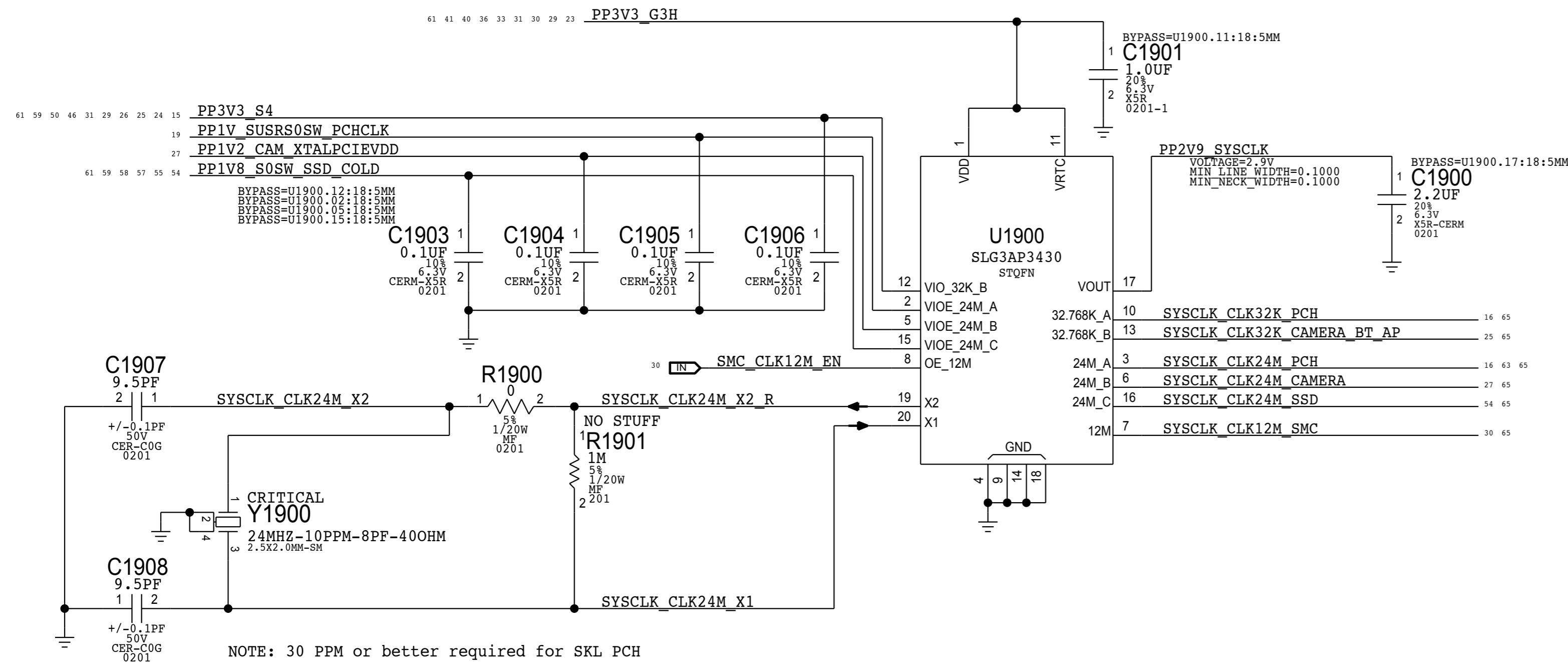
Apple Inc. PCH GPIO/LPSS

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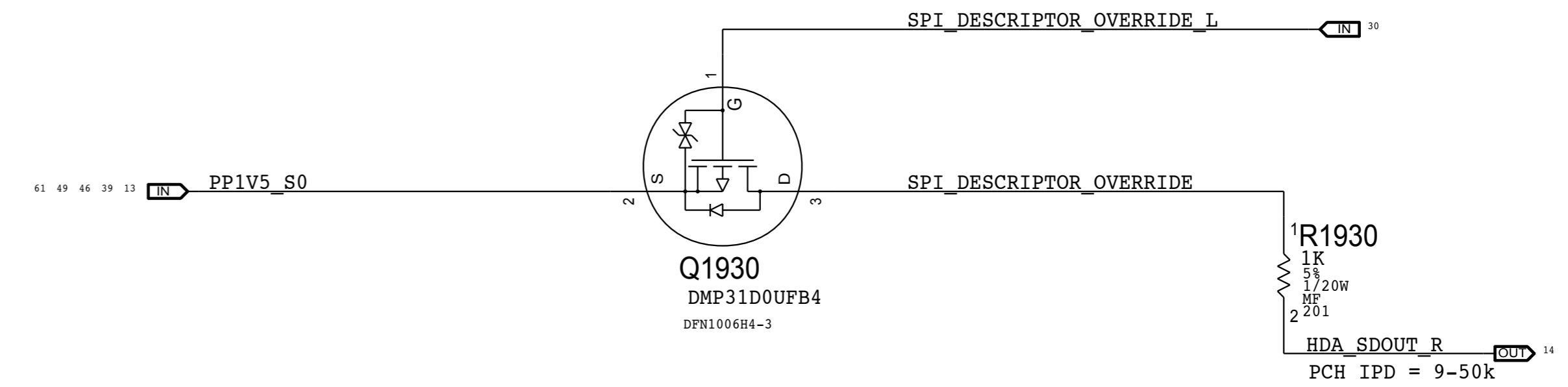
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PAGE: 17 OF 130  
SHEET: 17 OF 67

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### System 32kHz / 12MHz / 24MHz Clock Generator

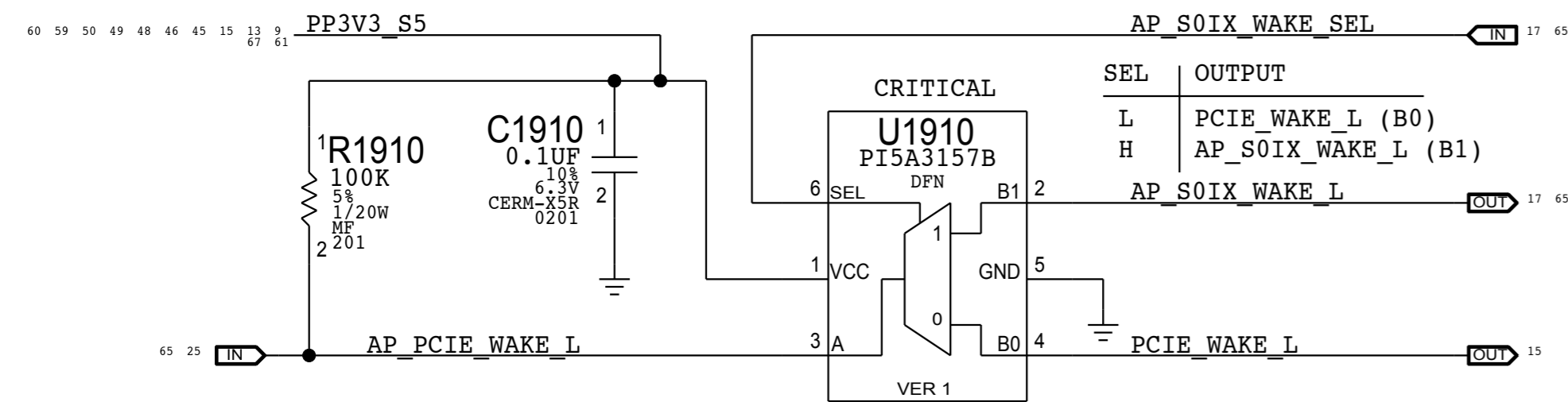


### PCH ME Disable Strap



PCH uses HDA\_SDO as a power-up strap. If low, ME functions normally. If high, ME is disabled. This allows for full re-flashing of SPI ROM. SMC controls strap enable to allow in-field control of strap setting. \*\*\*\*\* Circuit does not support HDA voltage >3.3V.

### PCIe Wake Muxing

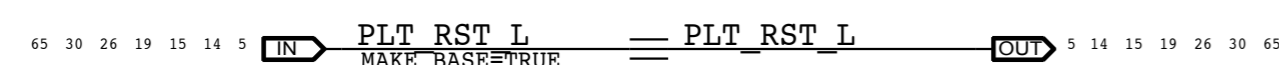


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| PAGE<br>19 OF 130           |  | SHEET<br>18 OF 67  |

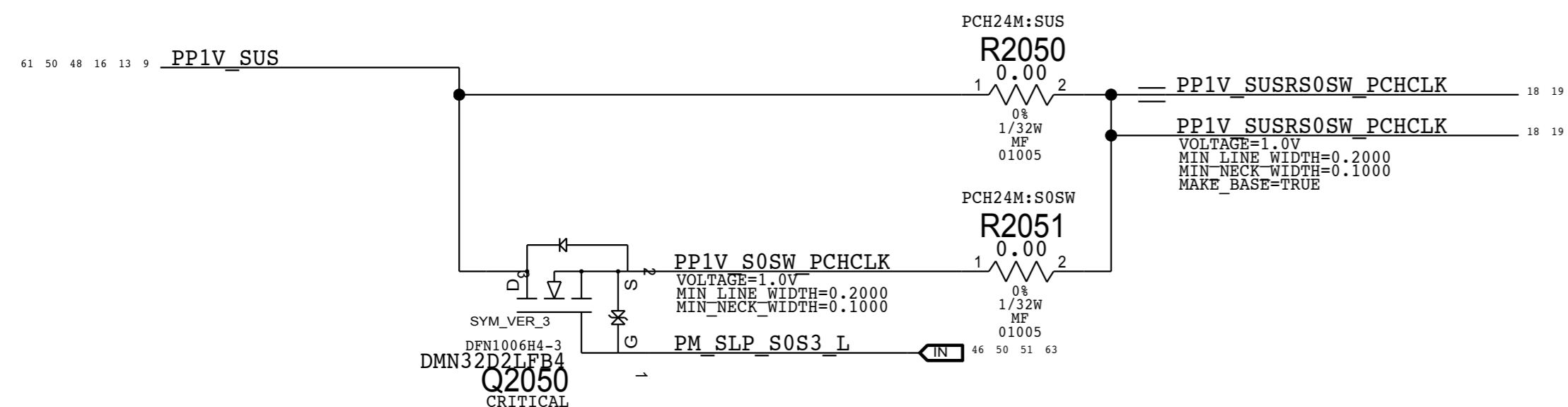


### Platform Reset Connections

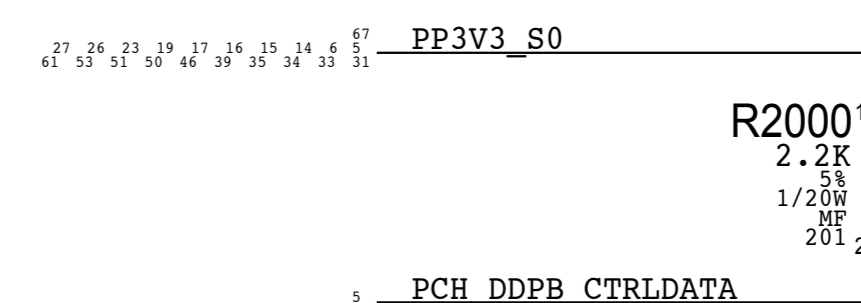
Unbuffered



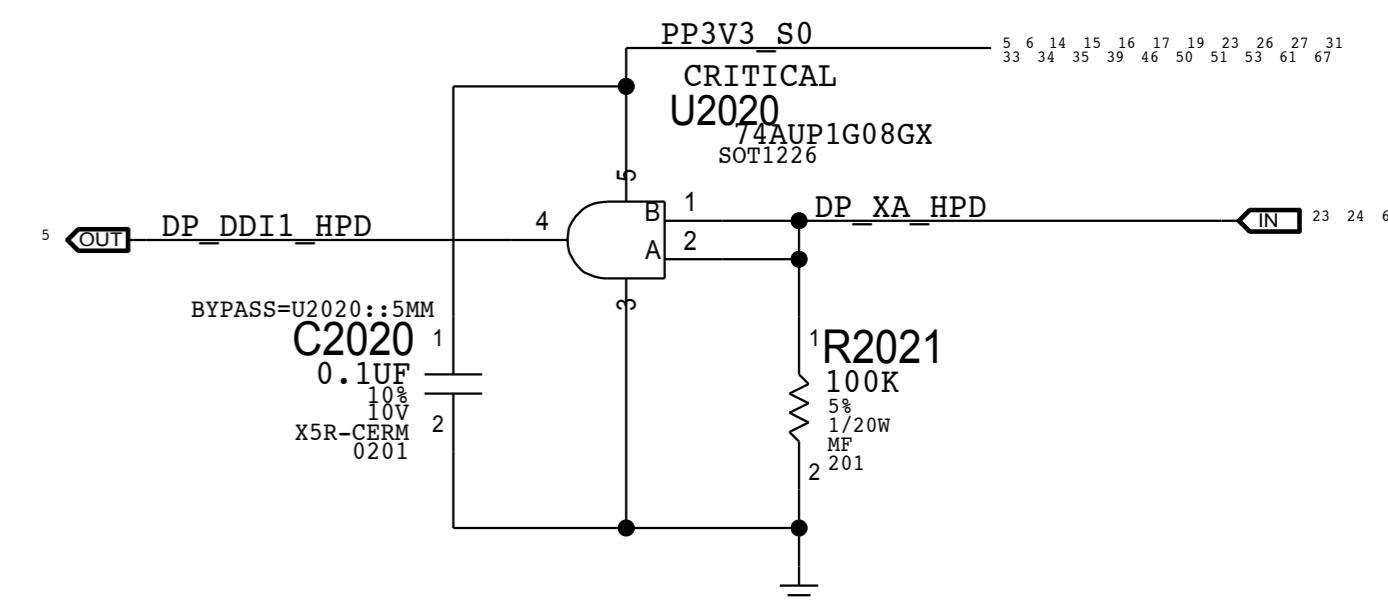
### PCH 24MHz VIOE Options



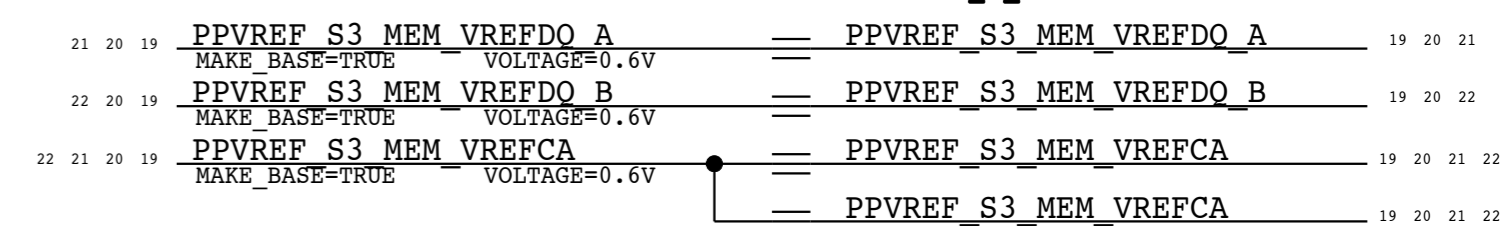
### DP DDP Straps



### HPD S0 Isolation



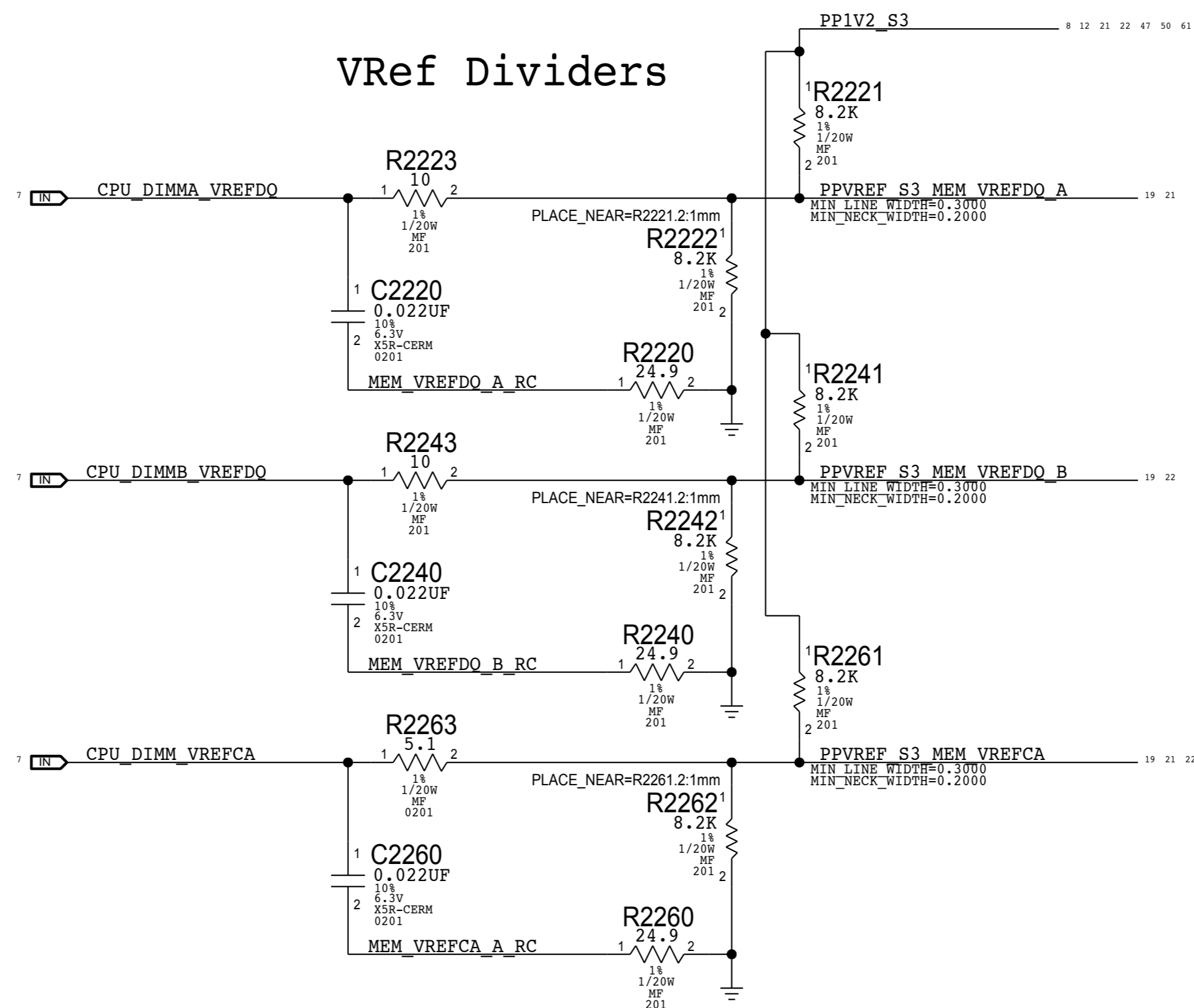
### LPDDR3 Alias Support



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|   |                | PAGE                 | 20 OF 130 |
|   |                | SHEET                | 19 OF 67  |
|   |                |                      |           |

# CPU-Based Margining

## Vref Dividers



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|---|----------------|----------------------|-----------|
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|   |                | PAGE                 | 22 OF 130 |
|   |                | SHEET                | 20 OF 67  |

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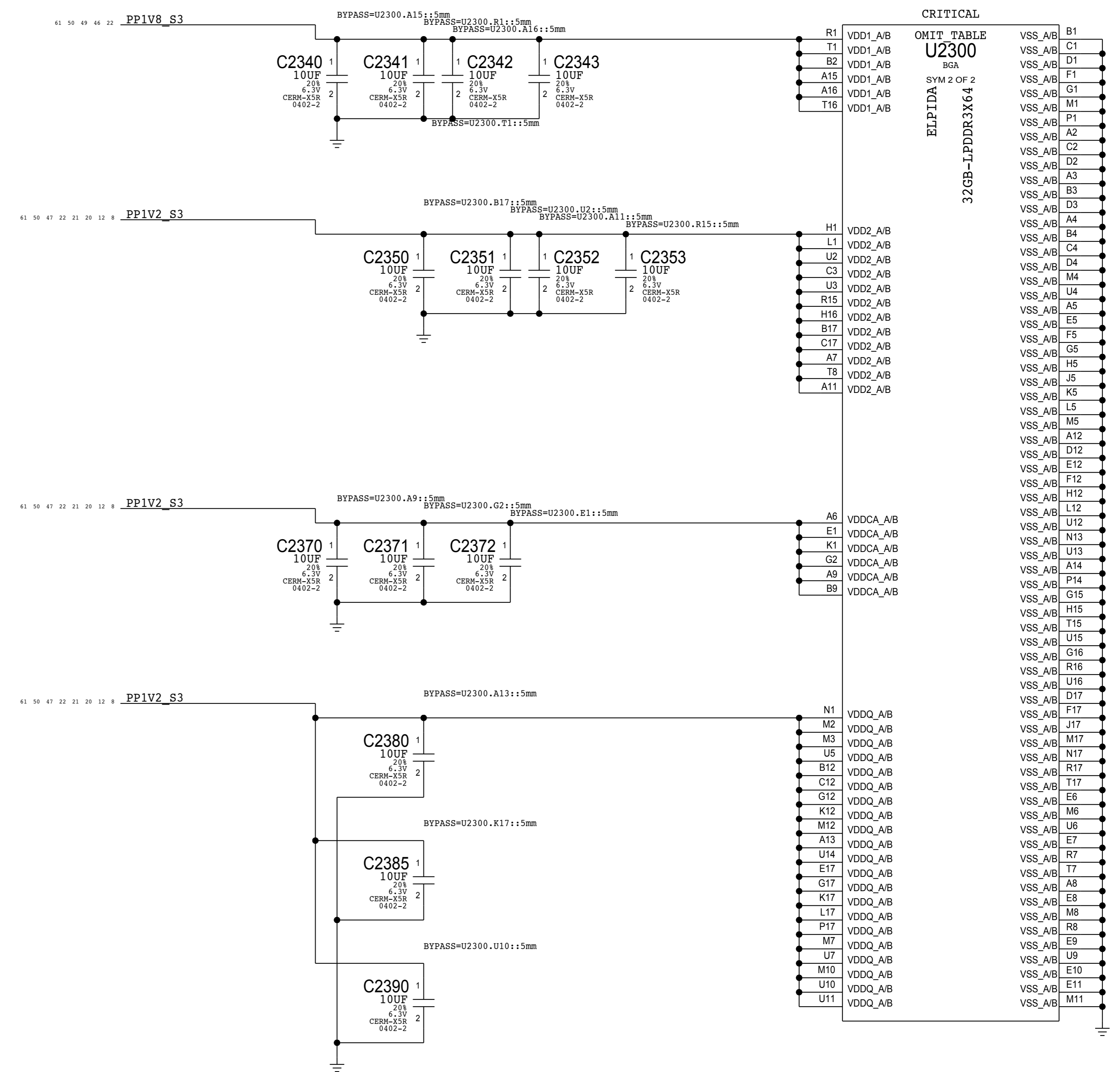
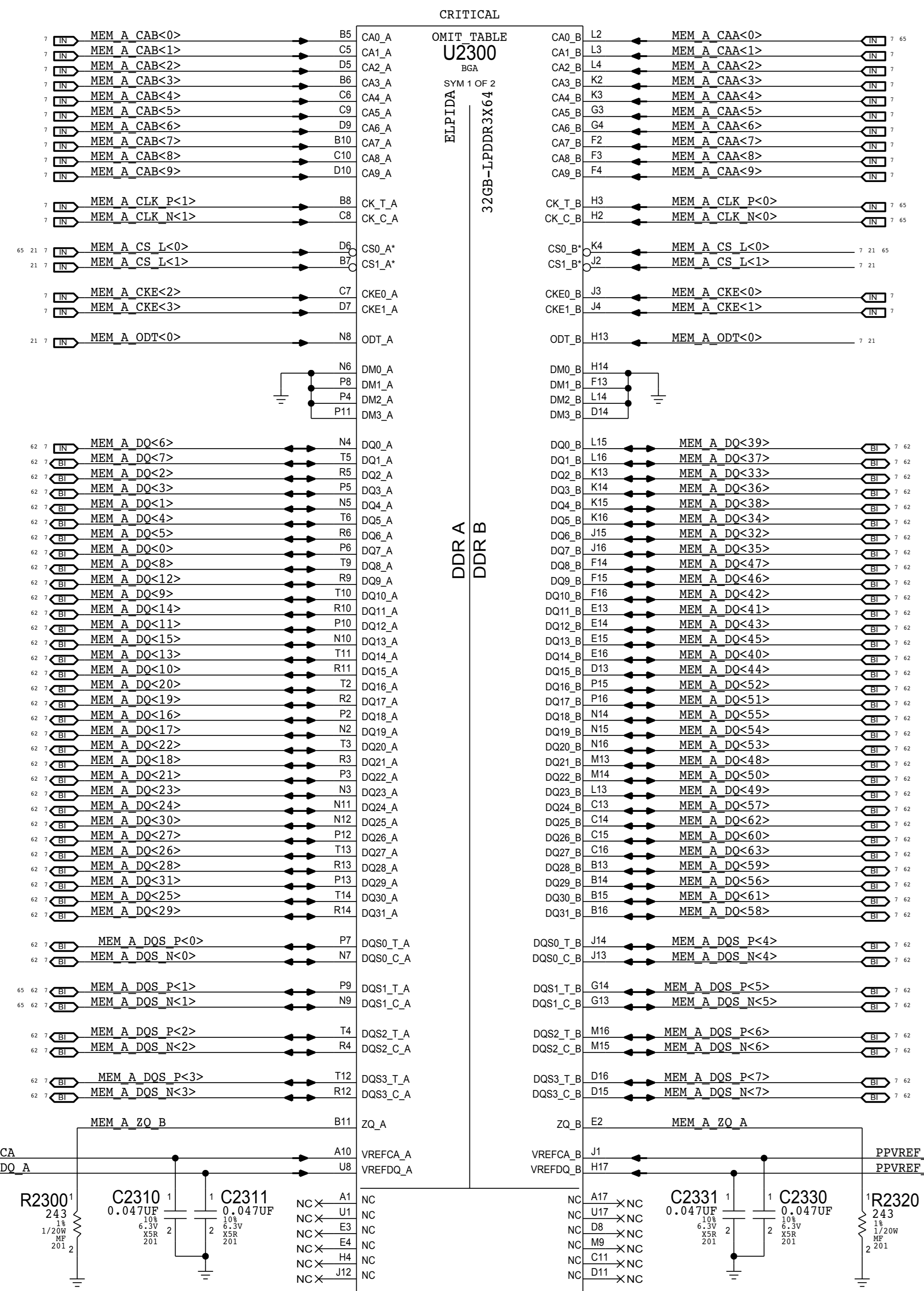
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**LPDDR3 DRAM Channel A (0-63)**

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|   | SHEET          | 23 OF 130 |      |   |
|   |                | 21 OF 67  |      |   |

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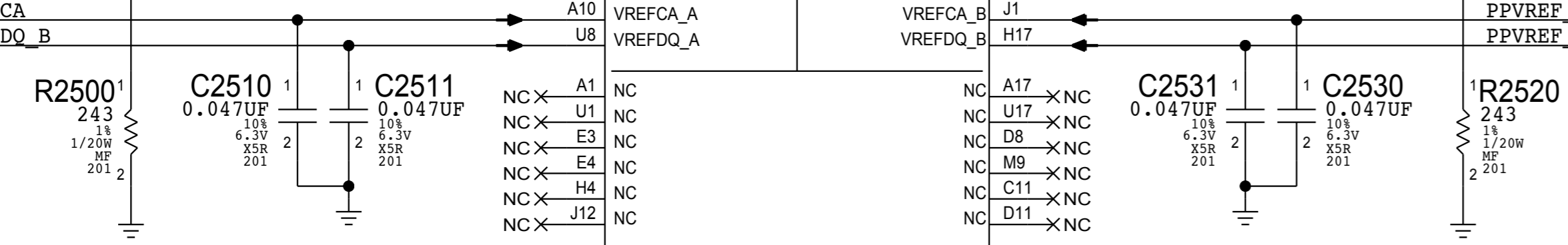
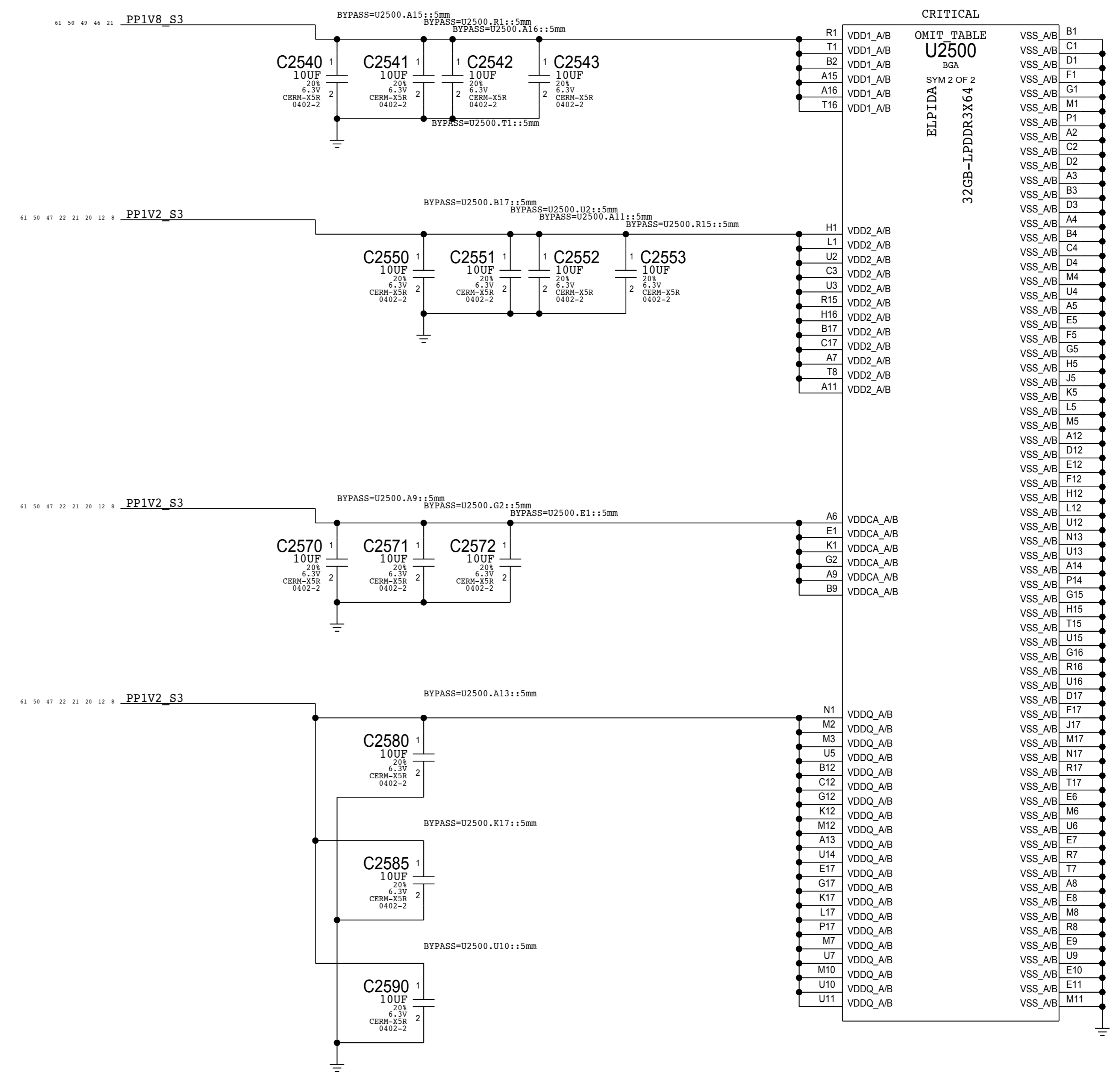
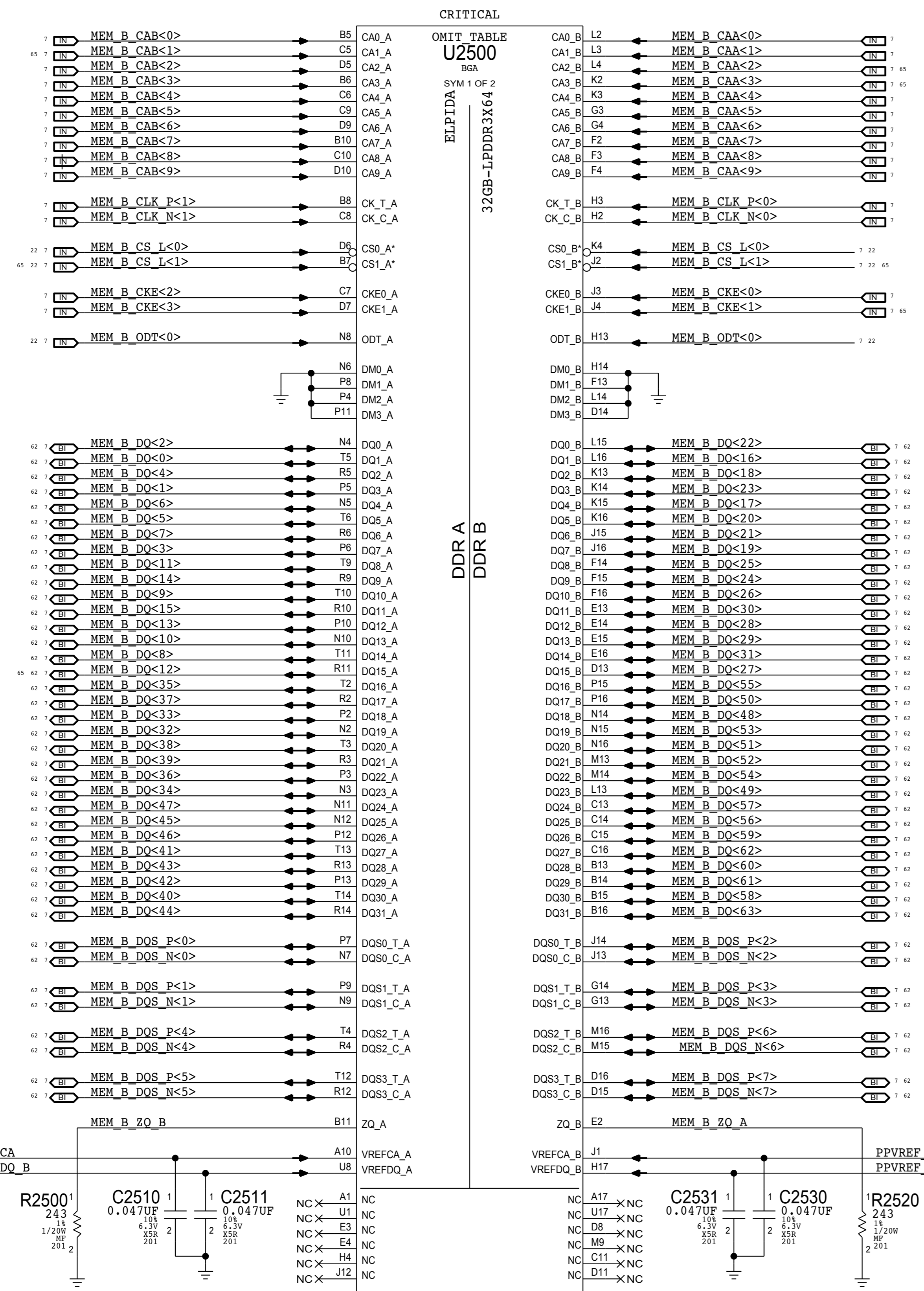
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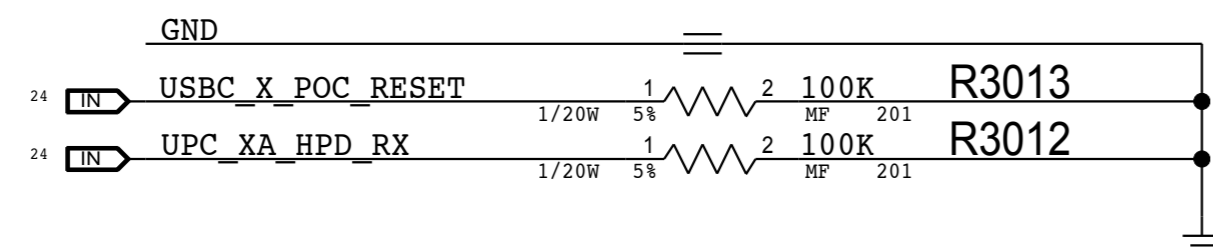


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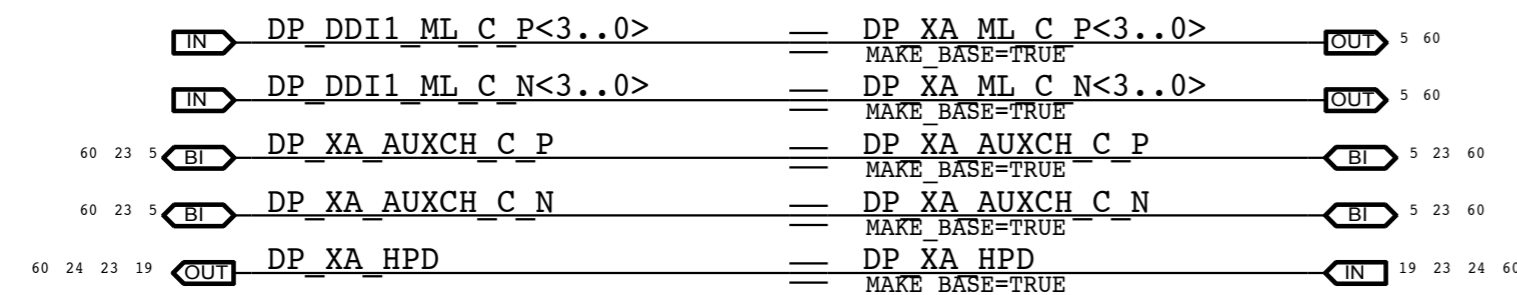
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22 OF 67

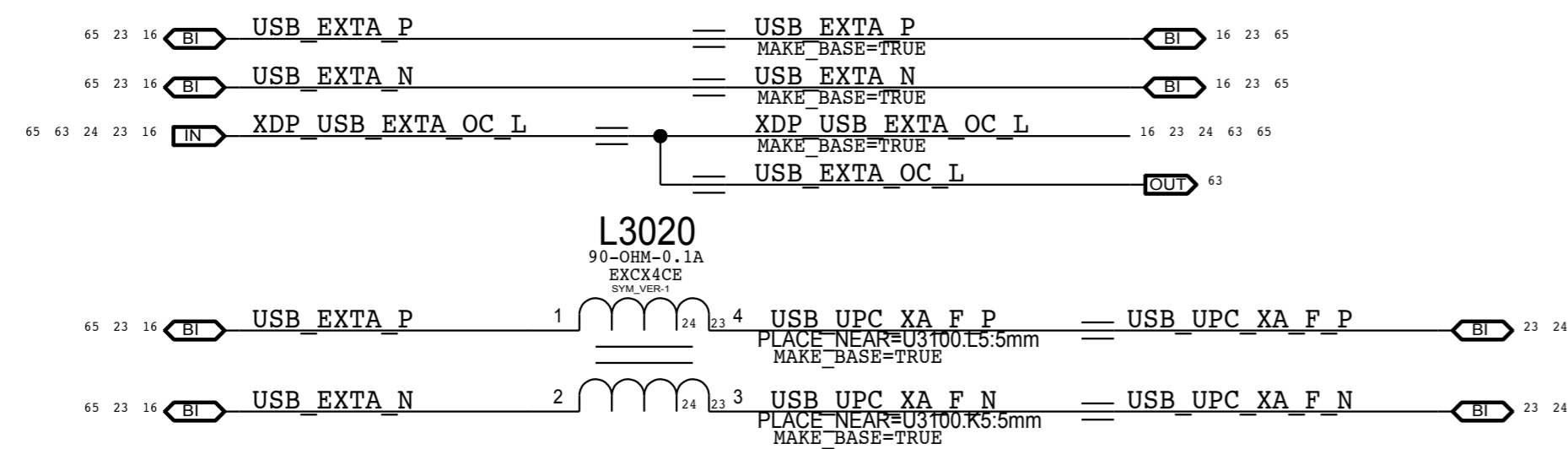
### 'Ridge-less Support



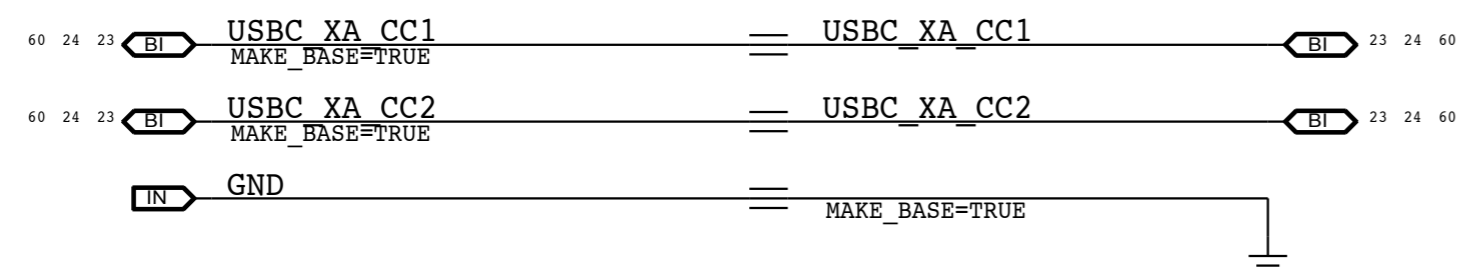
### DP Support



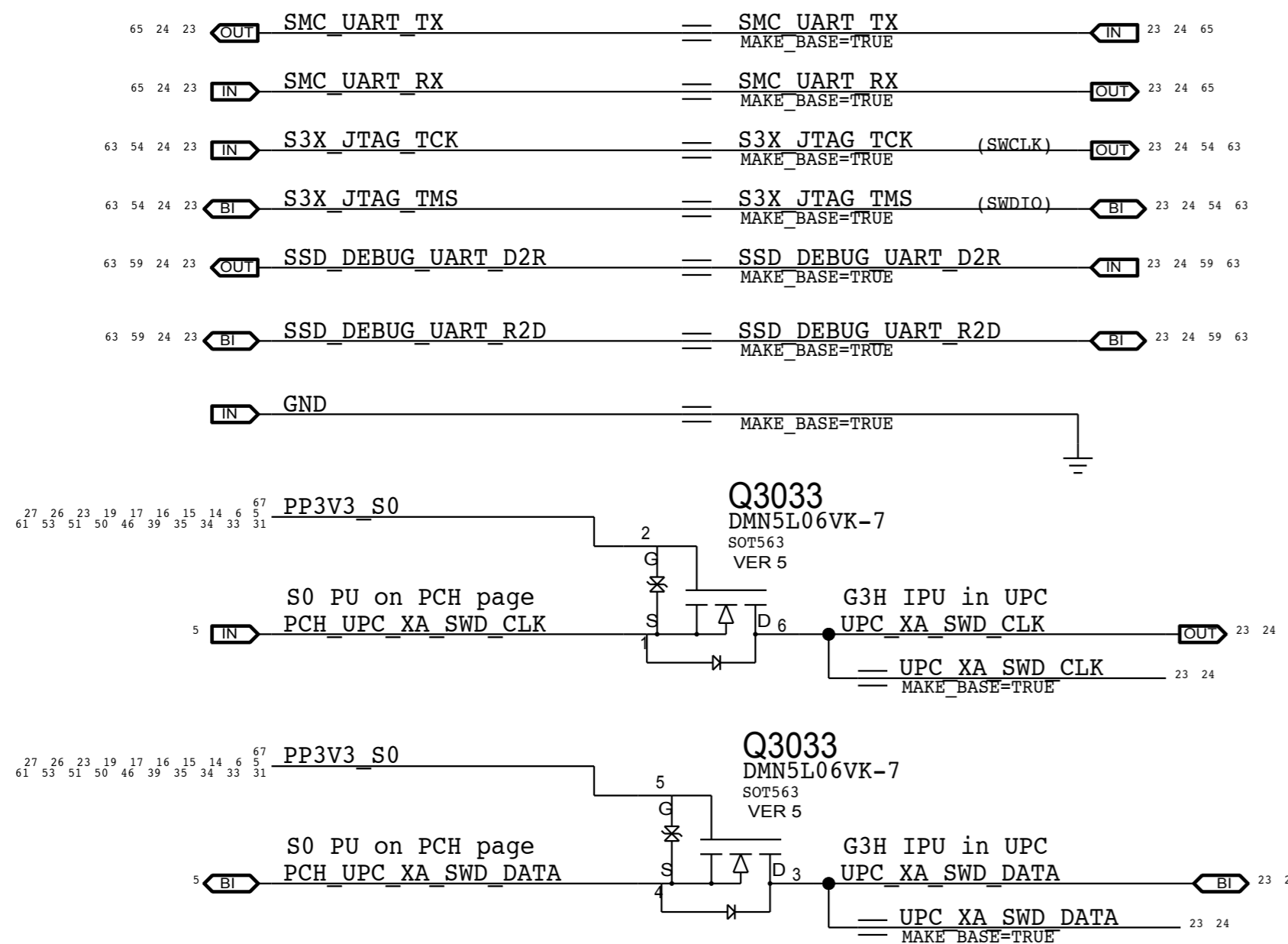
### USB Support



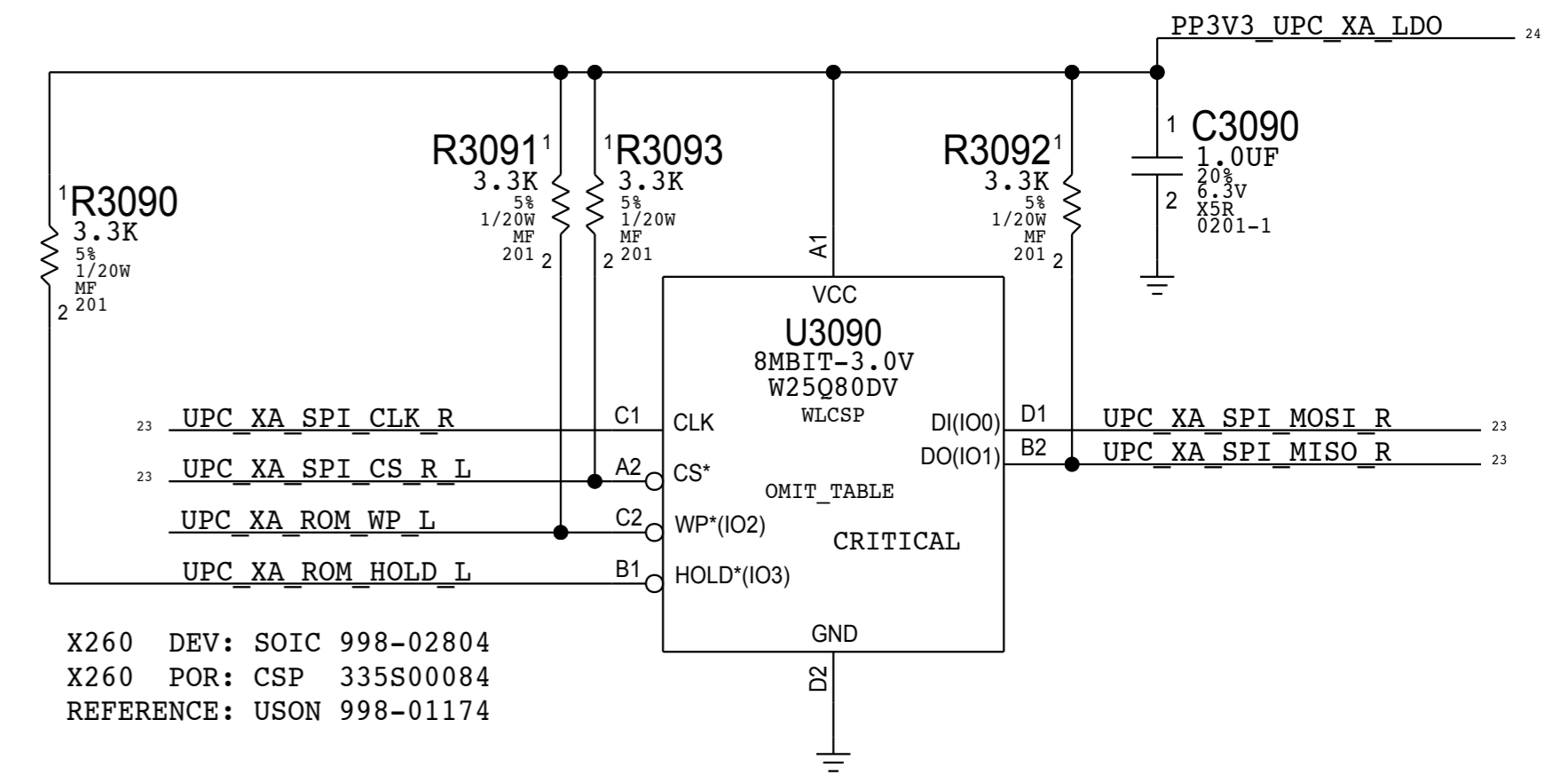
### Dead Battery Support



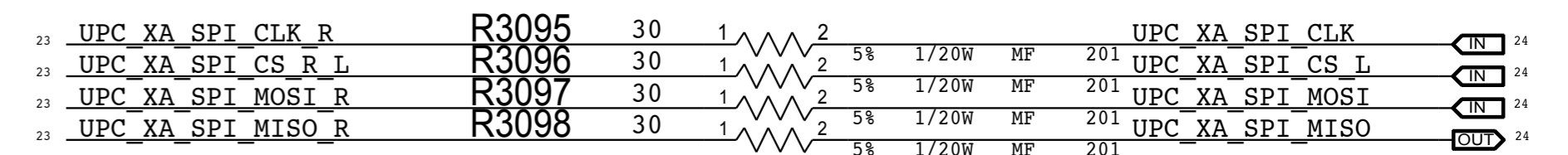
### Debug Support



### Port Controller ROM

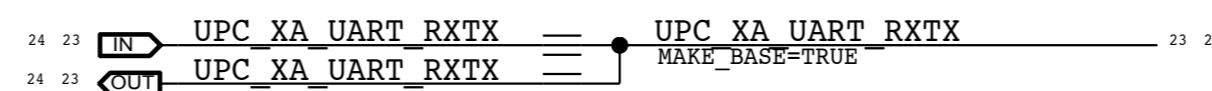


X260 DEV: SOIC 998-02804  
 X260 POR: CSP 335S00084  
 REFERENCE: USON 998-01174

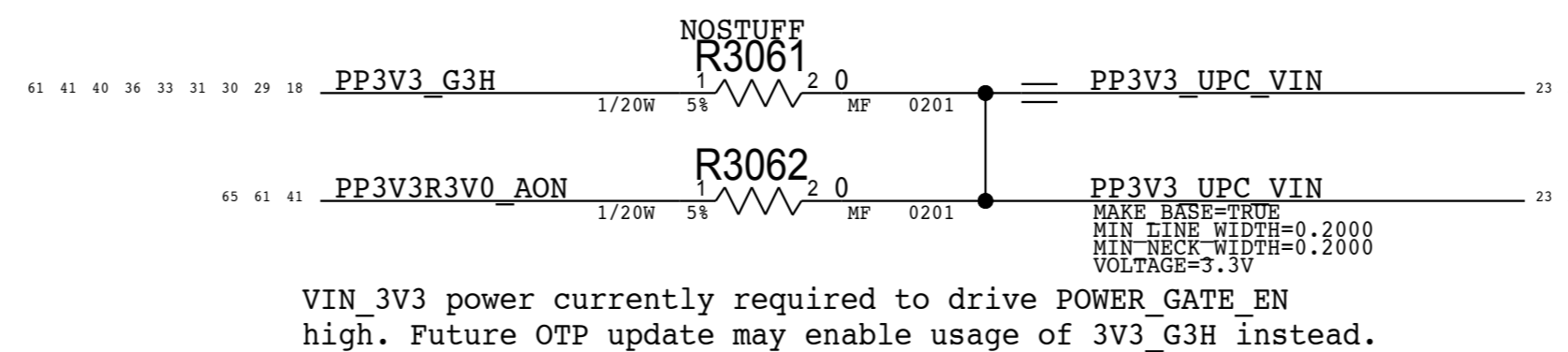


Place series R at T with dev debug header  
 Characterize series R on P0 Dev, hopefully remove for P0 POR

### Single Port Support

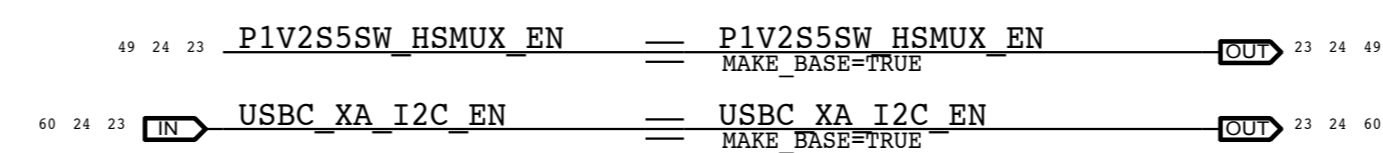


### Bring Up Support

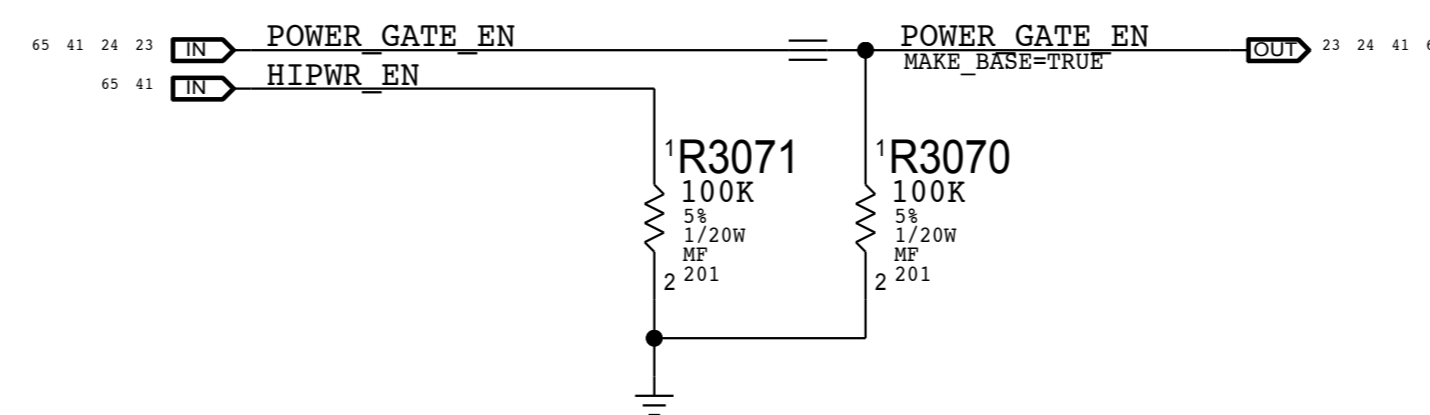


VIN\_3V3 power currently required to drive POWER\_GATE\_EN high. Future OTP update may enable usage of 3V3\_G3H instead.

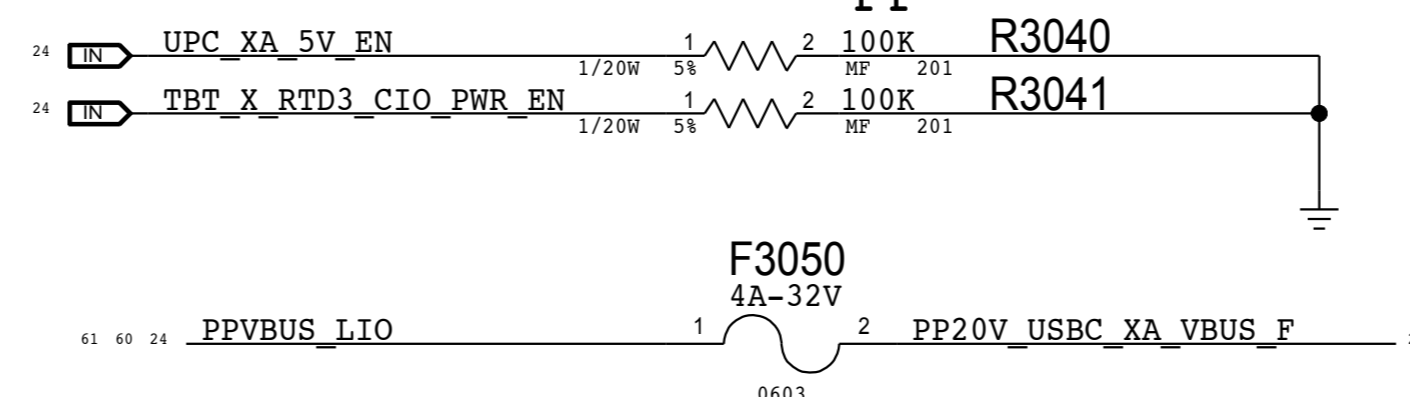
### High Speed Mux Support



### Bansuri Support



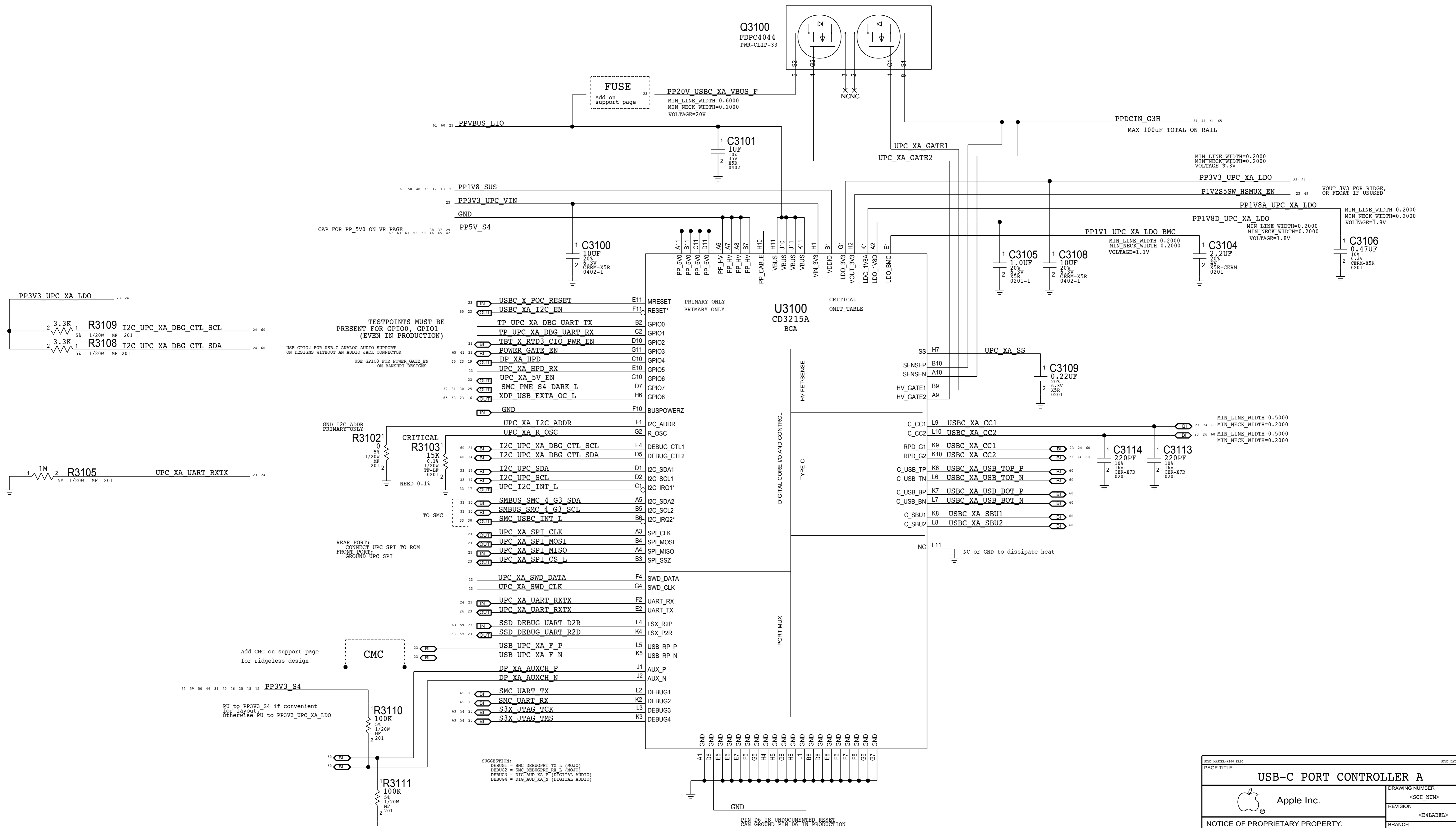
### Other Support



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|   |  | SHEET                | 23 OF 67  |

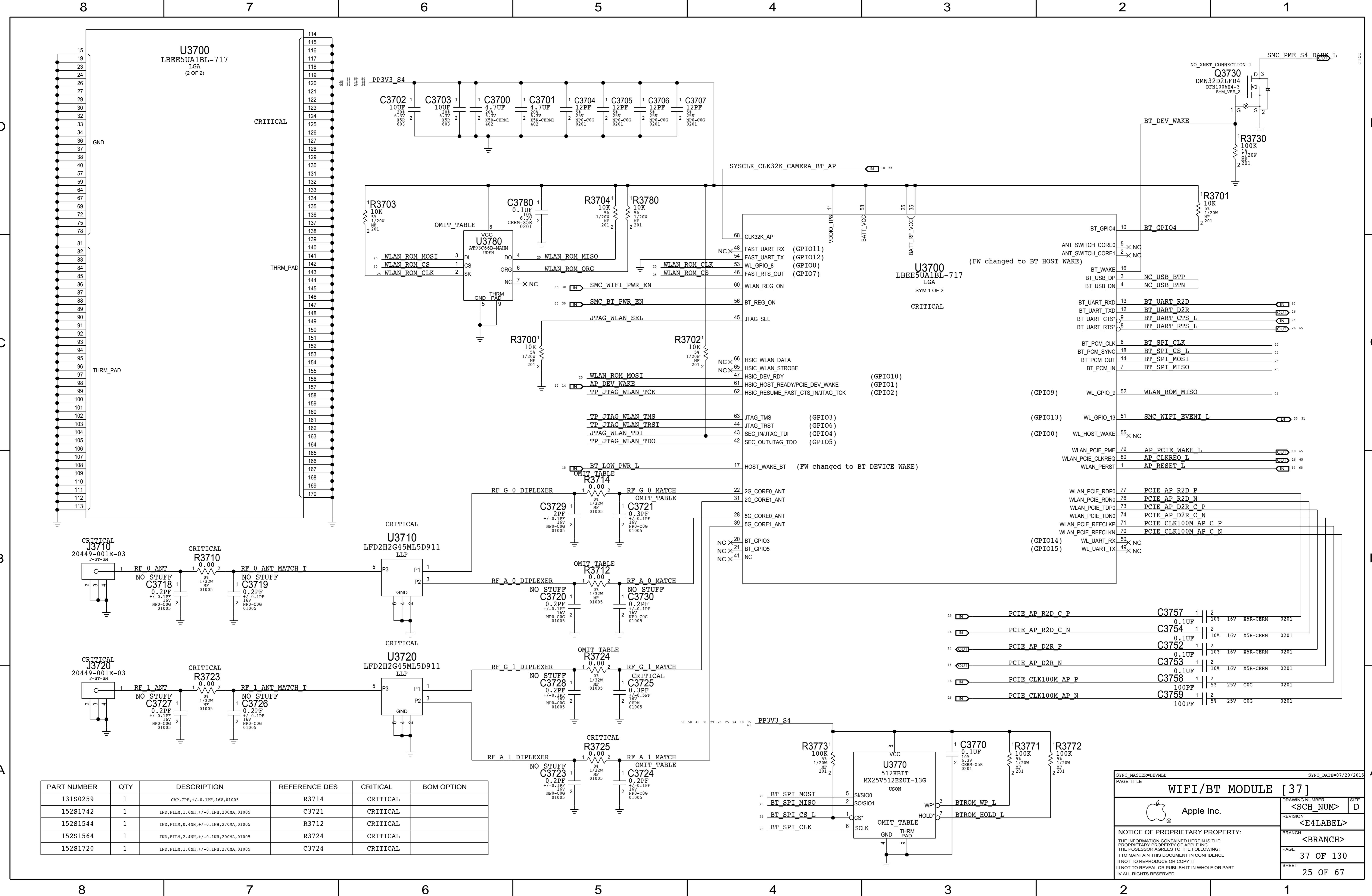


# PRIMARY ACE USB-C PORT CONTROLLER (UPC)



BOM\_COST\_GROUP=USB-C

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|  |          | PAGE                 | 31 OF 130  |
| SHEET  | 24 OF 67 |                      |            |



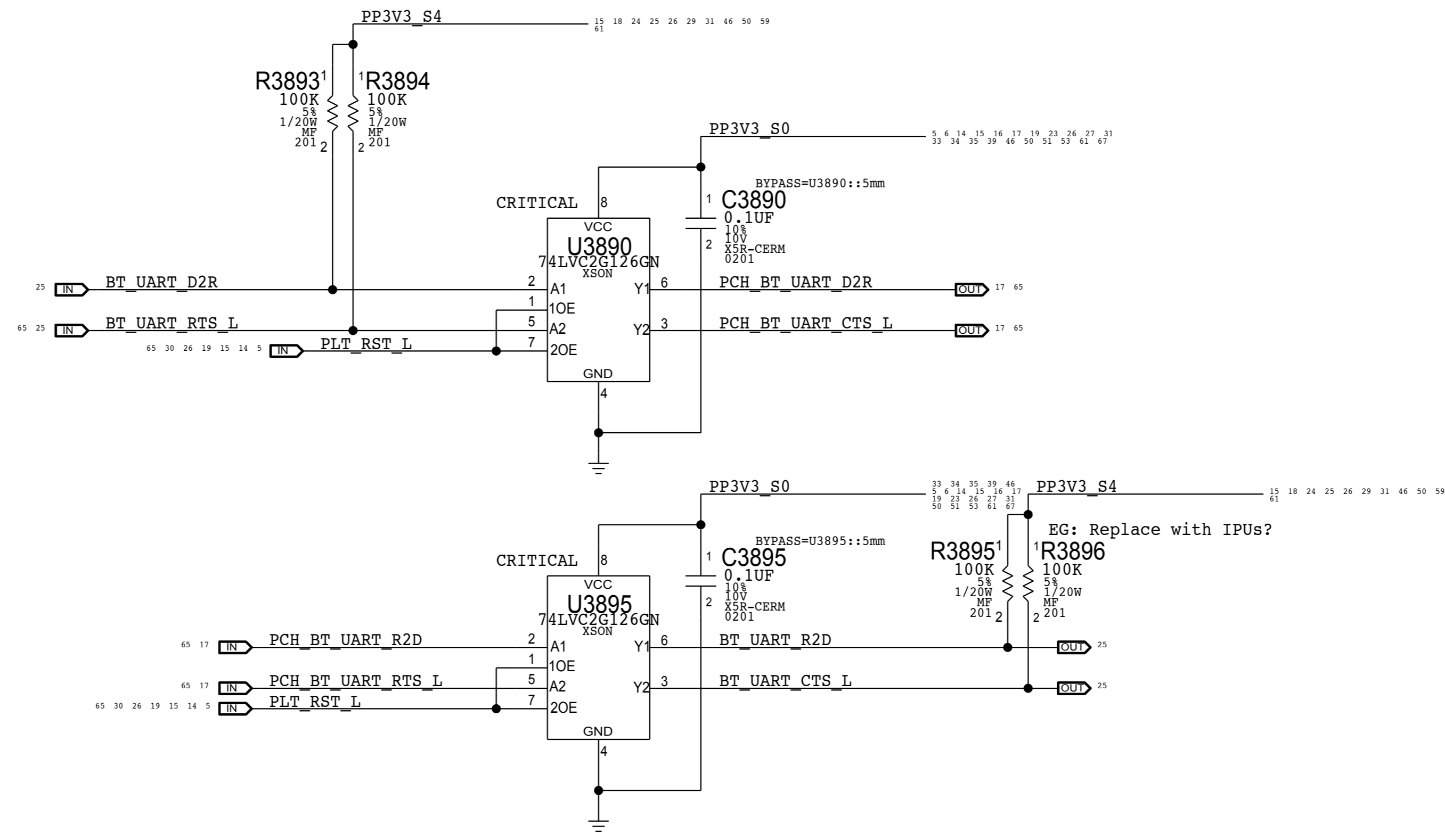
| PART NUMBER | QTY | DESCRIPTION                              | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|--|---------------|----------|------------|
| 131S0259    | 1   | CAP, 7PF, +/-0.1PF, 16V, 01005           | R3714         | CRITICAL |            |
| 152S1742    | 1   | IND, FILM, 1.6NH, +/-0.1NH, 200MA, 01005 | C3721         | CRITICAL |            |
| 152S1544    | 1   | IND, FILM, 0.4NH, +/-0.1NH, 270MA, 01005 | R3712         | CRITICAL |            |
| 152S1564    | 1   | IND, FILM, 2.4NH, +/-0.1NH, 200MA, 01005 | R3724         | CRITICAL |            |
| 152S1720    | 1   | IND, FILM, 1.8NH, +/-0.1NH, 270MA, 01005 | C3724         | CRITICAL |            |

SYNC\_MASTER=DEVMLB  
 SYNC\_DATE=07/20/2015  
 PAGE TITLE: **WIFI/BT MODULE [37]**

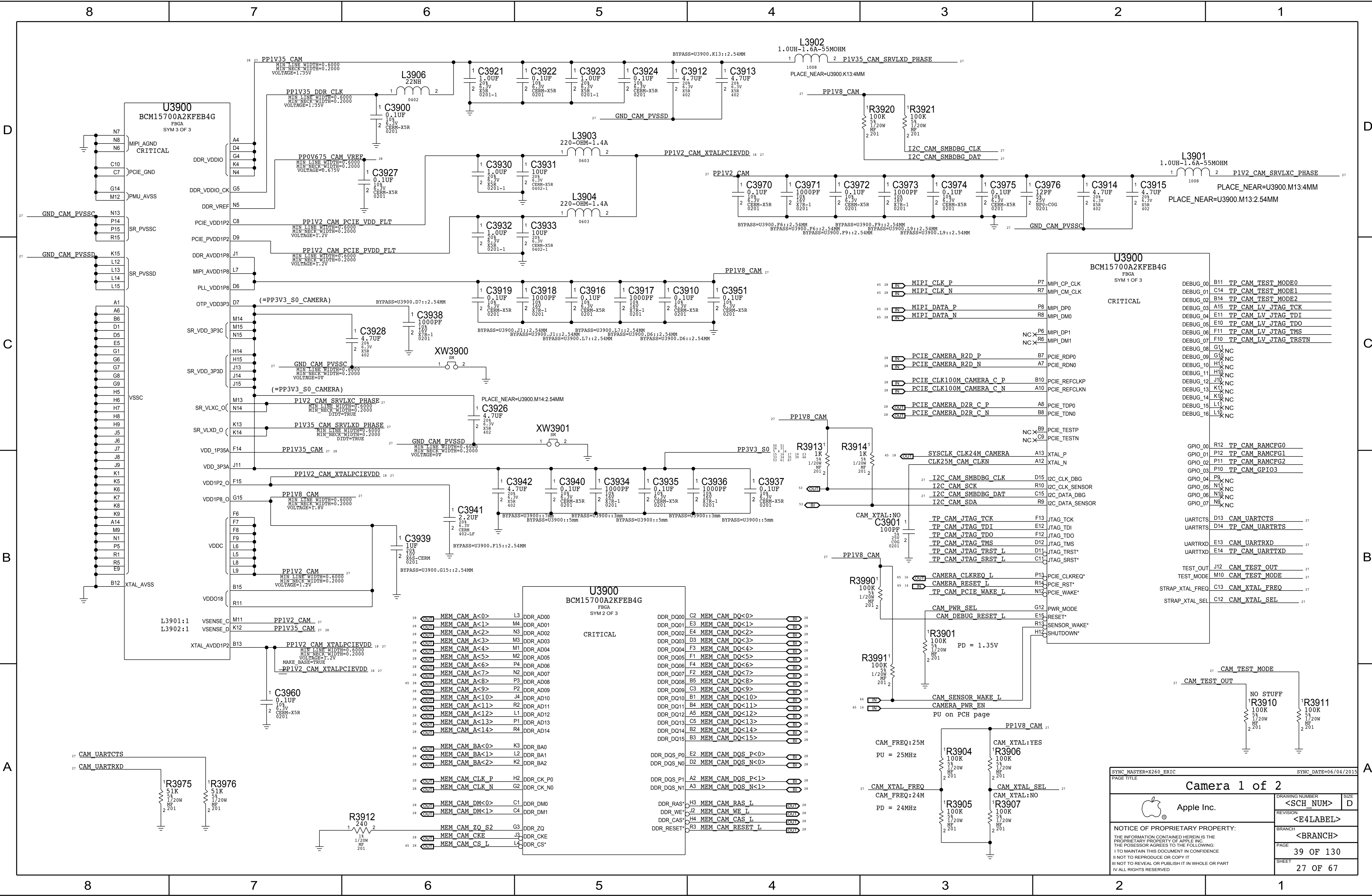
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| PAGE<br><b>37 OF 130</b>           |  | SHEET<br><b>25 OF 67</b>        |

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# BT UART Isolation



|   |                |                      |           |
|---|----------------|----------------------|-----------|
| SYNC_MASTER=J92_DEVMLB  |                | SYNC_DATE=05/13/2015 |           |
| PAGE TITLE  |                |                      |           |
| <b>WIFI/BT Support</b>  |                |                      |           |
|   | DRAWING NUMBER | SIZE                 |           |
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|   |                | 38 OF 130            |           |
| SHEET   |                | 26 OF 67             |           |



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| Apple Inc.  |  | DRAWING NUMBER                            | SIZE |
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|   |  | 27 OF 67                                  |      |

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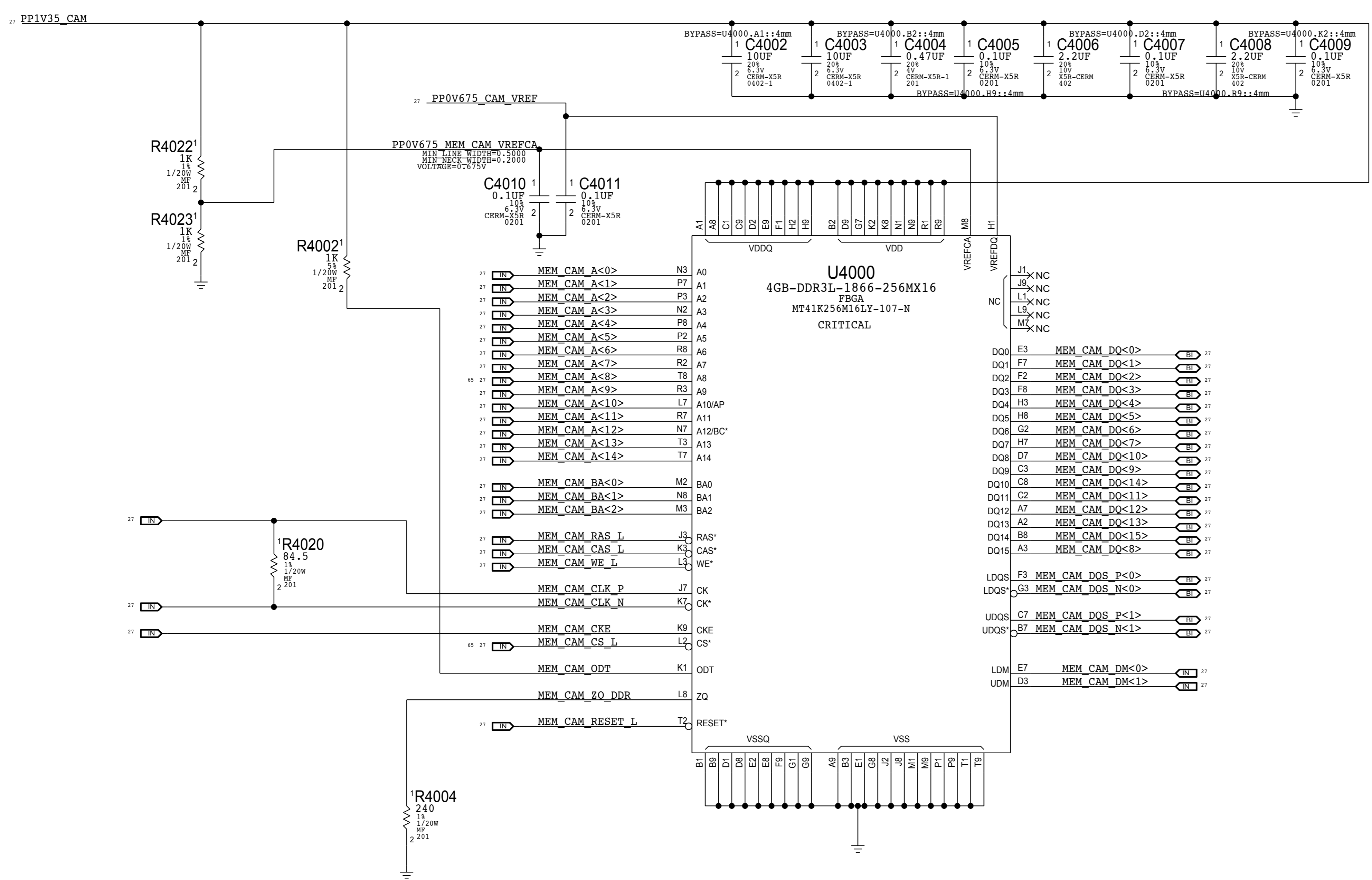
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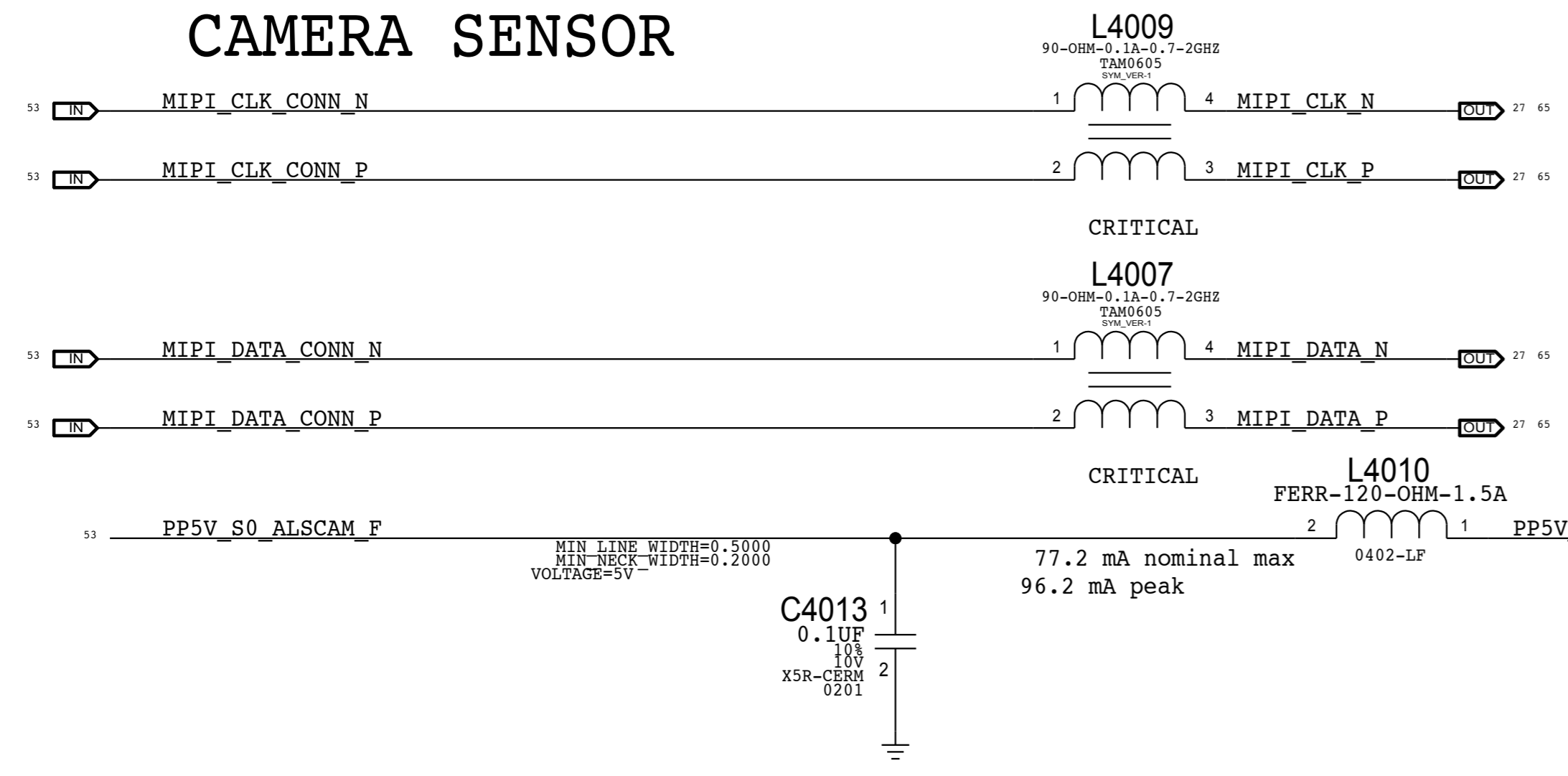
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|    |                       |       |   |   |                         |       |
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| IN | PCIE_CAMERA_R2D_C_N   | C4032 | 1 | 2 | PCIE_CAMERA_R2D_N       | 27    |
| IN | PCIE_CAMERA_D2R_C_P   | C4031 | 1 | 2 | PCIE_CAMERA_D2R_P       | 16 65 |
| IN | PCIE_CAMERA_D2R_C_N   | C4030 | 1 | 2 | PCIE_CAMERA_D2R_N       | 16 65 |
| IN | PCIE_CLK100M_CAMERA_P | C4061 | 1 | 2 | PCIE_CLK100M_CAMERA_C_P | 27    |
| IN | PCIE_CLK100M_CAMERA_N | C4062 | 1 | 2 | PCIE_CLK100M_CAMERA_C_N | 27    |

### CAMERA SENSOR

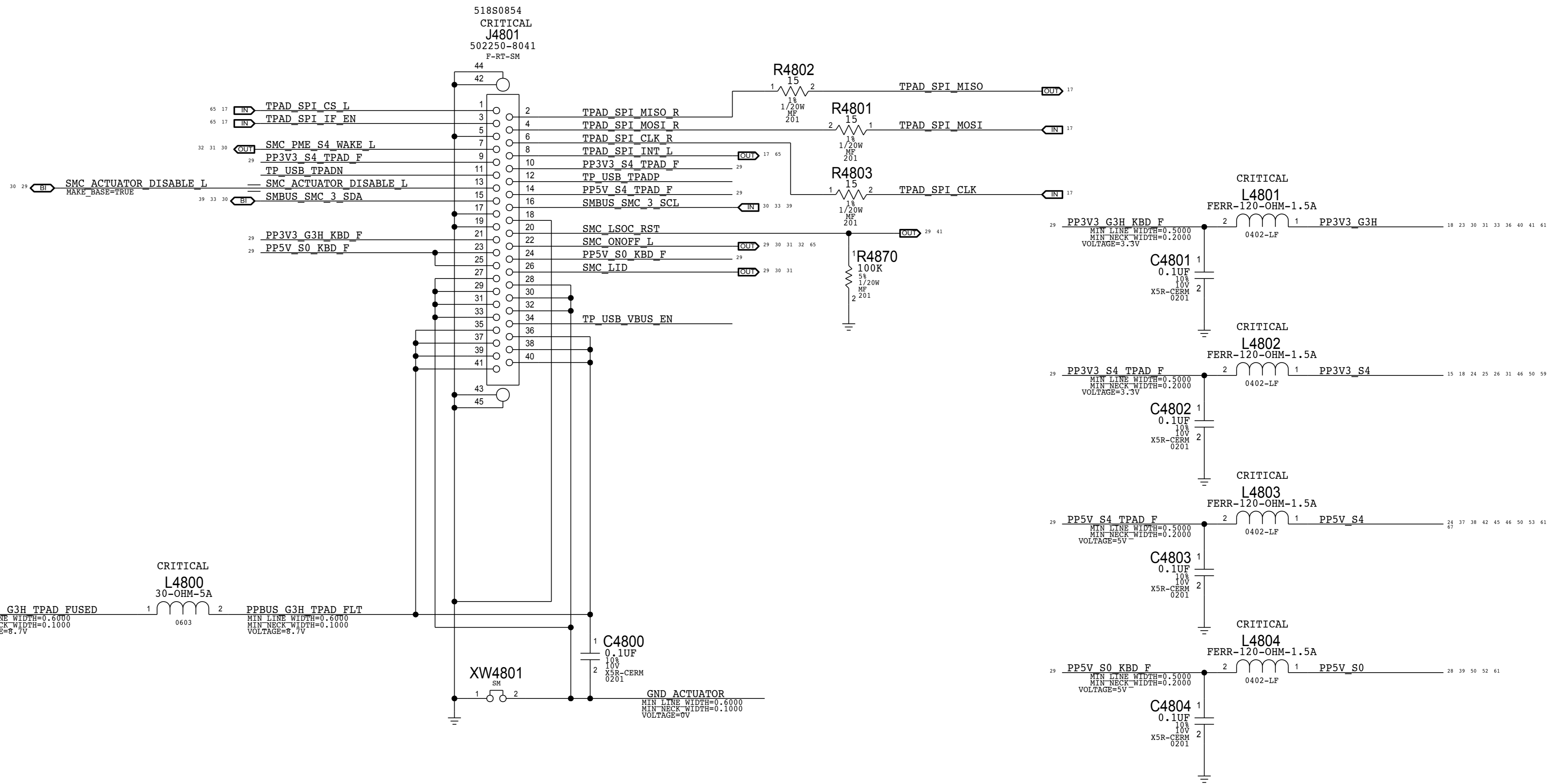


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|   | PAGE           | 40 OF 130            |      |
|   | SHEET          | 28 OF 67             |      |



# IPD ZIF CONNECTOR

Bottom side contacts used  
Pinout reversed from flex



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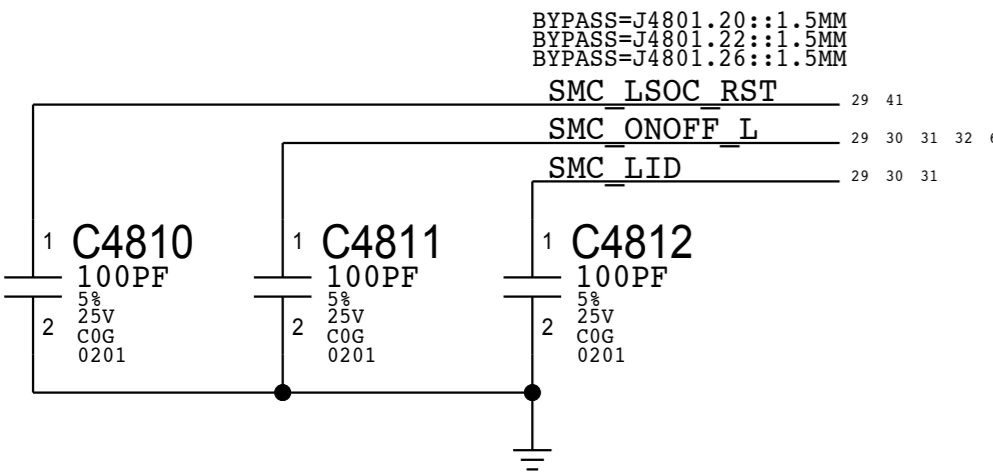
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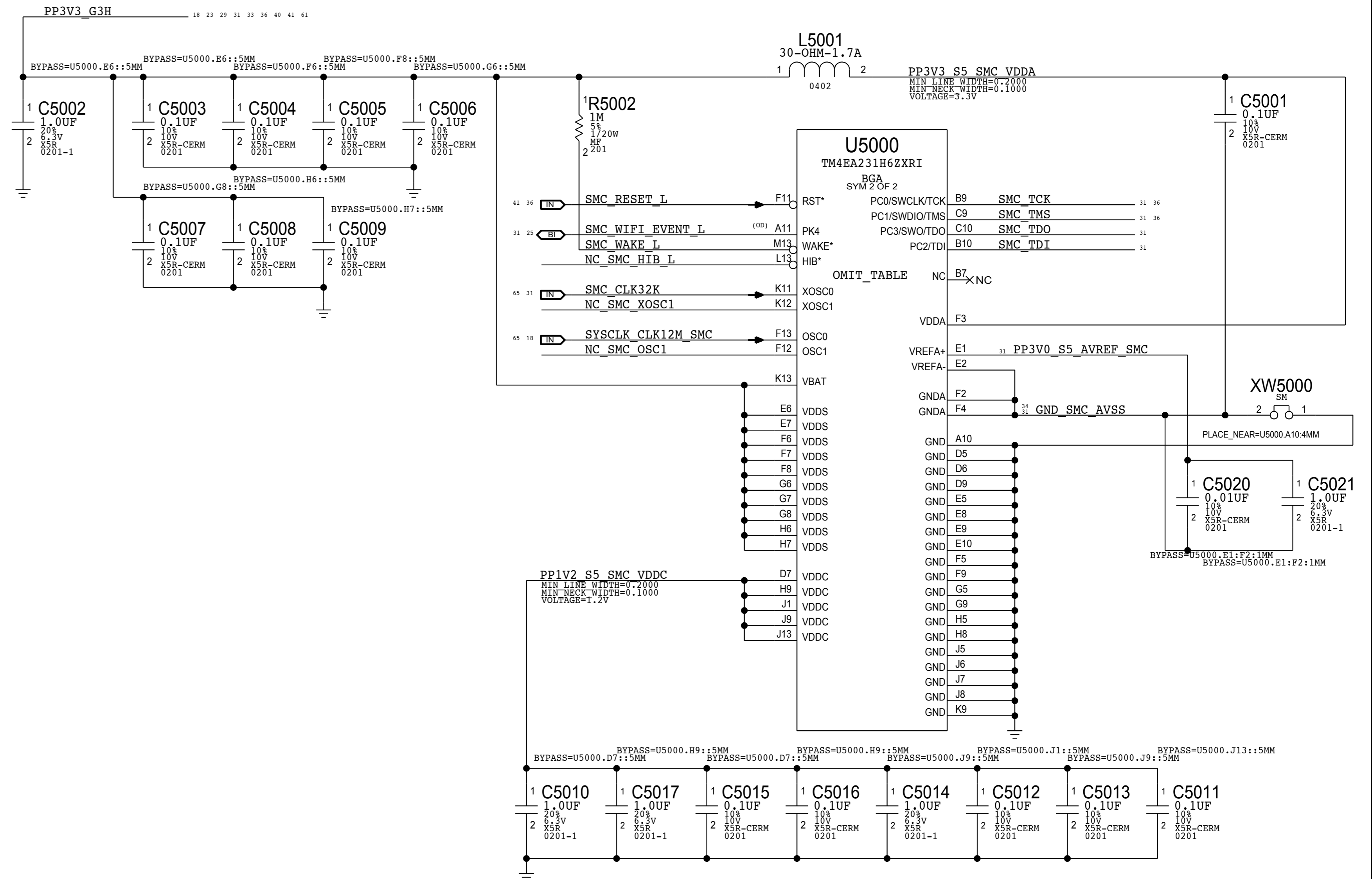
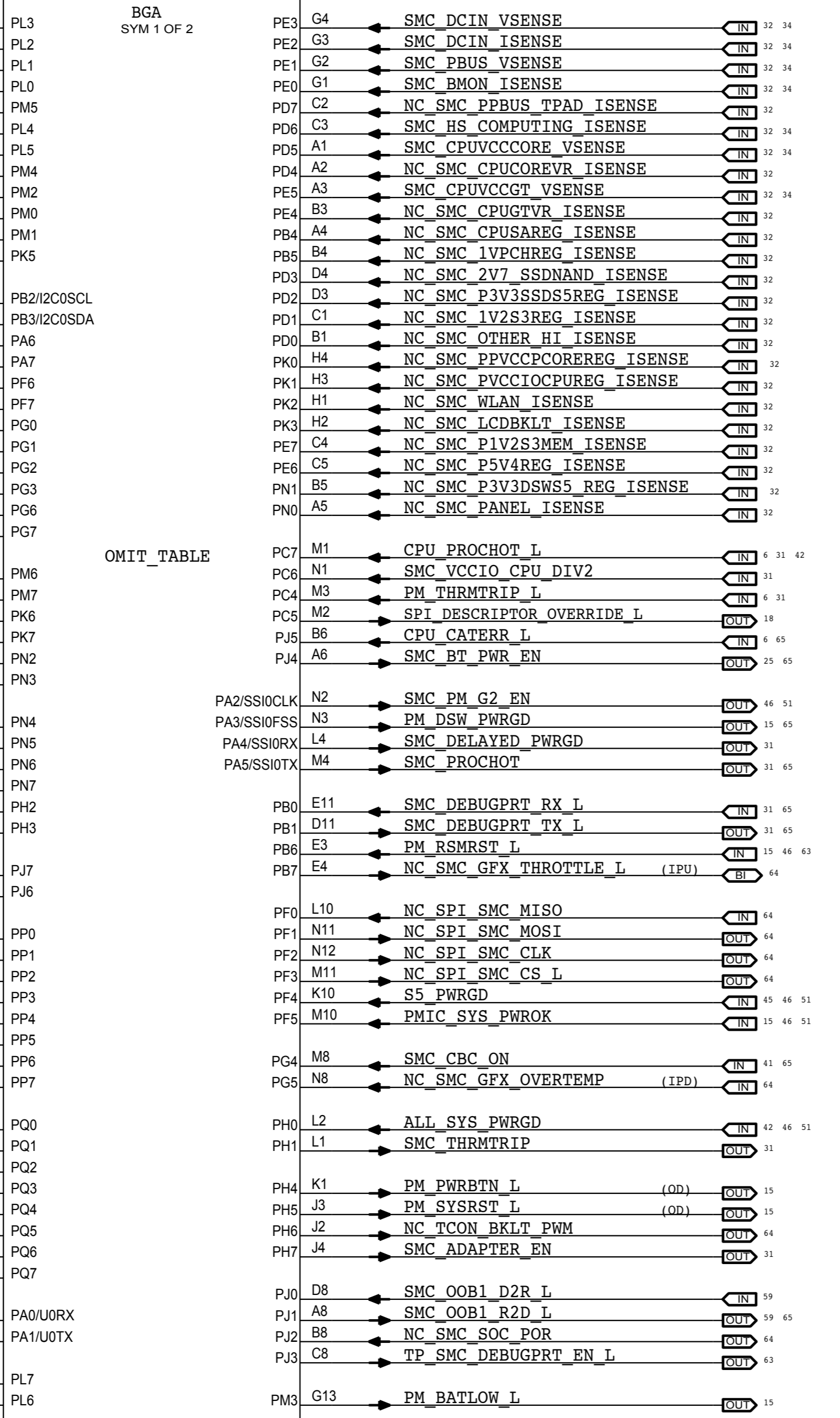
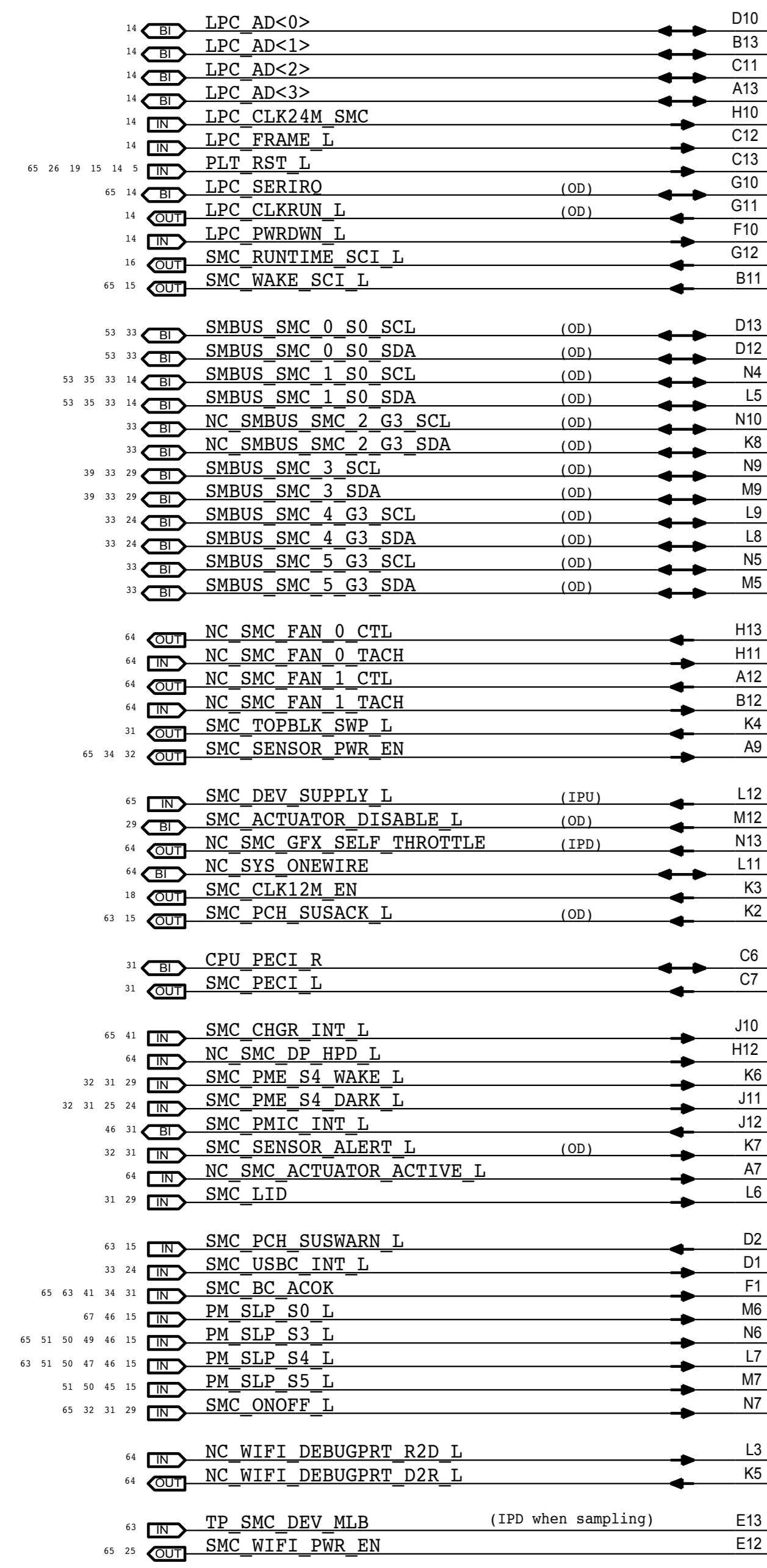
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TM4EA231H6ZXRI  
BGA  
SYM 1 OF 2

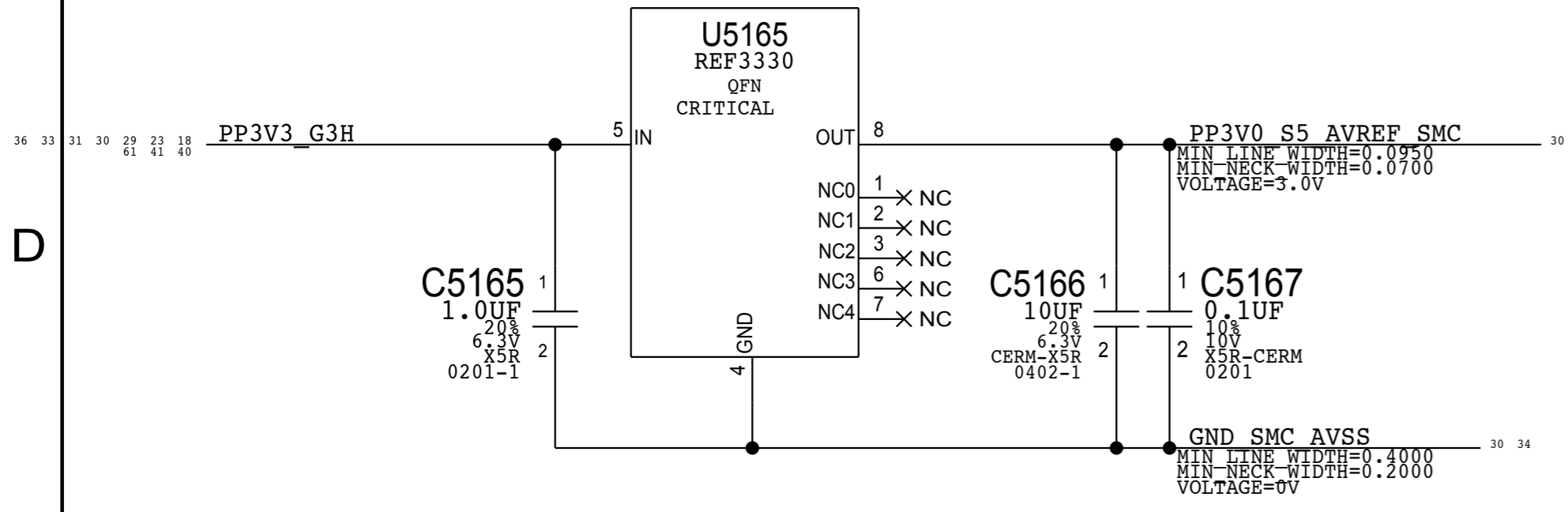


NOTE:  
SMS Interrupt can be active high or low, rename net accordingly.  
If SMS interrupt is not used, pull up to SMC rail.

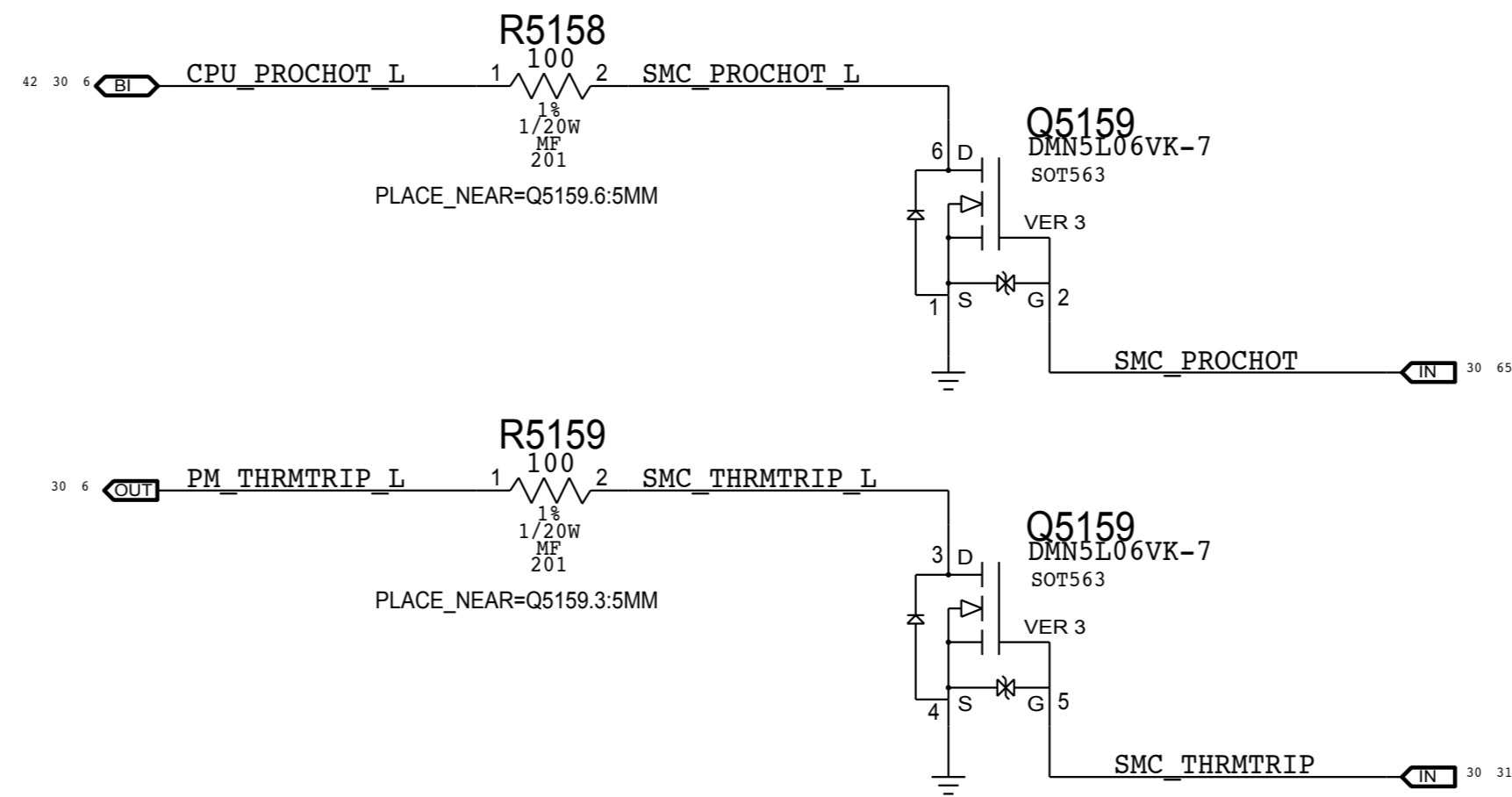
NOTE:  
Unused pins have "SMC\_Pxx" names. Unused pins designed as outputs can be left floating, those designated as inputs require pull-ups.

|   |   |
|---|---|
| SMC   |   |
| Apple Inc.  | DRAWING NUMBER<br><SCH_NUM><br>SIZE<br>D  |
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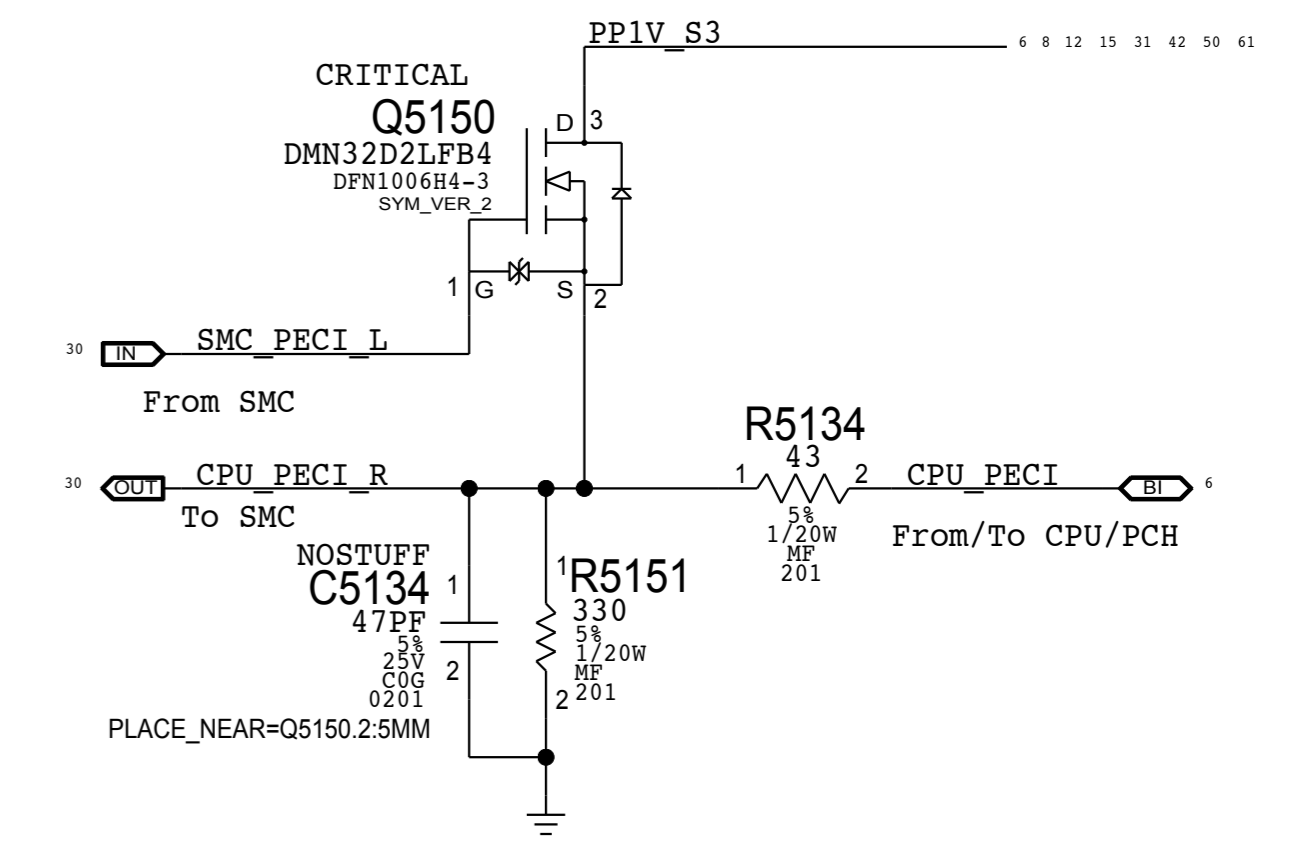
### SMC AVREF Supply



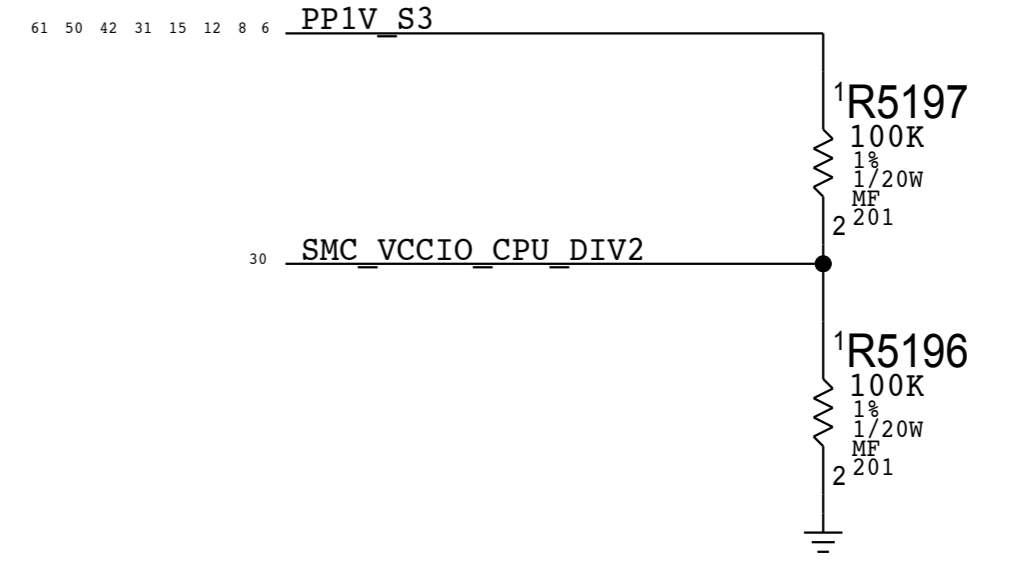
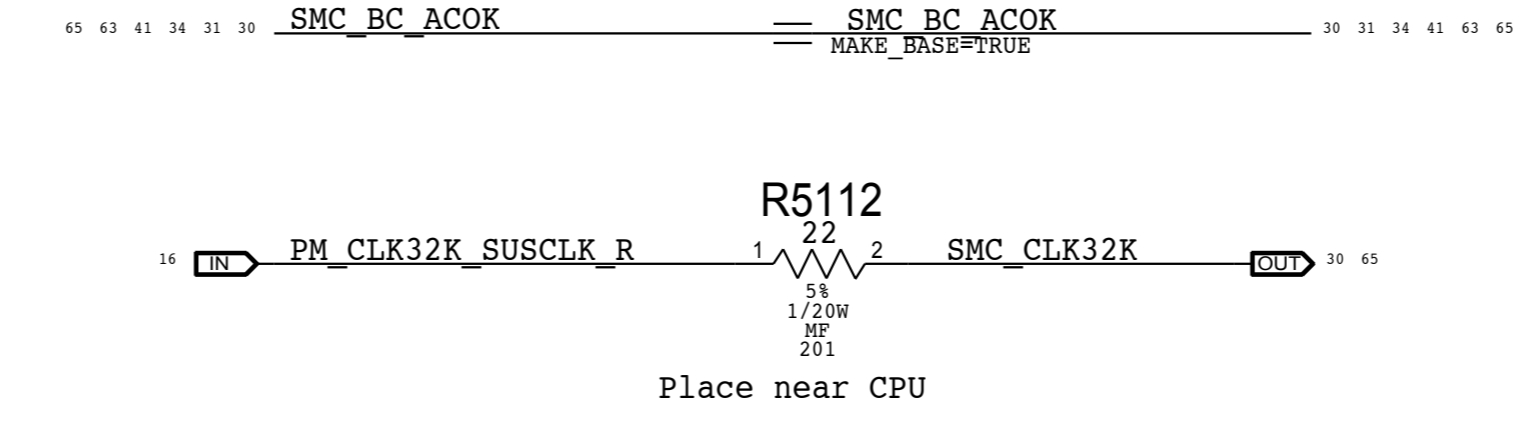
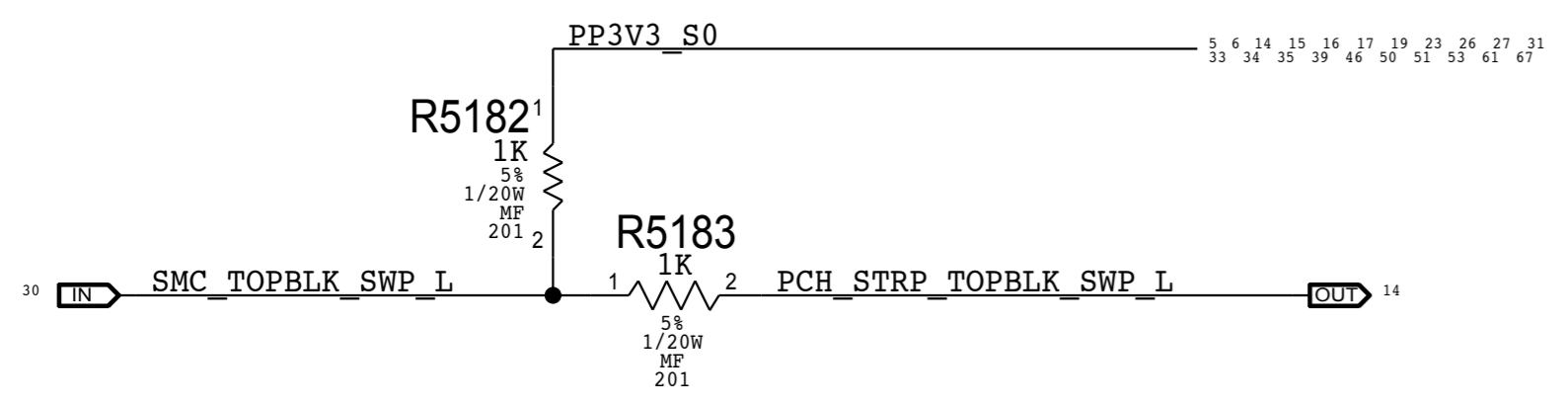
### PROCHOT/THRMTRIP Support



### PECI Support



### Top-Block Swap



|    |    |    |                    |             |       |      |   |    |               |               |
|----|----|----|--------------------|-------------|-------|------|---|----|---------------|---------------|
| 32 | 30 | 29 | SMC_PME_S4_WAKE_L  | R5166       | 100K  | 1    | 2 |    |               |               |
| 32 | 30 | 24 | SMC_PME_S4_DARK_L  | R5167       | 100K  | 1    | 2 | 5% | 17/20W MF 201 |               |
| 30 | 25 | 24 | SMC_WPT_EVENT_L    | R5168       | 100K  | 1    | 2 | 5% | 17/20W MF 201 |               |
| 46 | 30 |    | SMC_PMIC_INT_L     | R5169       | 100K  | 1    | 2 | 5% | 17/20W MF 201 |               |
| 65 | 32 | 29 | SMC_ONOFF_L        | R5170       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 32 | 30 | 29 | SMC_SENSOR_ALERT_L | R5172       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 30 | 29 |    | SMC_LID            | R5171       | 330K  | 1    | 2 | 5% | 17/20W MF 201 |               |
| 65 | 30 |    | SMC_DEBUGPRT_TX_L  | R5175       | 20K   | 1    | 2 |    |               |               |
| 65 | 30 |    | SMC_DEBUGPRT_RX_L  | R5176       | 20K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 36 | 30 |    | SMC_TMS            | R5177       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 30 |    |    | SMC_TDO            | R5178       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 30 |    |    | SMC_TDI            | R5179       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 36 | 30 |    | SMC_TCK            | R5180       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 65 | 63 | 41 | 31                 | SMC_BC_ACOK | R5187 | 100K | 1 | 2  | 5%            | 17/20W MF 201 |
| 31 | 30 |    | SMC_ADAPTER_EN     | R5185       | 100K  | 1    | 2 | 5% | 17/20W MF 201 |               |
| 31 | 30 |    | SMC_THRMTRIP       | R5186       | 10K   | 1    | 2 | 5% | 17/20W MF 201 |               |
| 30 |    |    | SMC_DELAYED_PWRGD  | R5191       | 100K  | 1    | 2 | 5% | 17/20W MF 201 |               |

SYNC\_MASTER=X260\_ERIC SYNC\_DATE=06/04/2015  
PAGE TITLE

## SMC Shared Support

Apple Inc.

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| PAGE           | 51 OF 130 |
| SHEET          | 31 OF 67  |

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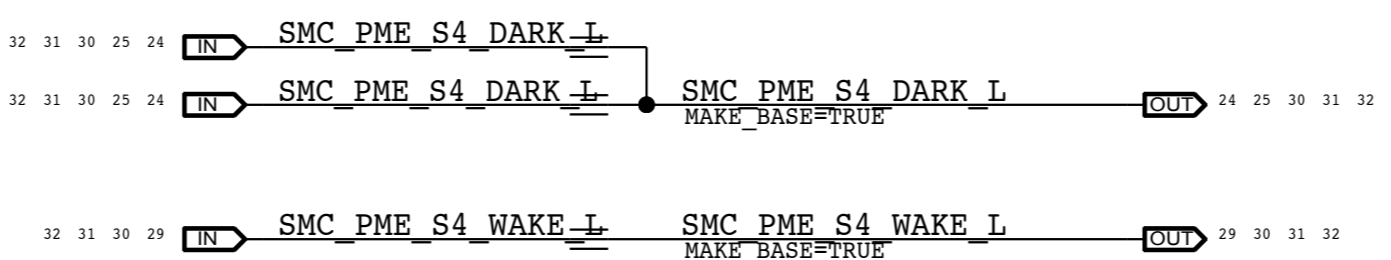
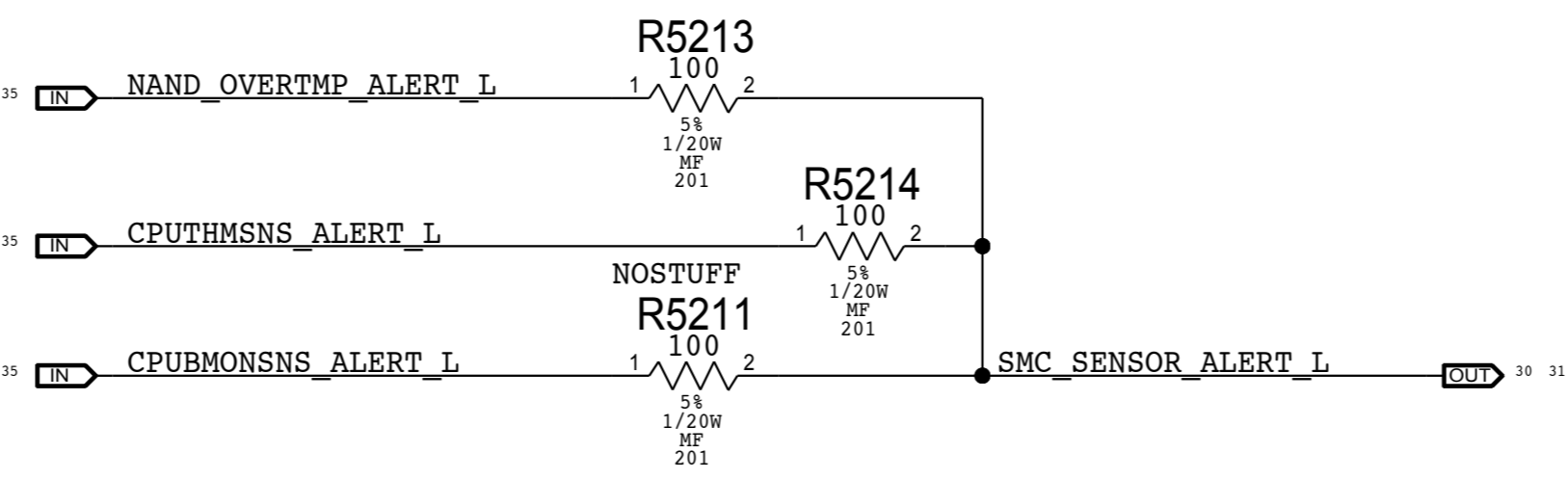
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34 32 30 SMC_DCIN_ISENSE == SMC_DCIN_ISENSE 30 32 34
MAKE_BASE=TRUE
34 32 30 SMC_PBUS_VSENSE == SMC_PBUS_VSENSE 30 32 34
MAKE_BASE=TRUE
34 32 30 SMC_BMON_ISENSE == SMC_BMON_ISENSE 30 32 34
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MAKE_BASE=TRUE
34 32 30 SMC_HS_COMPUTING_ISENSE == SMC_HS_COMPUTING_ISENSE 30 32 34
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MAKE_BASE=TRUE
34 32 30 NC_SMC_1V2S3REG_ISENSE == NC_SMC_1V2S3REG_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_OTHER_HI_ISENSE == NC_SMC_OTHER_HI_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_PPVCCPCOREREG_ISENSE == NC_SMC_PPVCCPCOREREG_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_PVCCIOCPUREG_ISENSE == NC_SMC_PVCCIOCPUREG_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_WLAN_ISENSE == NC_SMC_WLAN_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_LCDBKLT_ISENSE == NC_SMC_LCDBKLT_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_P1V2S3MEM_ISENSE == NC_SMC_P1V2S3MEM_ISENSE 30 32
MAKE_BASE=TRUE
34 32 30 NC_SMC_P5V4REG_ISENSE == NC_SMC_P5V4REG_ISENSE 30 32
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MAKE_BASE=TRUE
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```

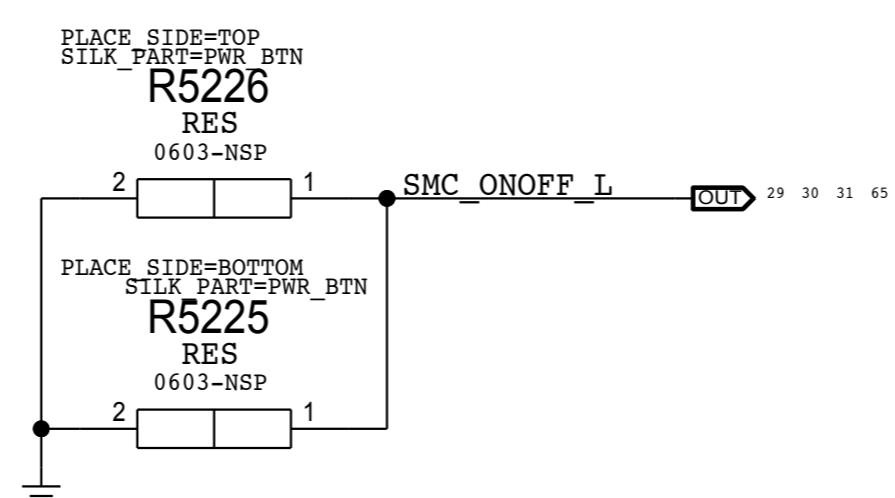
```

65 34 32 SMC_SENSOR_PWR_EN == SMC_SENSOR_PWR_EN 30 32 34 65
MAKE_BASE=TRUE

```

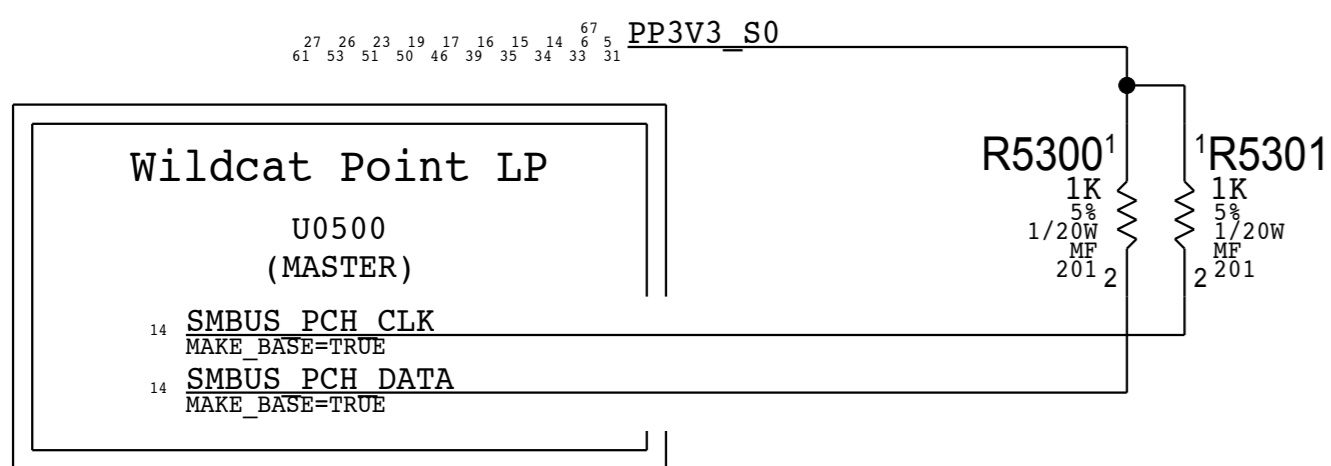


Debug Power "Buttons"

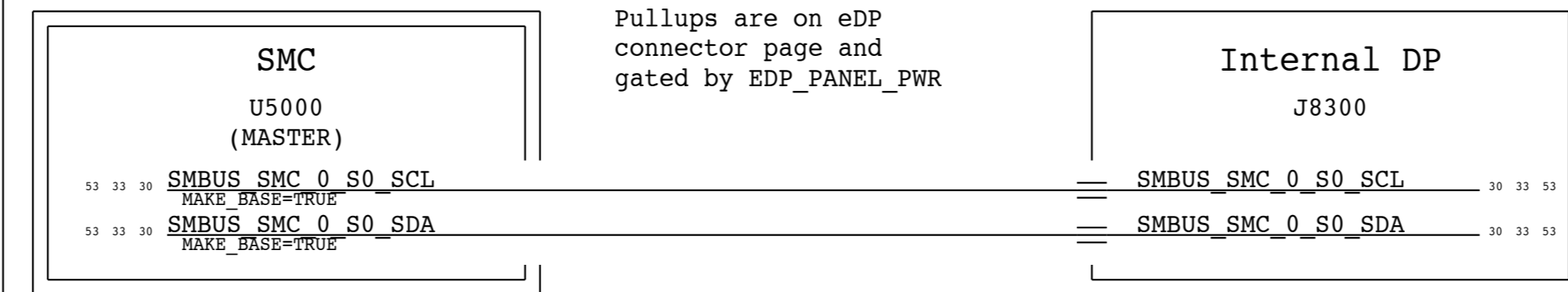


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|   |  | PAGE                 | 52 OF 130 |
|   |  | SHEET                | 32 OF 67  |

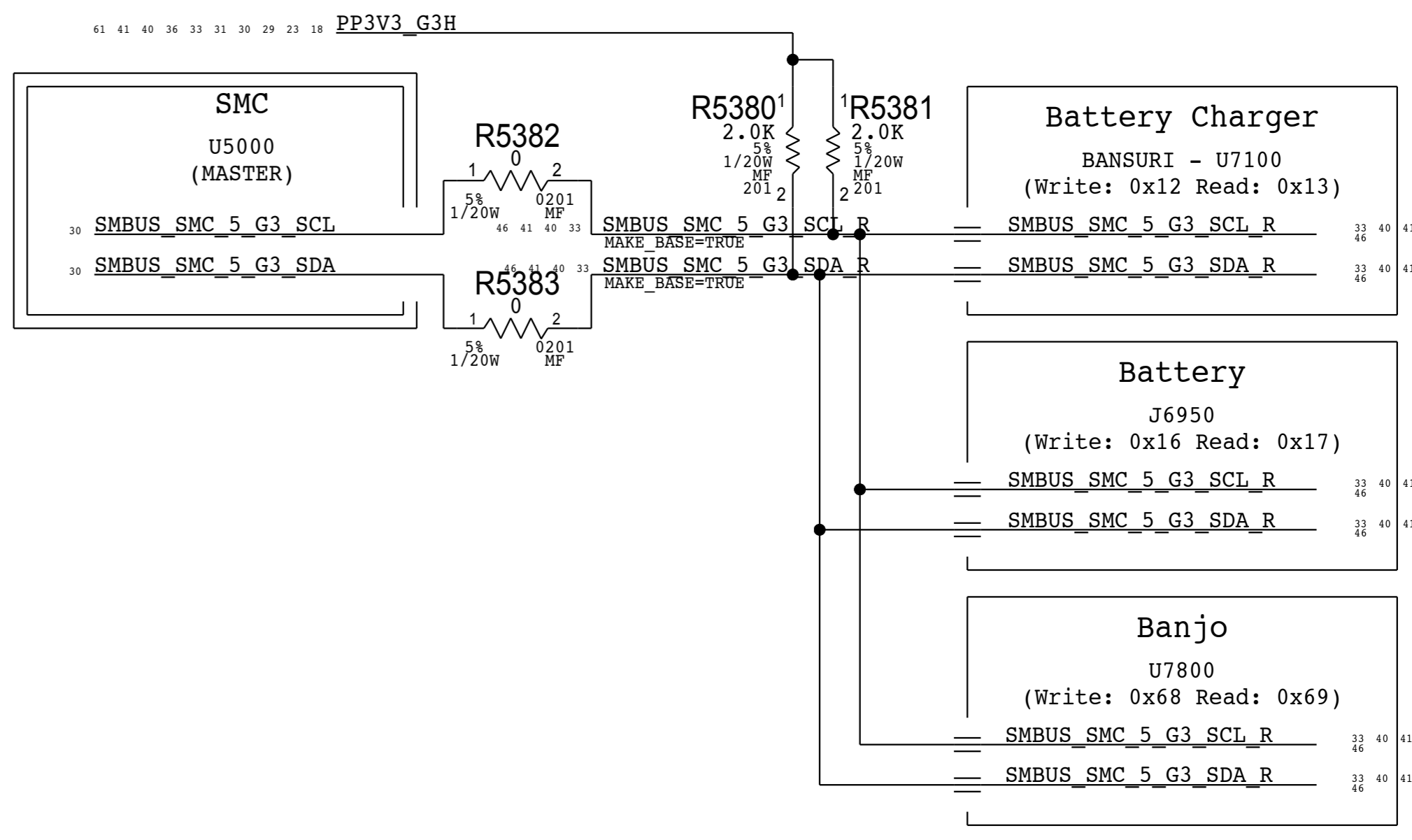
### Sunrise Point LP S0 SMBus "0" Connections



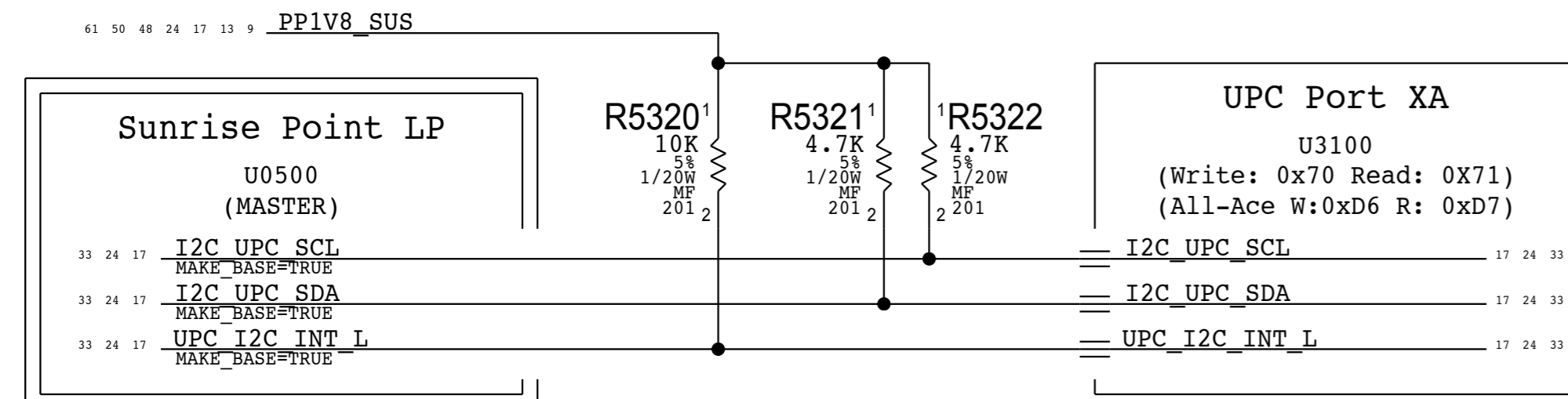
### SMC "0" SMBus S0 Connections



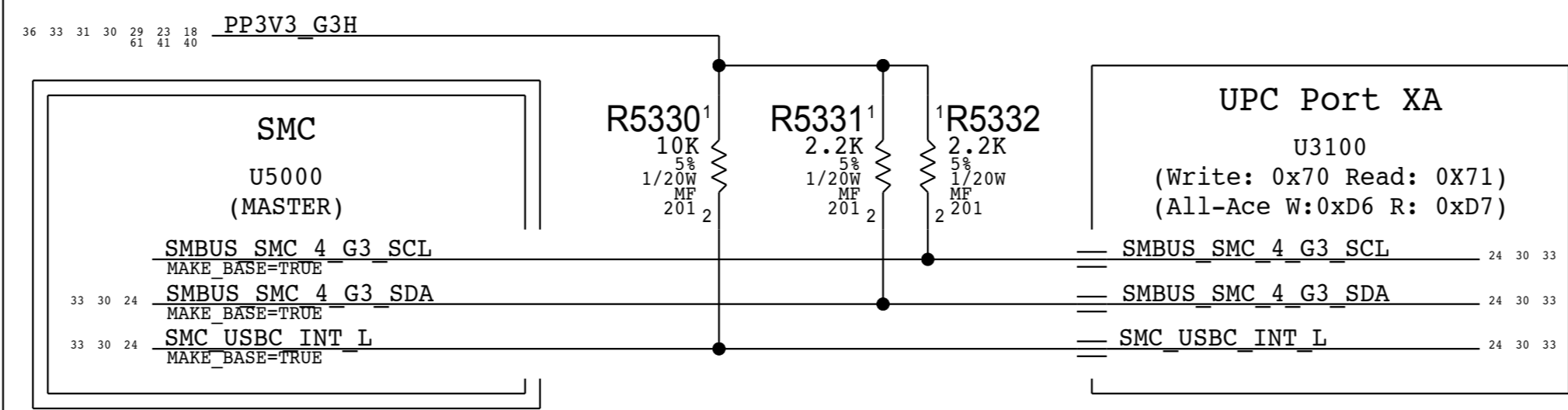
### SMC "5" SMBus G3H Connections



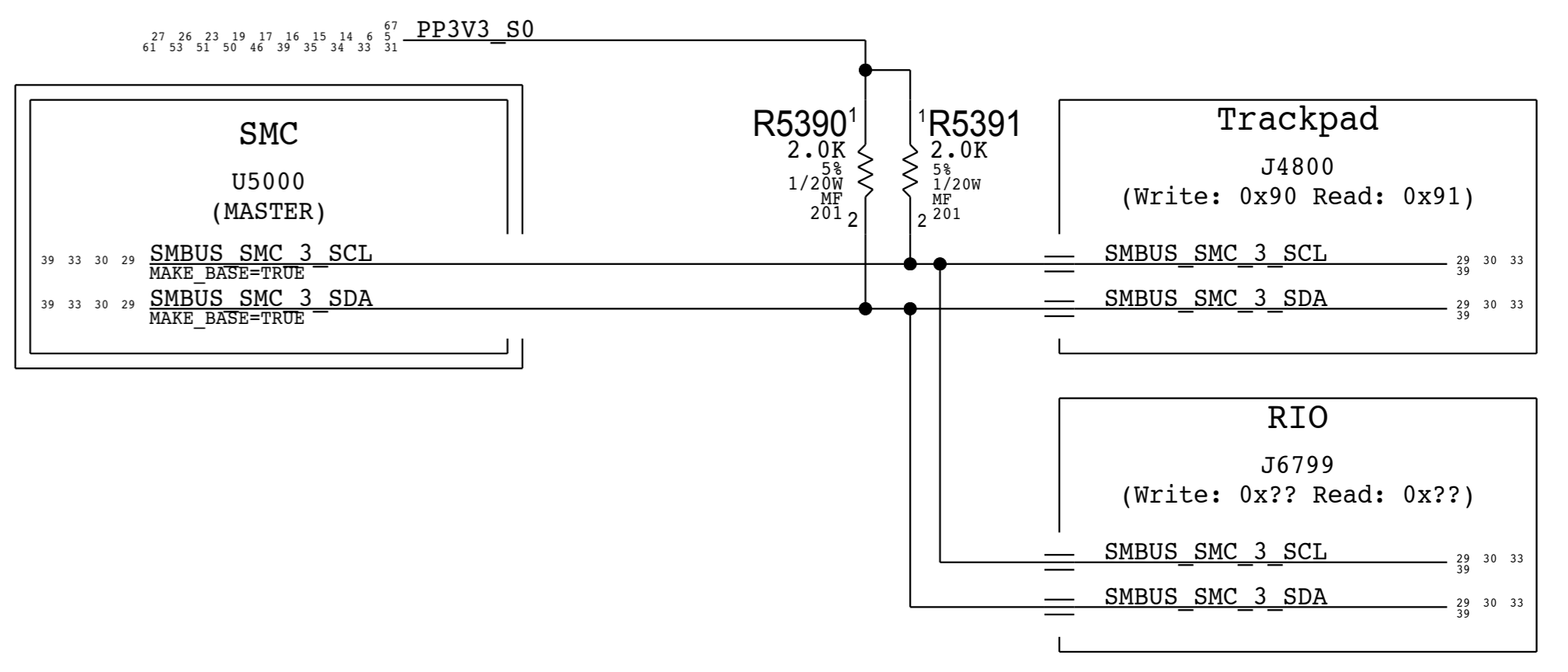
### Sunrise Point LP S0 I2C "2" Connections



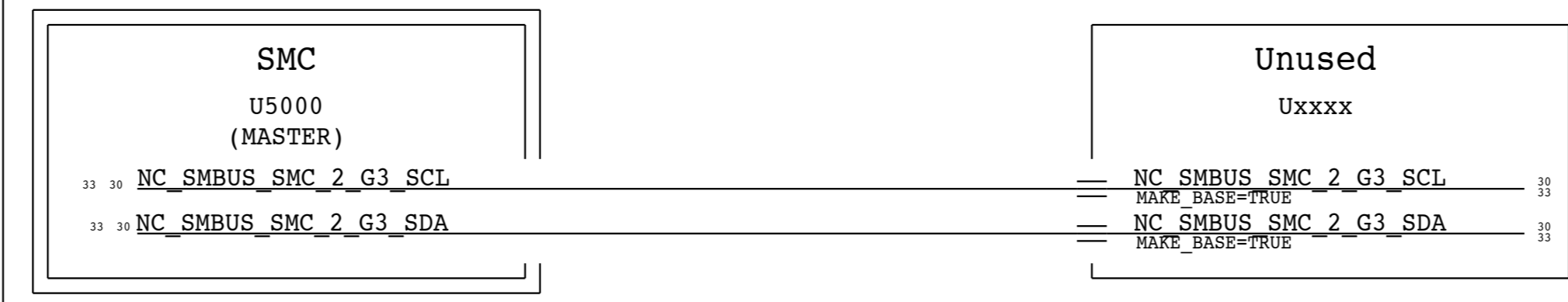
### SMC "4" SMBus G3H Connections



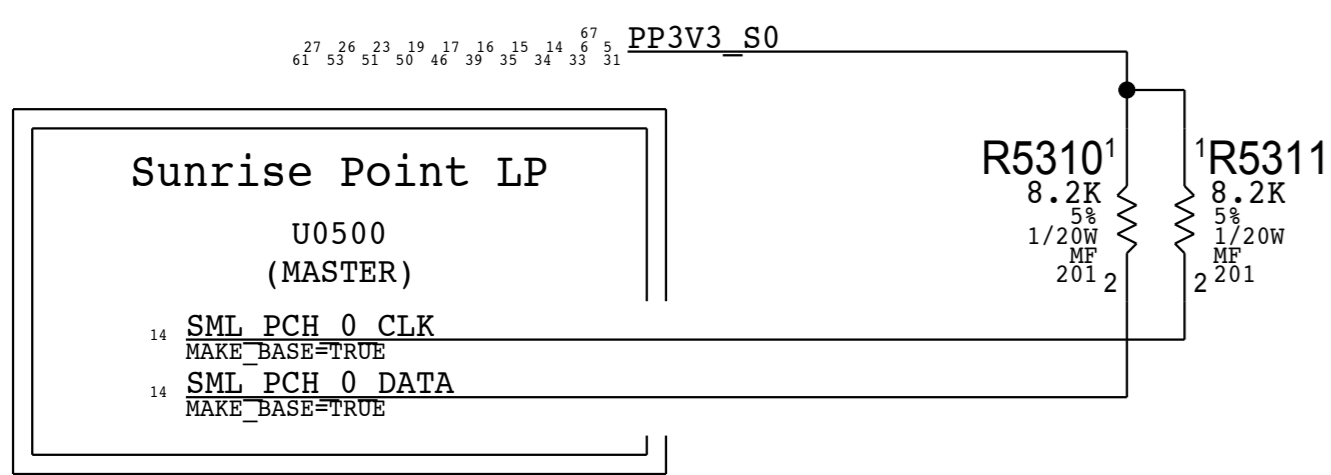
### SMC "3" SMBus S0 Connections



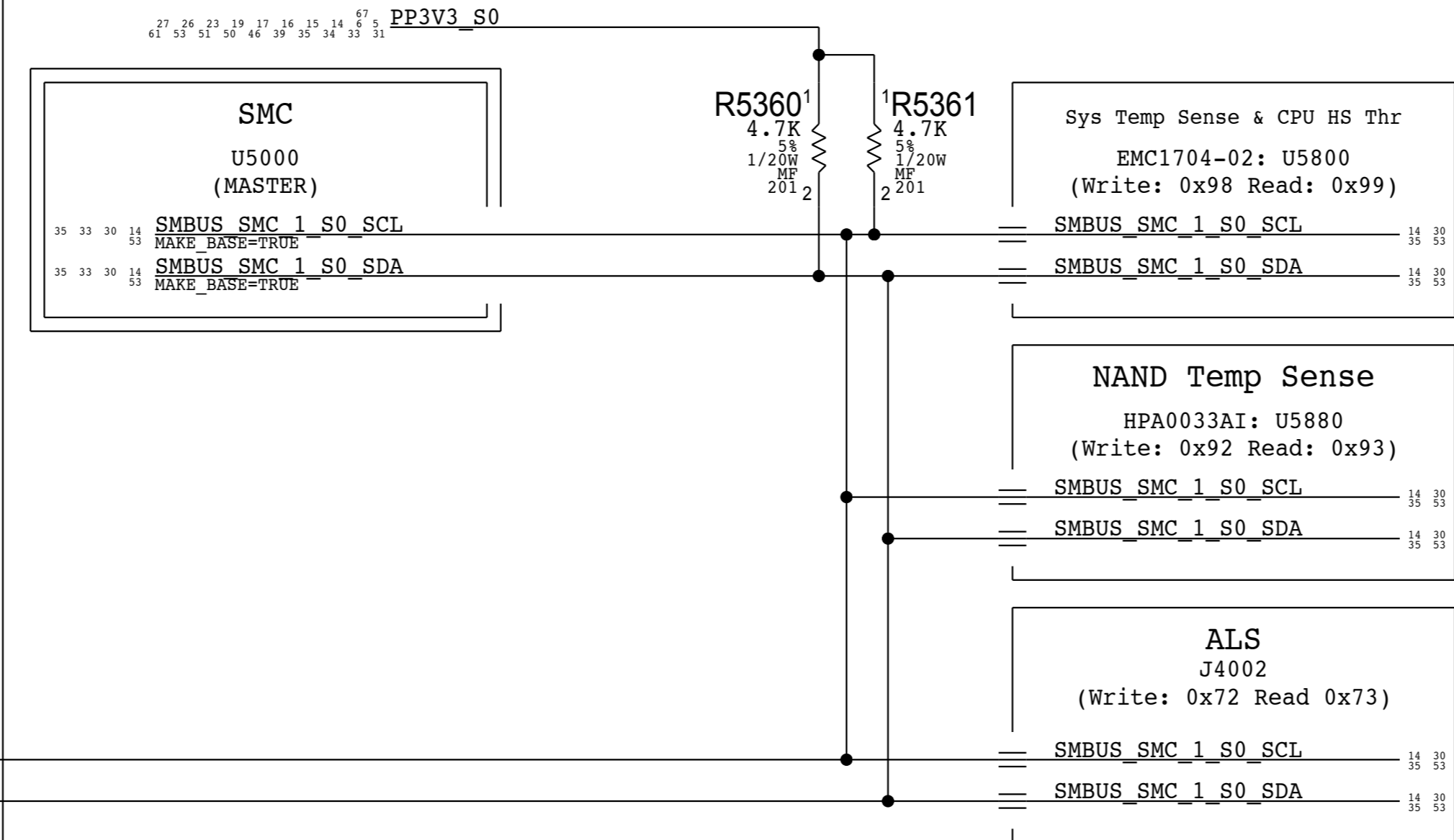
### SMC "2" SMBus Connections



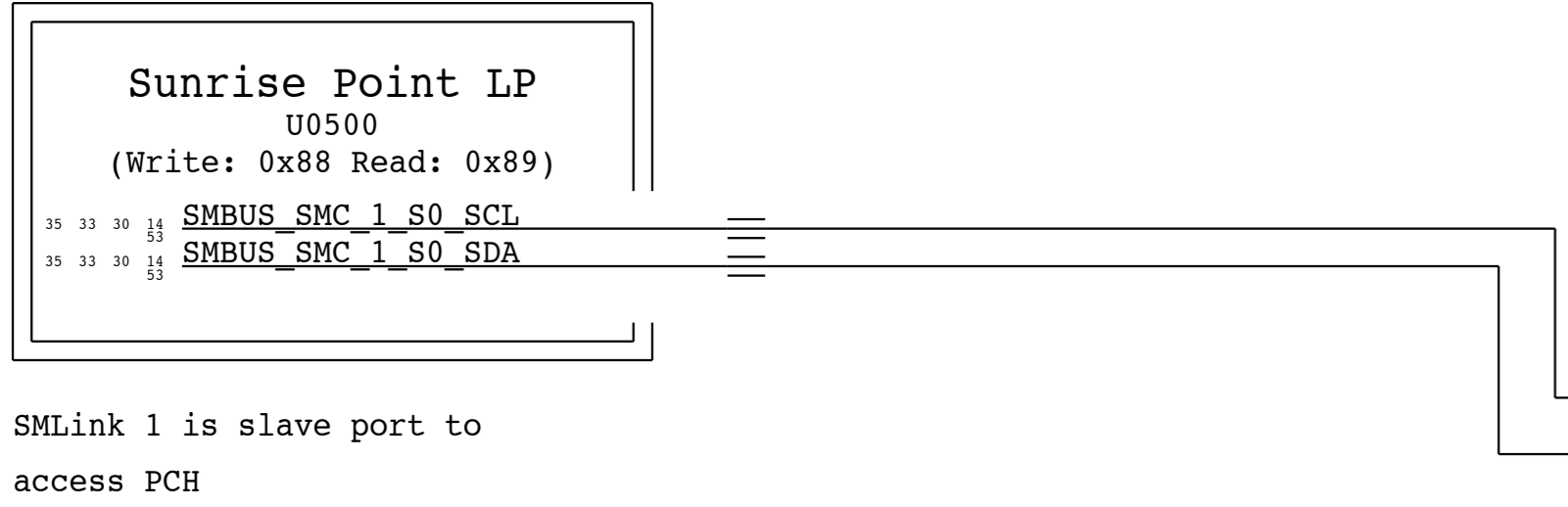
### Sunrise Point LP S0 "SMLink 0" Connections



### SMC S0 "1" SMBus Connections



### Sunrise Point LP S0 "SMLink 1" Connections

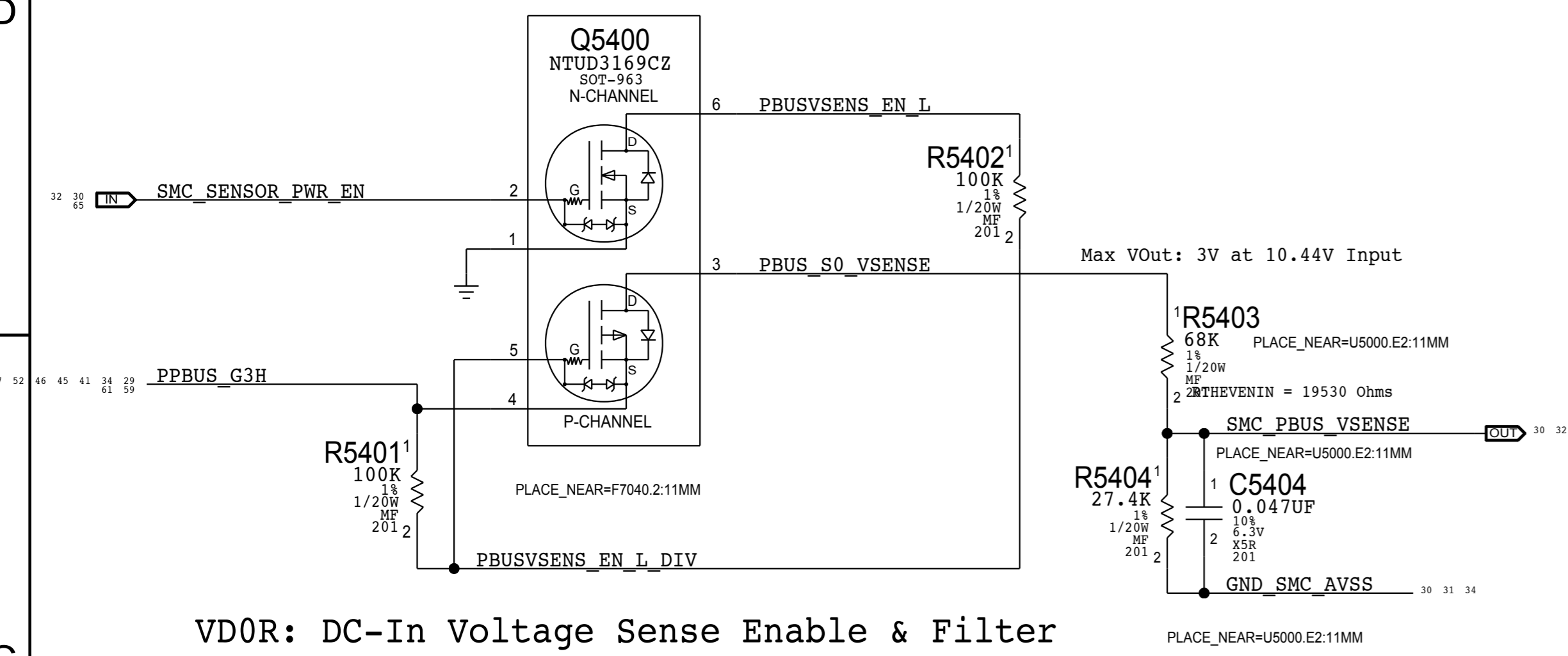


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|   |  | SHEET                | 33 OF 67  |

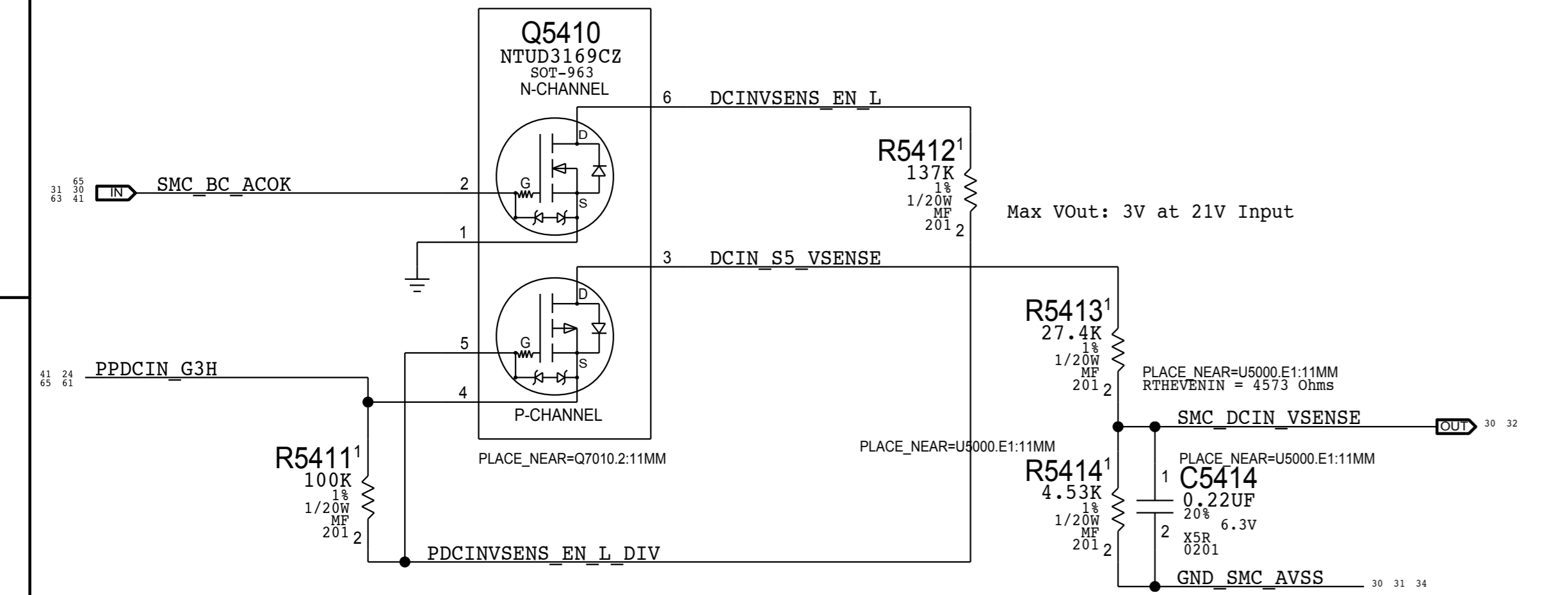


# POR VOLTAGE / CURRENT SENSORS : TO BE USED IN PRODUCTION

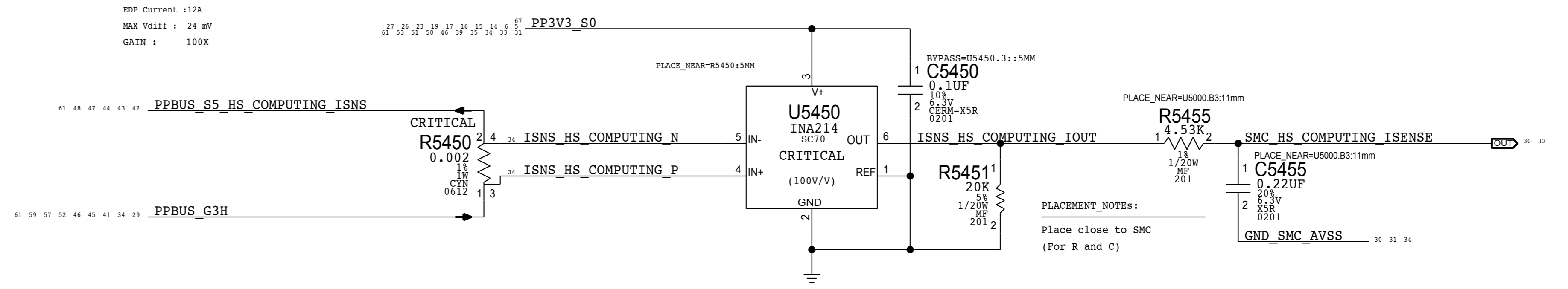
VP0R: PBUS Voltage Sense Enable & Filter



VD0R: DC-In Voltage Sense Enable & Filter

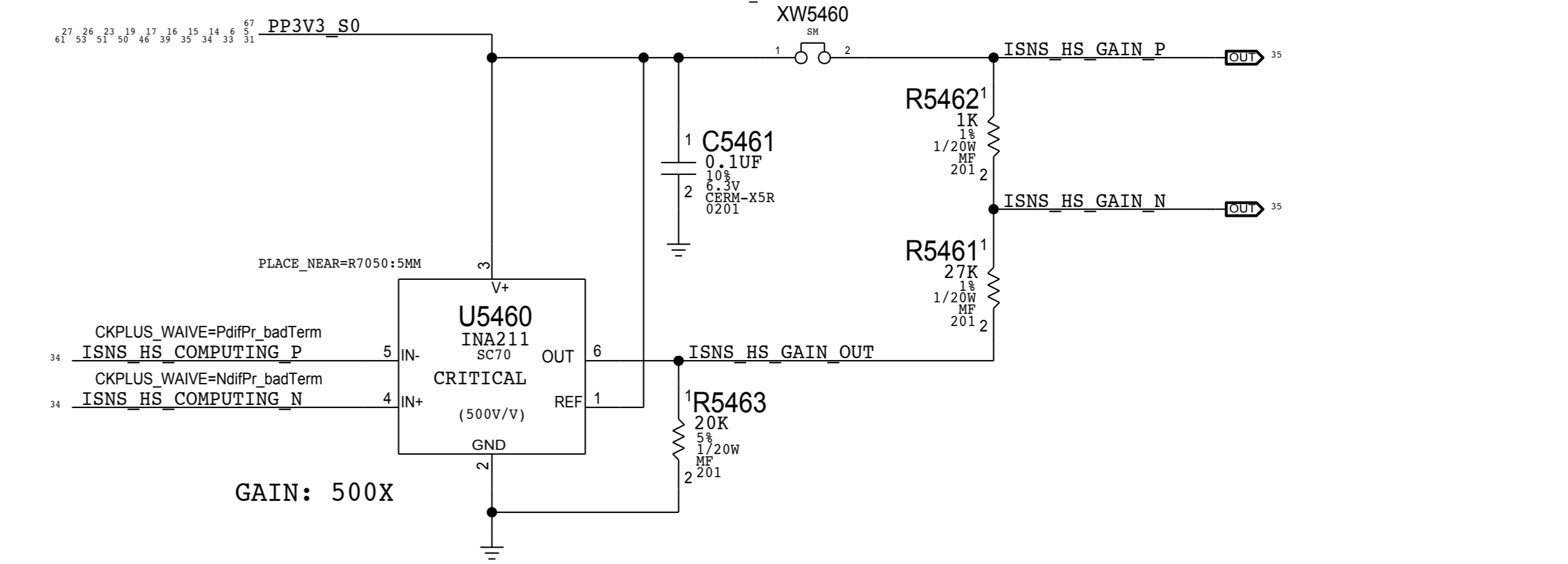


IC0R : COMPUTING High Side Current Sense

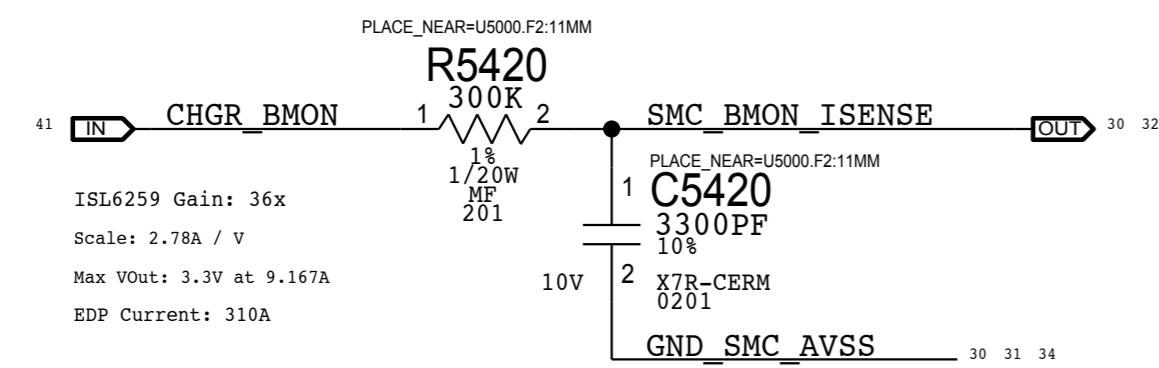


Need to set gains for ULX

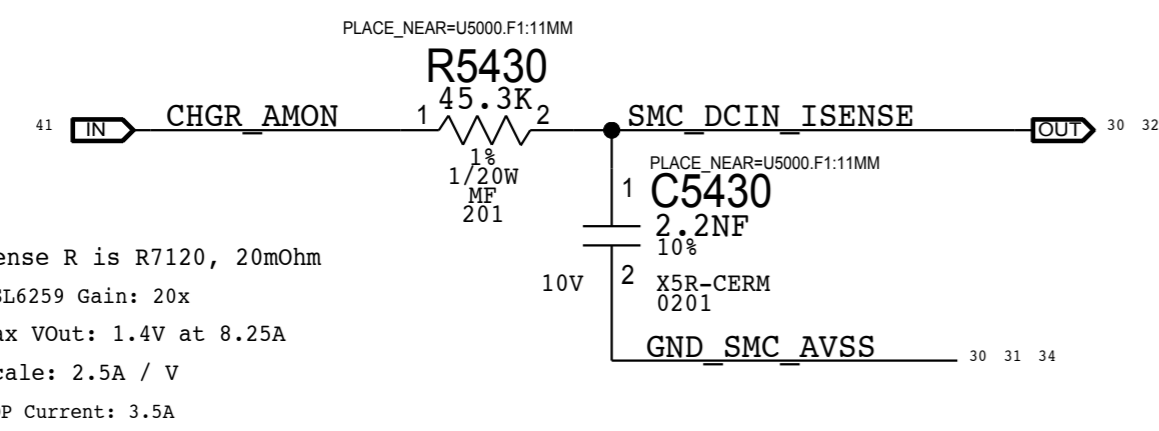
EMC1704 Computing High Side Gain Stage



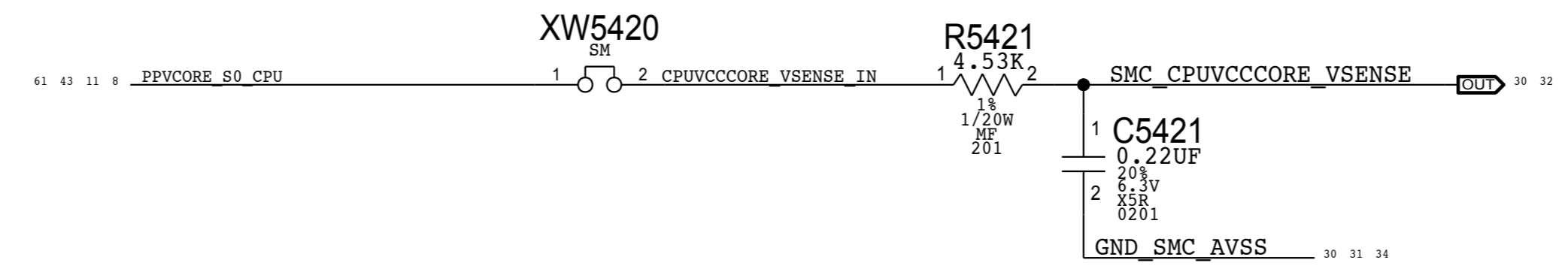
CHARGER BMON High Side Current Sense



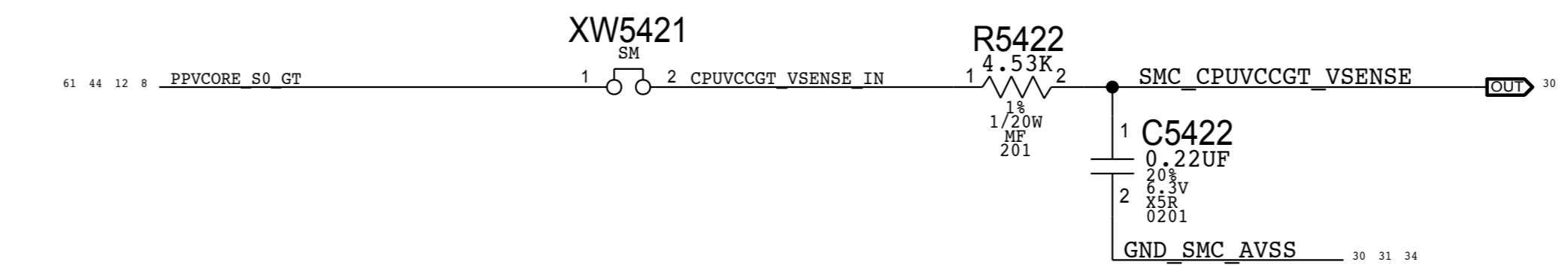
DC-IN (AMON) Current Sense



VC0C : CPU VCC CORE Voltage Sense



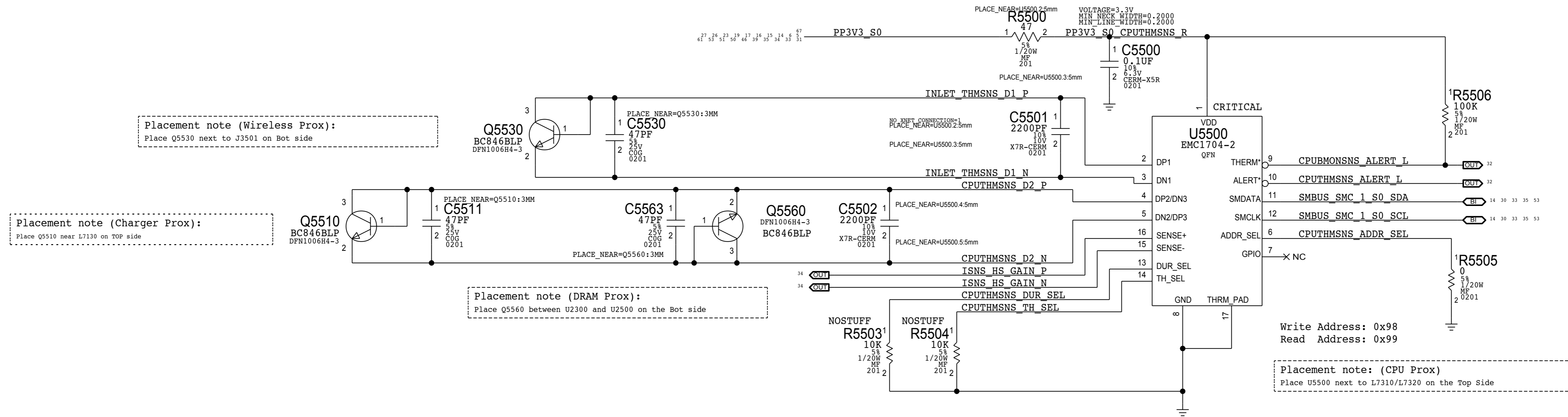
VCGC : CPU VCCGT Voltage Sense



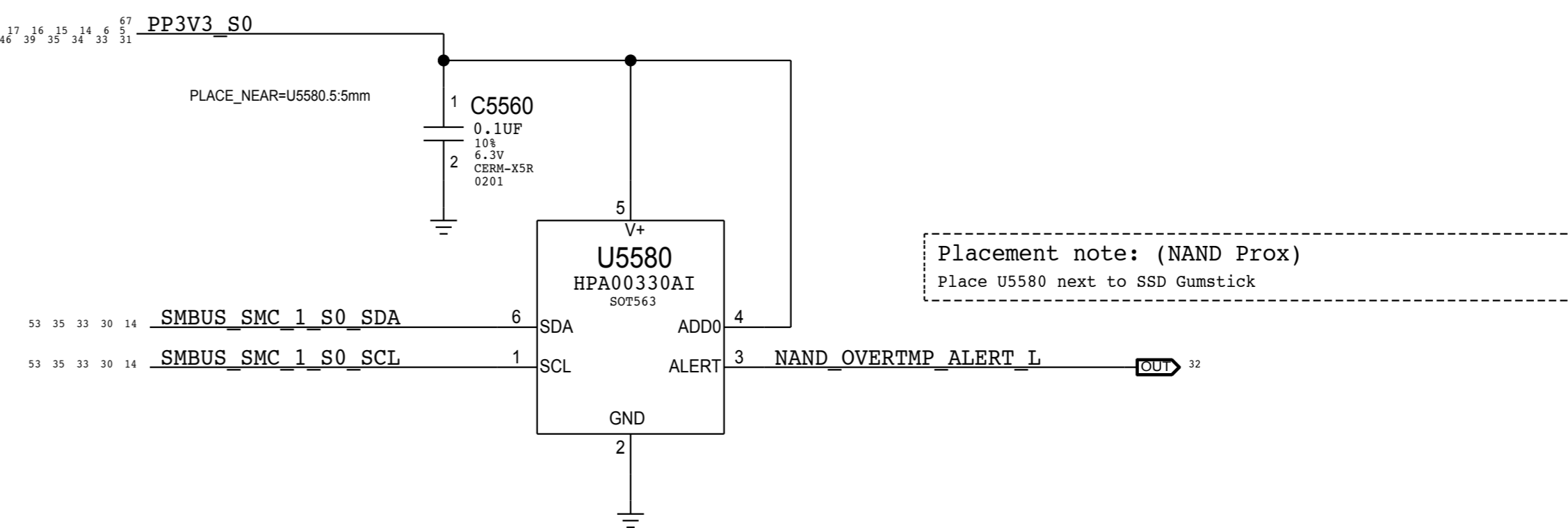
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| Voltage & Current Sensing   |  | DRAWING NUMBER       | SIZE      |
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# POR THERMAL SENSORS : TO BE USED IN PRODUCTION

## CPU Proximity, Inlet ,DDR and BMON THR Sensor



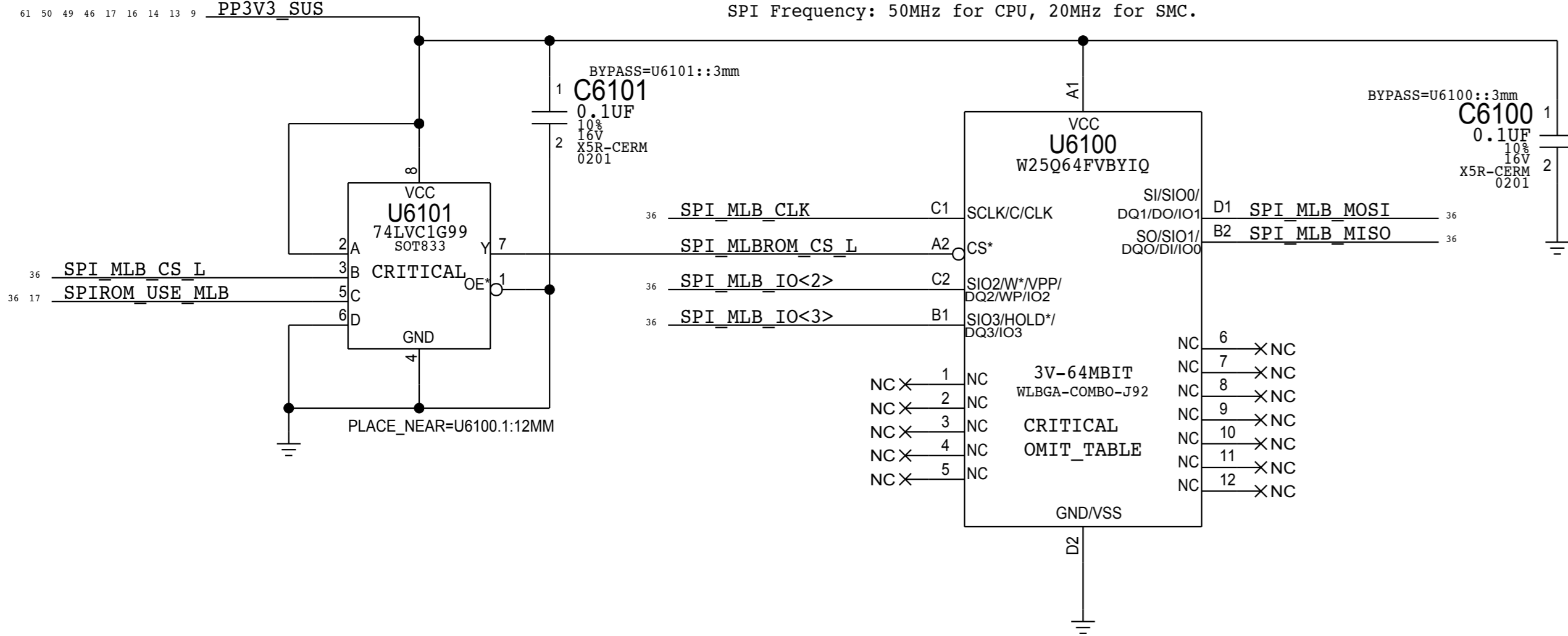
## NAND Temp Sensor



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|   |  | <BRANCH>             |           |
|   |  | PAGE                 | 55 OF 130 |
|   |  | SHEET                | 35 OF 67  |

### SPI ROM - Combo BGA Footprint (3 vendors)

Quad-IO Mode (Mode 0 & 3) supported.  
 SPI Frequency: 50MHz for CPU, 20MHz for SMC.

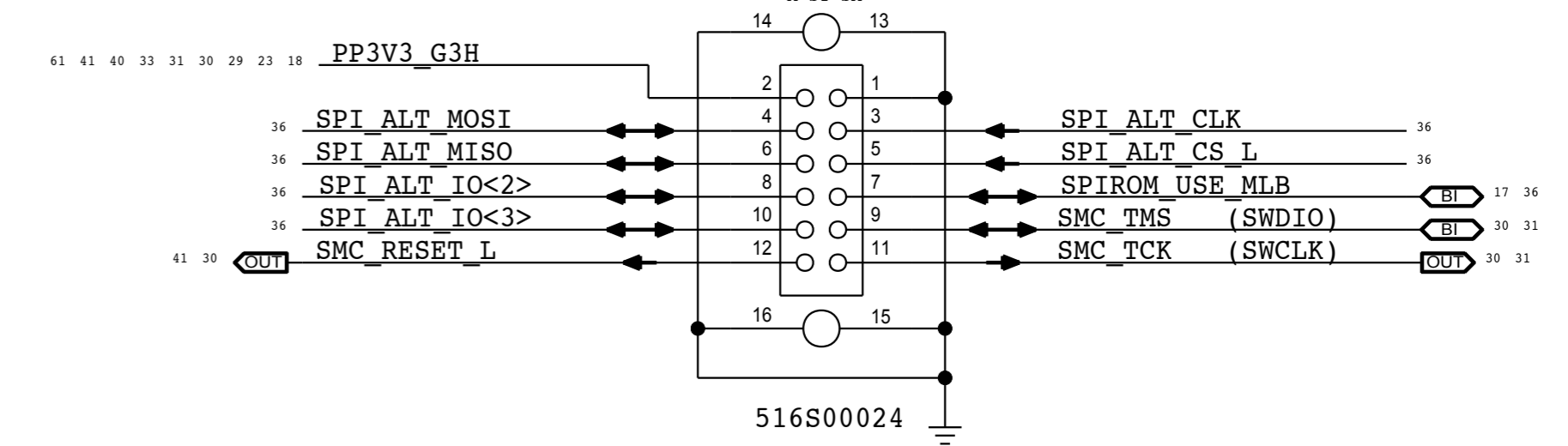


### SPI+SWD SAM Connector

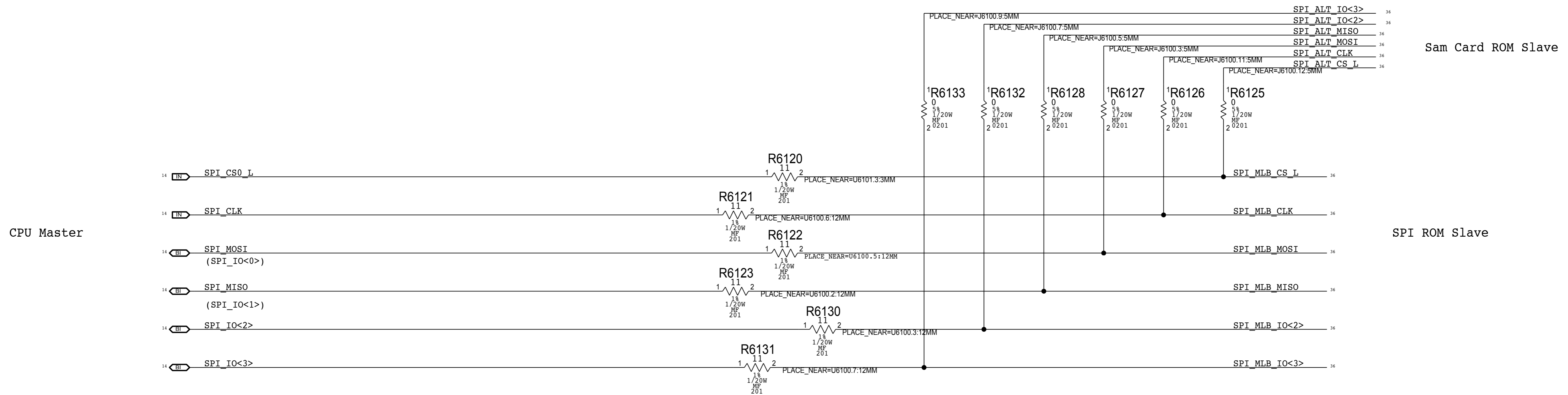
CRITICAL

J6100

DF40PC-12DP-0.4V-51



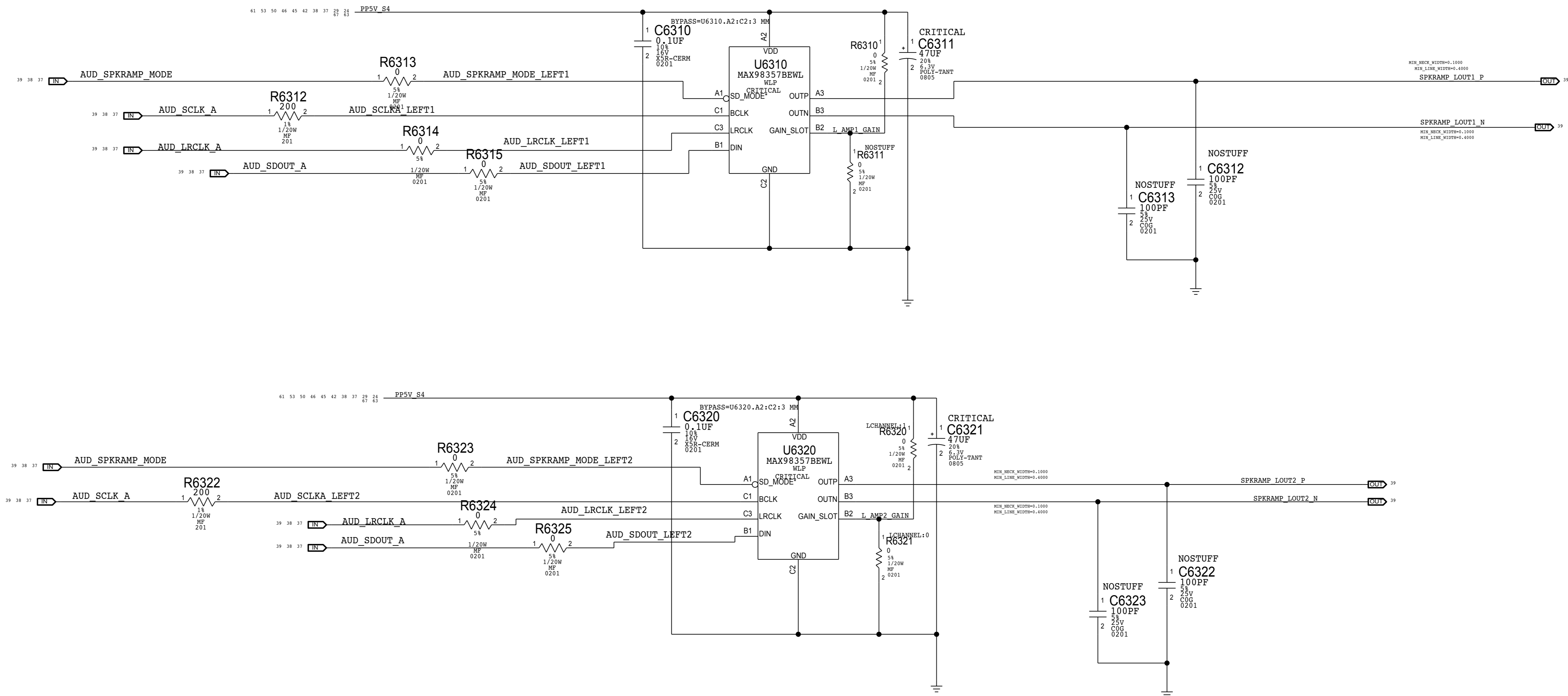
### BootROM SPI Bus Series Termination



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| PAGE TITLE  |                |                      |           |
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|   |                | SHEET                | 36 OF 67  |

# Left Speaker Amps

APPLE P/N 353S4265

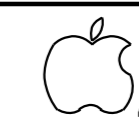


### SPEAKER CONFIGS

| BOM GROUP | BOM OPTIONS           |
|-----------|-----------------------|
| EQ:2CH    | LCHANNEL:1,RCHANNEL:3 |
| EQ:4CH    | LCHANNEL:0,RCHANNEL:4 |

SYNC\_MASTER=J92\_DEVMLB SYNC\_DATE=09/19/2013

### AUDIO Left Speaker Amps



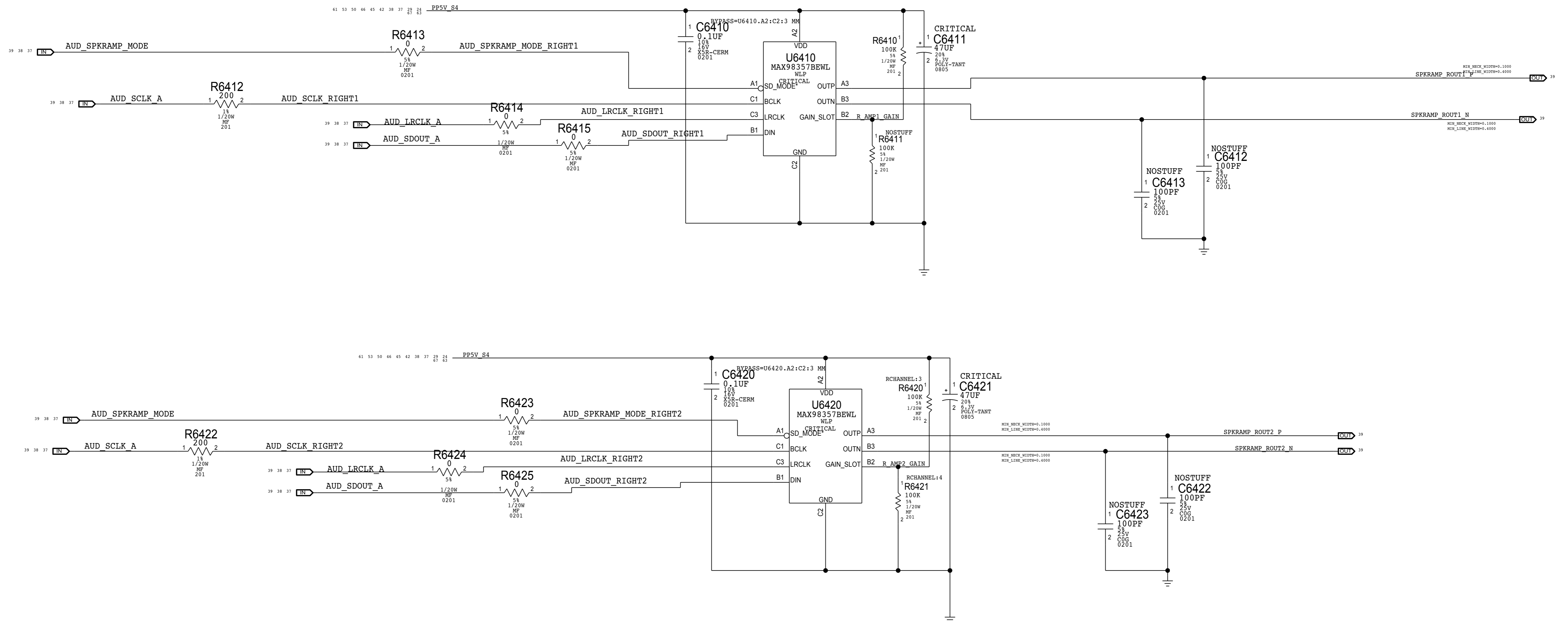
Apple Inc.

|                |      |
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| 63 OF 130      |      |
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# Right Speaker Amps

APPLE P/N 353S4265



|  |                |                      |           |
|--|----------------|----------------------|-----------|
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| AUDIO Right Speaker Amps   |                |                      |           |
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|  |                | SHEET                | 38 OF 67  |



CODEC OUTPUT SIGNAL PATHS

| FUNCTION    | VOLUME   | CONVERTER | PIN COMPLEX | MUTE CONTROL | DET ASSIGNMENT |
|-------------|----------|-----------|-------------|--------------|----------------|
| HP/LINE OUT | 0X02 (2) | 0X02 (2)  | 0X09 (9,A)  |              | 0X09 (A)       |
| SPEAKERS    | 0X04 (4) | 0X04 (4)  | 0X0B (11)   | GPIO_3       | N/A            |

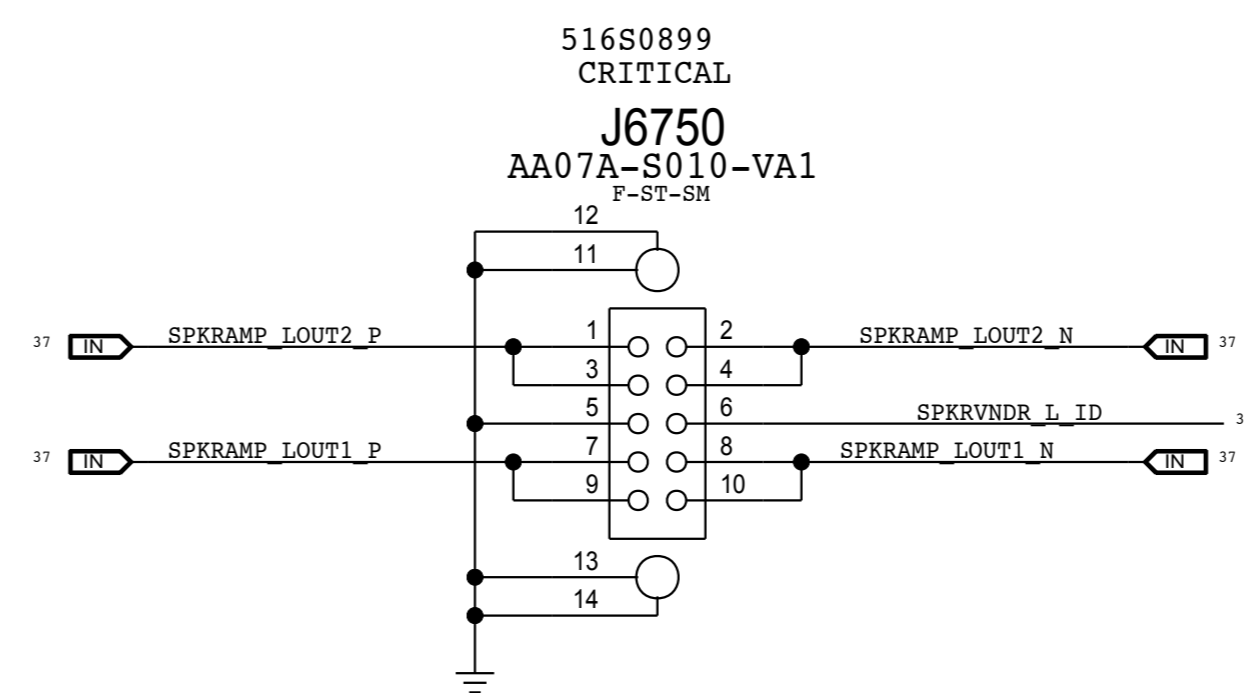
CODEC INPUT SIGNAL PATHS

| FUNCTION     | CONVERTER | PIN COMPLEX          | VREF           | DET ASSIGNMENT |
|--------------|-----------|----------------------|----------------|----------------|
| BUILT-IN MIC | 0X06 (6)  | 0X0D (13,B,RIGHT)    | MIC_BIAS (80%) | N/A            |
| HEADSET MIC  | 0X06 (6)  | 0X0D (13,V22,B,LEFT) | MIKEY          | MIKEY          |

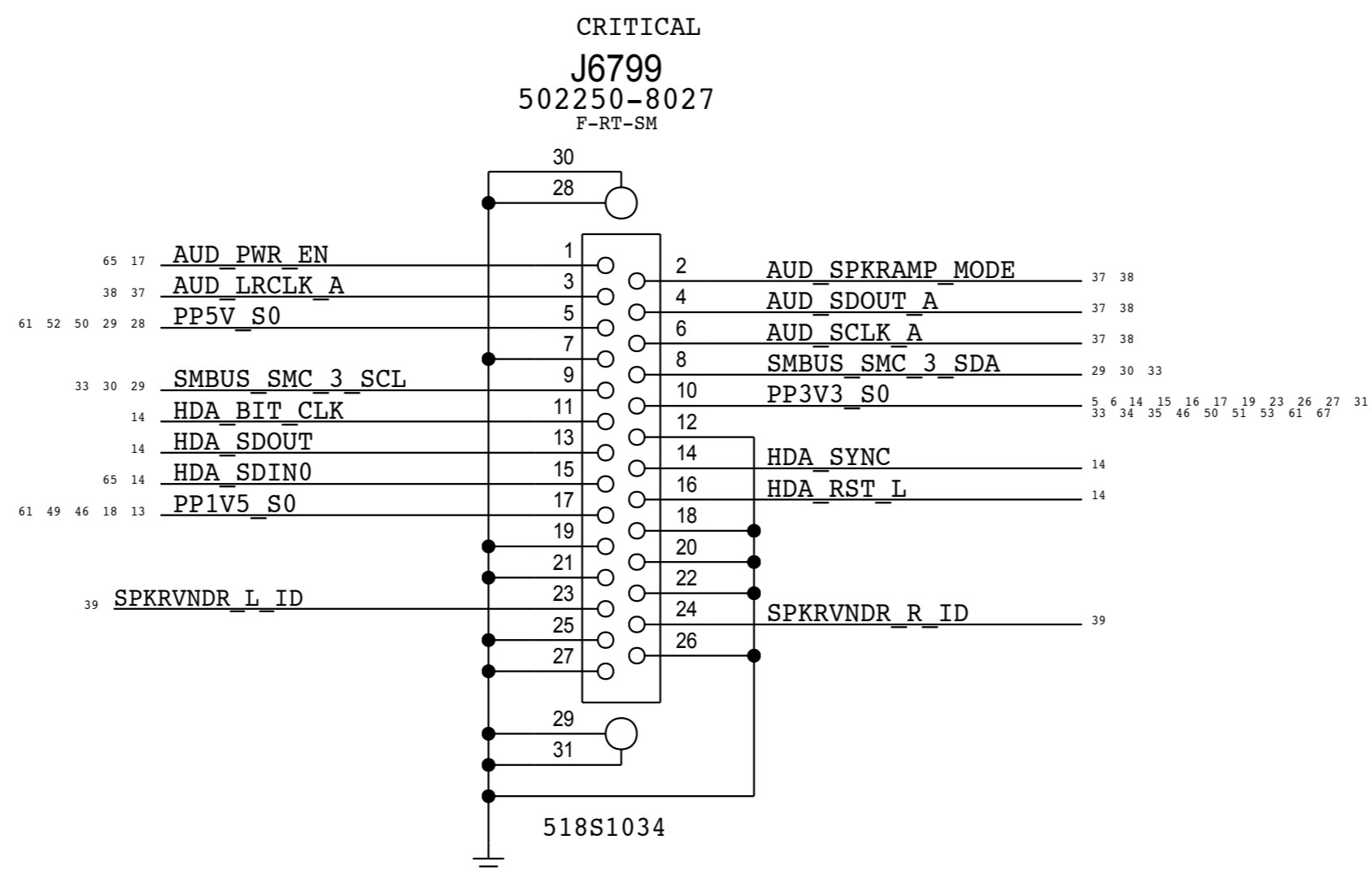
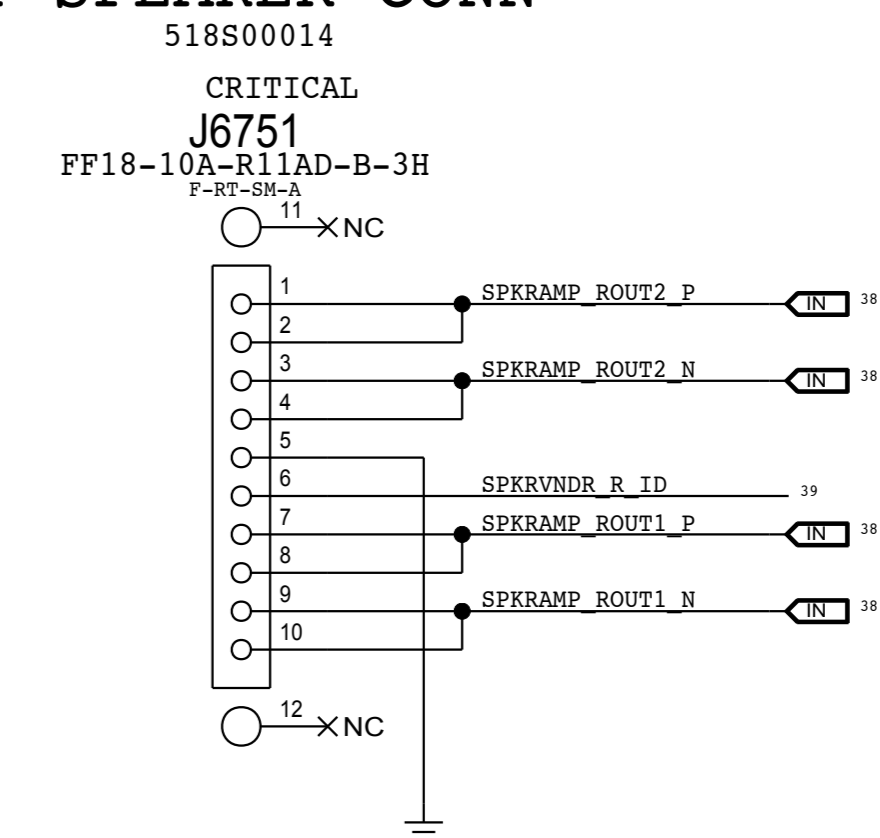
SOUTHBRIDGE RESOURCE/PIN ALLOCATIONS

| FUNCTION                     | NET NAME                 | SB GPIO/INT |
|------------------------------|--------------------------|-------------|
| PERIPHERAL/EXTRACTION DETECT | AUD_IP_PERIPHERAL_DETECT | GPIO 3      |
| MIKEY INTERRUPT              | AUD_I2C_INT_L            | GPIO 5      |
| MIKEY ENABLE                 | AUD_IPHS_SWITCH_EN       | GPIO 16     |
| MIKEY I2C BUS                | I2C_MIKEY_SDA/SCL        | PCH SMBUS 0 |

LEFT SPEAKER CONN



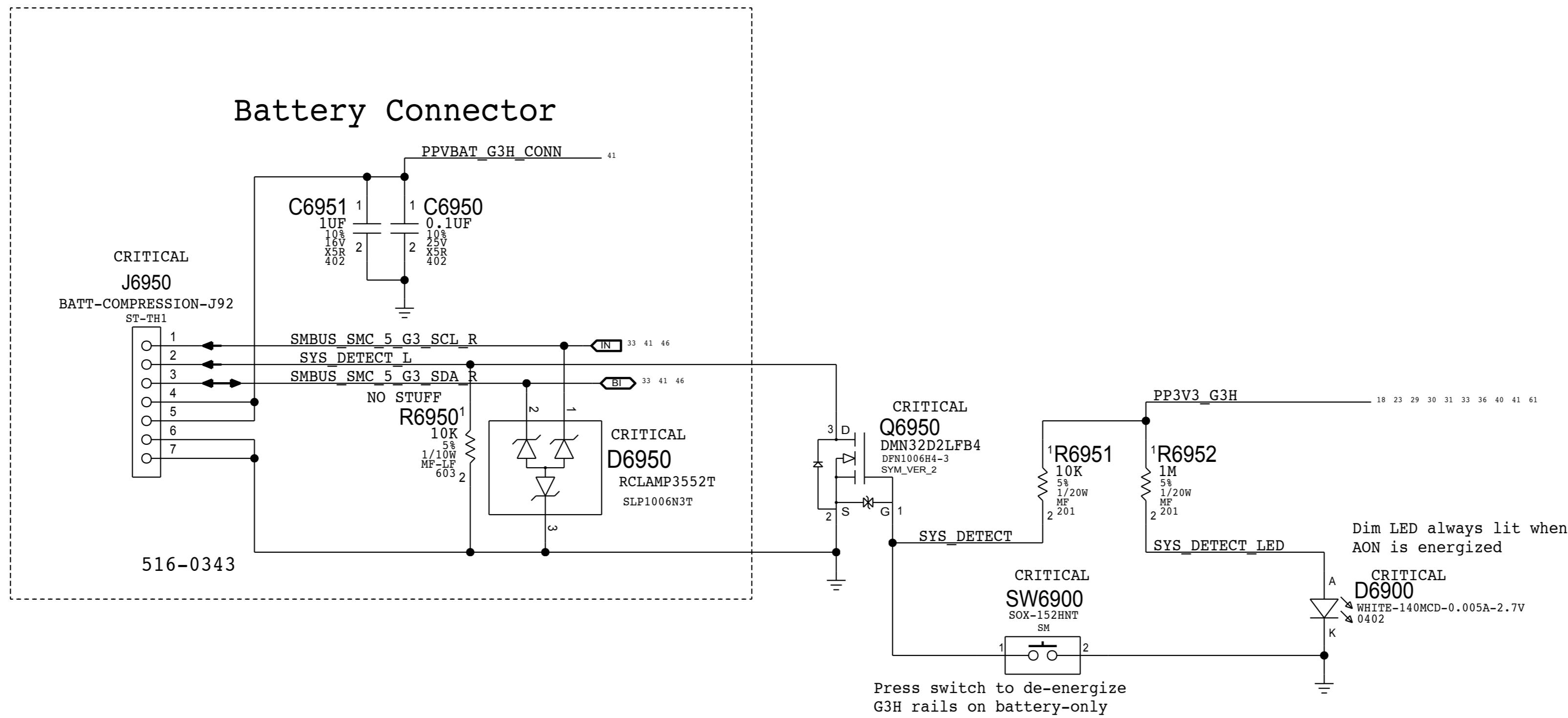
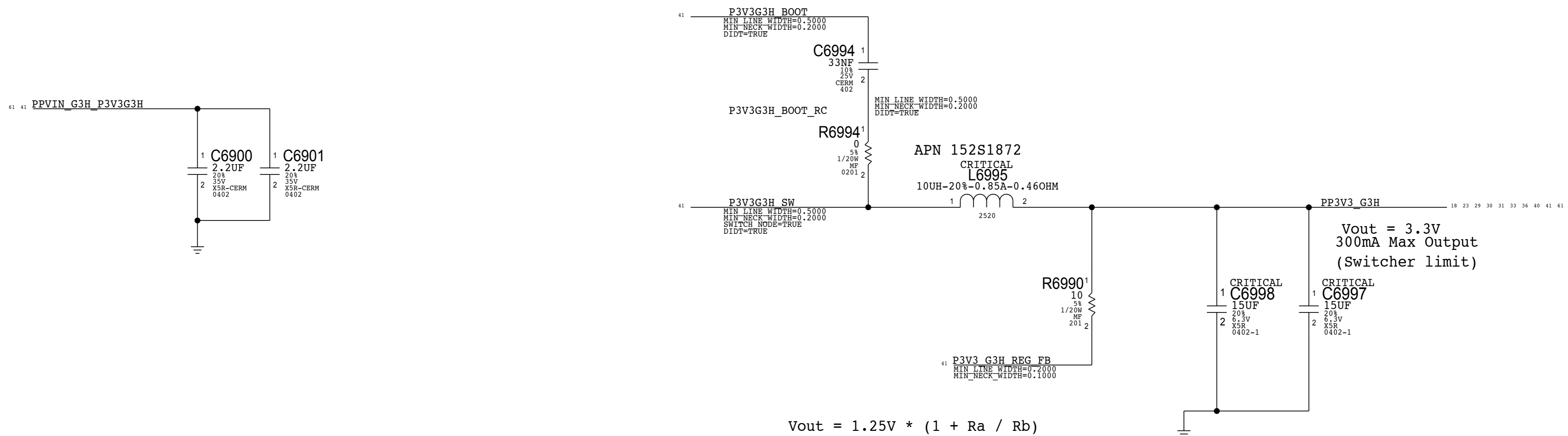
RIGHT SPEAKER CONN



RIO FLEX CONN

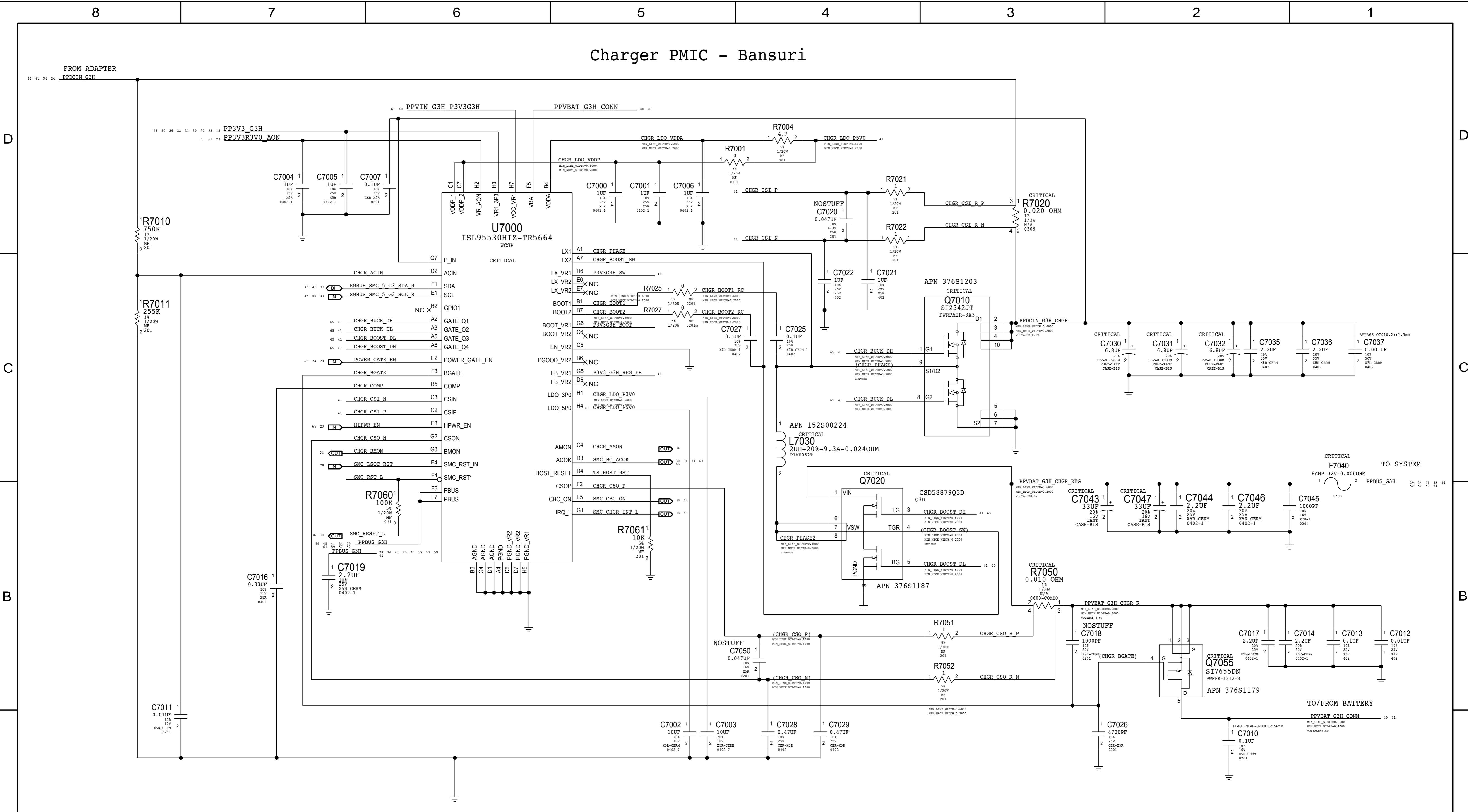
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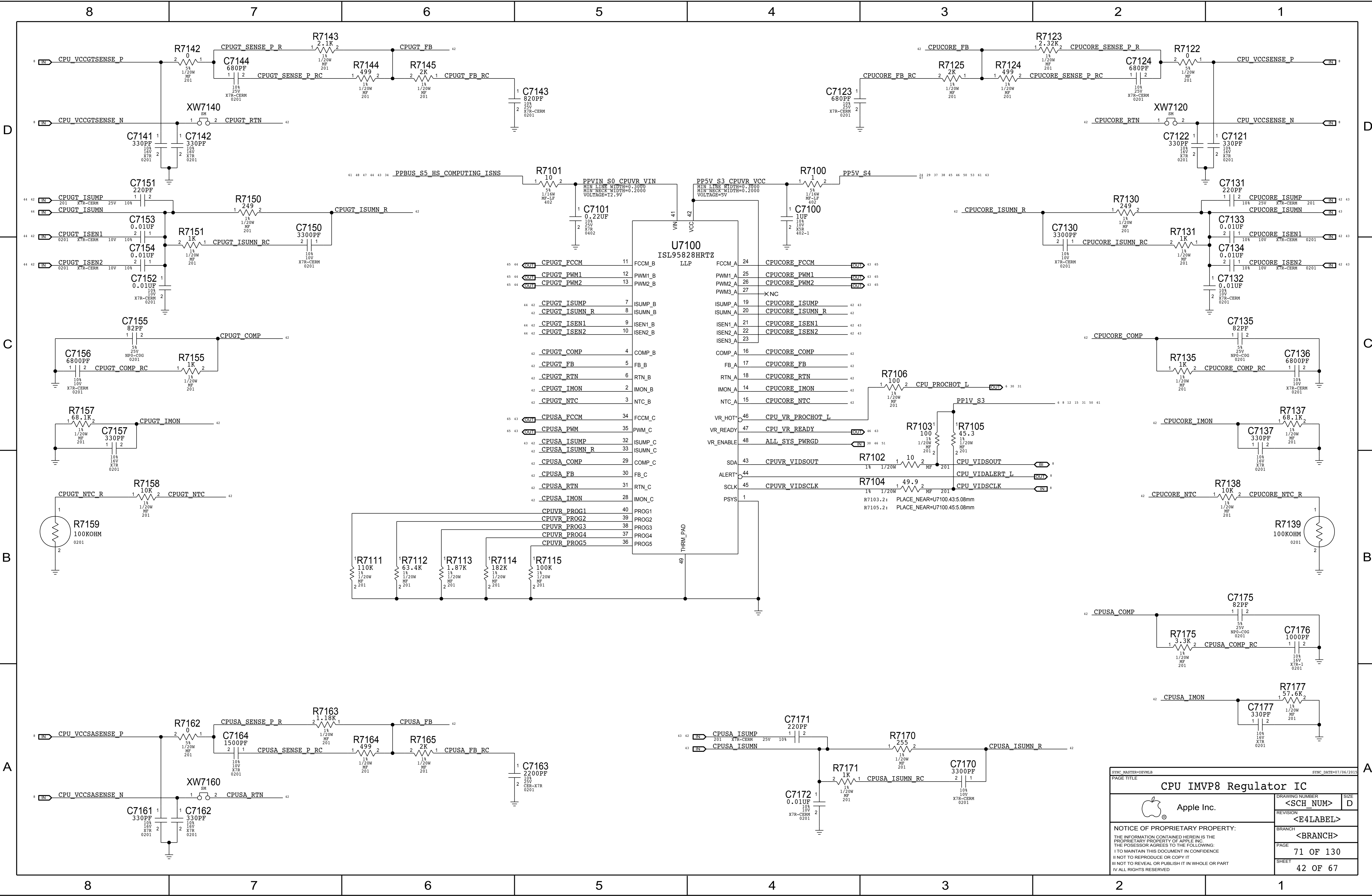
### 3.3V G3H VR - Bansuri



|   |  |                      |           |
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| Battery Connector & 3.3V G3Hot  |  | DRAWING NUMBER       | SIZE      |
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# Charger PMIC - Bansuri





|   |  |                      |           |
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| PAGE TITLE  |  |                      |           |
| <b>CPU IMVP8 Regulator IC</b>   |  | DRAWING NUMBER       | SIZE      |
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|   |  | PAGE                 | 71 OF 130 |
|   |  | SHEET                | 42 OF 67  |

Note:Vcore design requires 4x POSCAPs  
3x shared from other VRs

### Phase 1 CPU VCORE

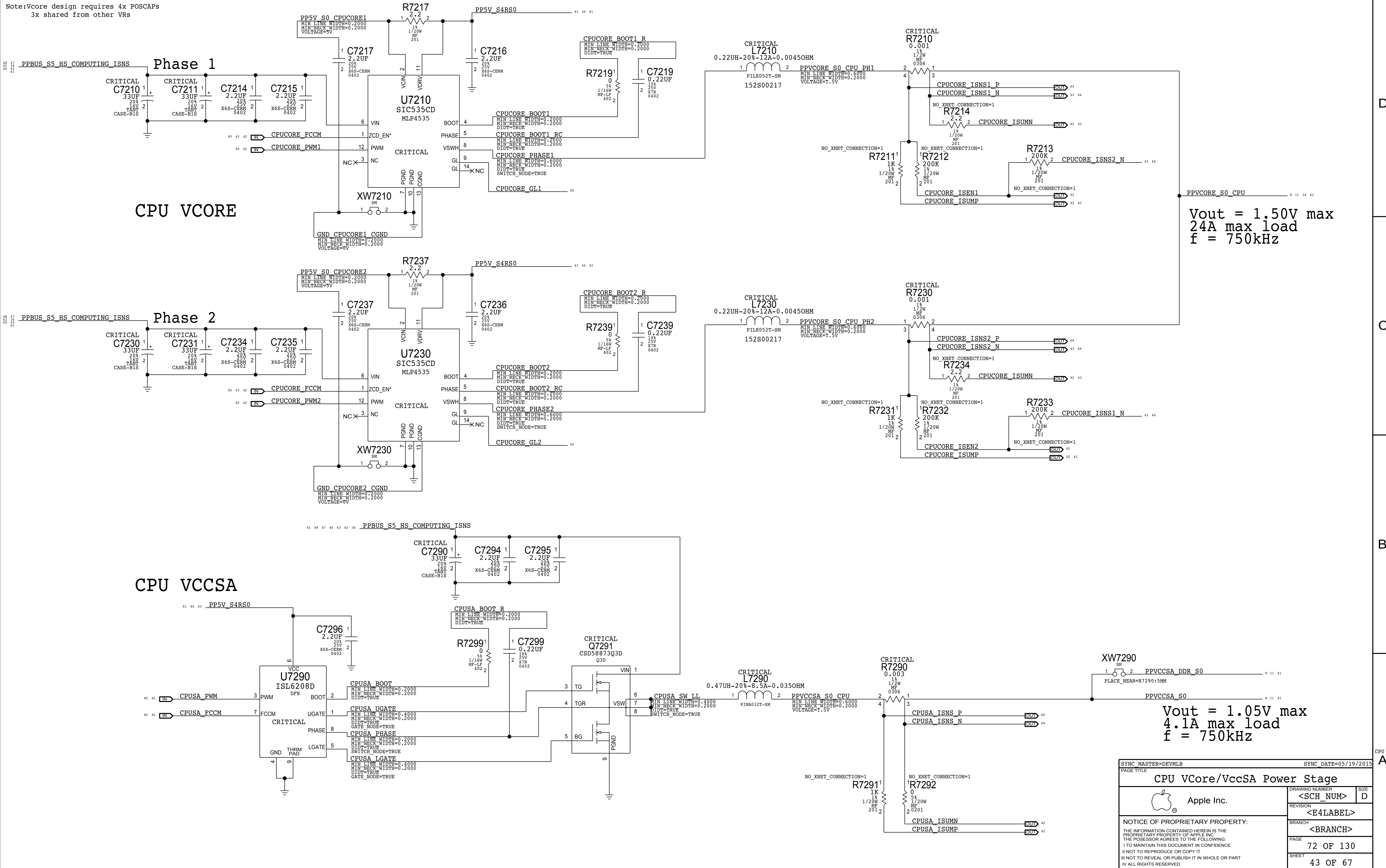
### Phase 2 CPU VCORE

### CPU VCCSA

Vout = 1.50V max  
24A max load  
f = 750kHz

Vout = 1.05V max  
4.1A max load  
f = 750kHz

|  |  |                      |           |
|--|--|----------------------|-----------|
| SYNC_MASTER=DEVMLB   |  | SYNC_DATE=05/19/2015 |           |
| PAGE TITLE   |  |                      |           |
| CPU VCore/VccSA Power Stage  |  | DRAWING NUMBER       | SIZE      |
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|  |  | SHEET                | 43 OF 67  |





D

C

B

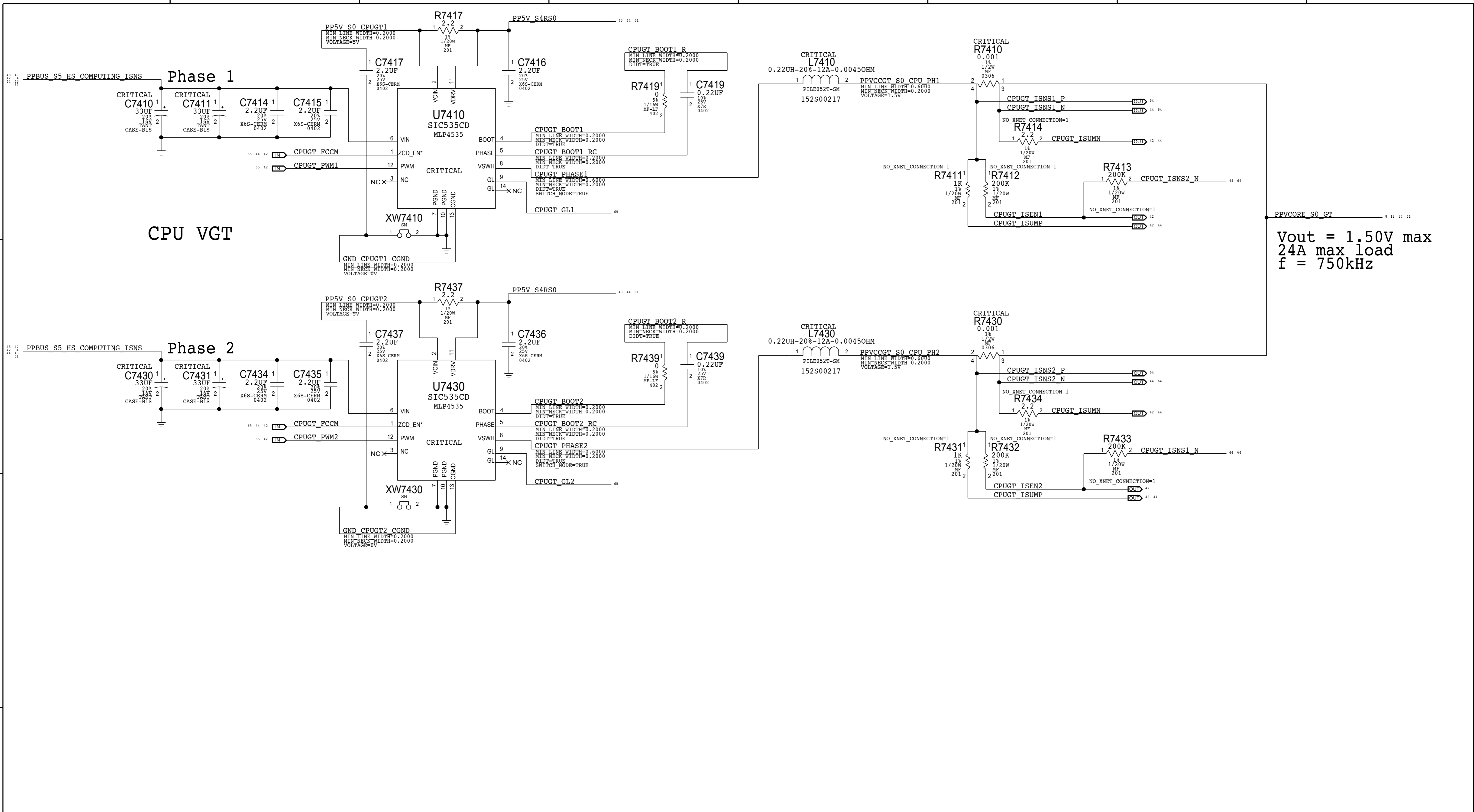
A

D

C

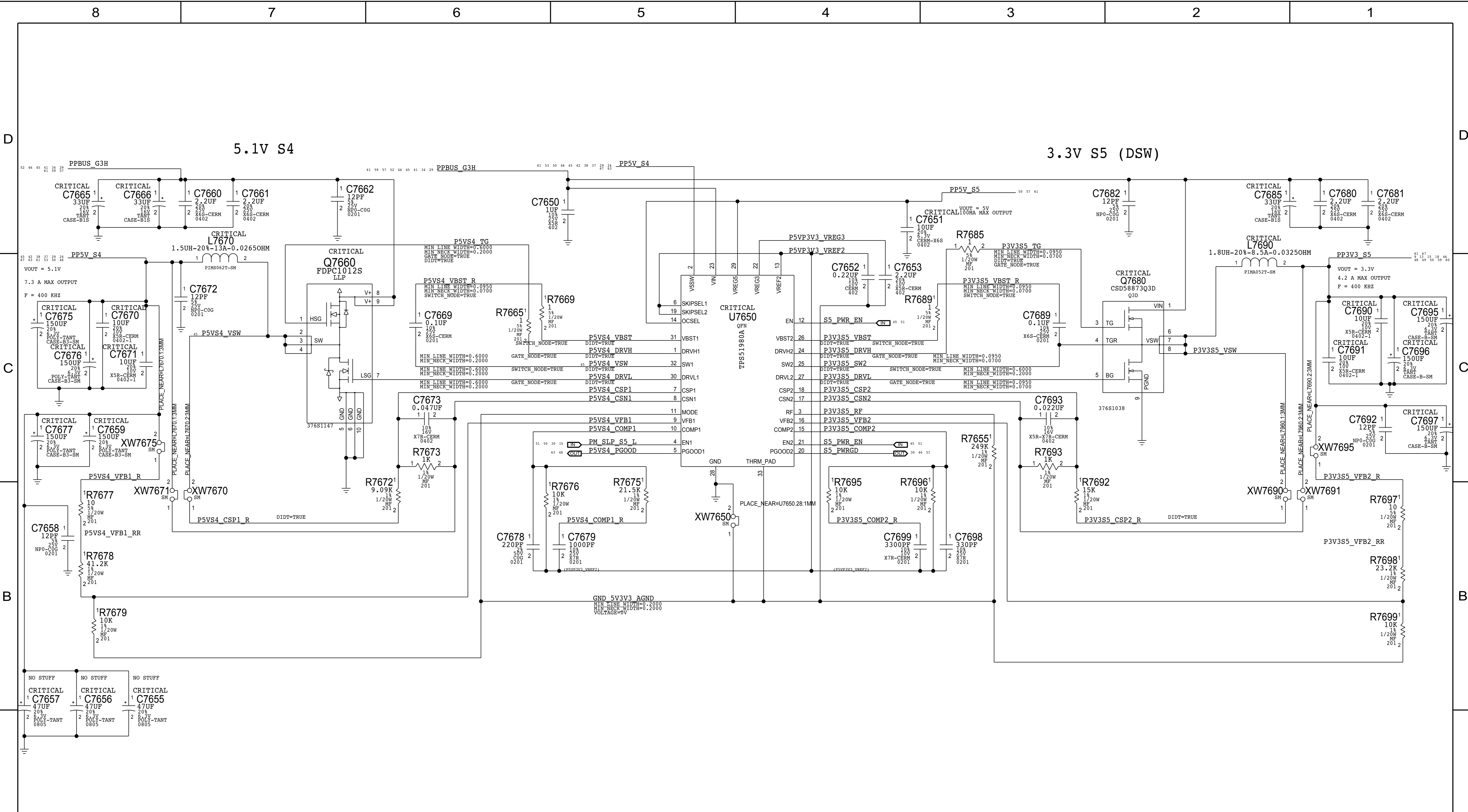
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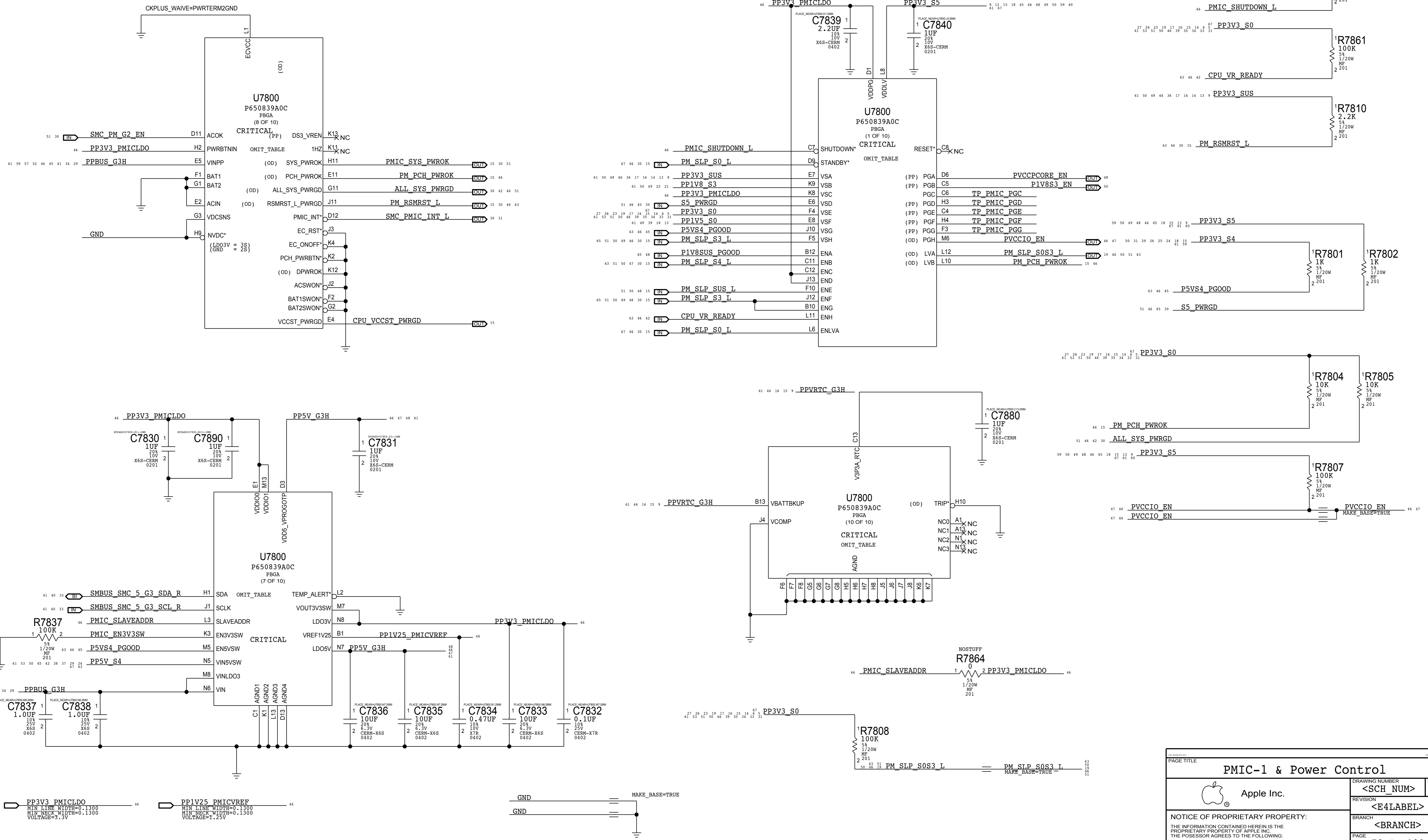


Vout = 1.50V max  
24A max load  
f = 750kHz

|   |                |                      |           |
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|   |                | PAGE                 | 74 OF 130 |
|   |                | SHEET                | 44 OF 67  |
|   |                |                      |           |



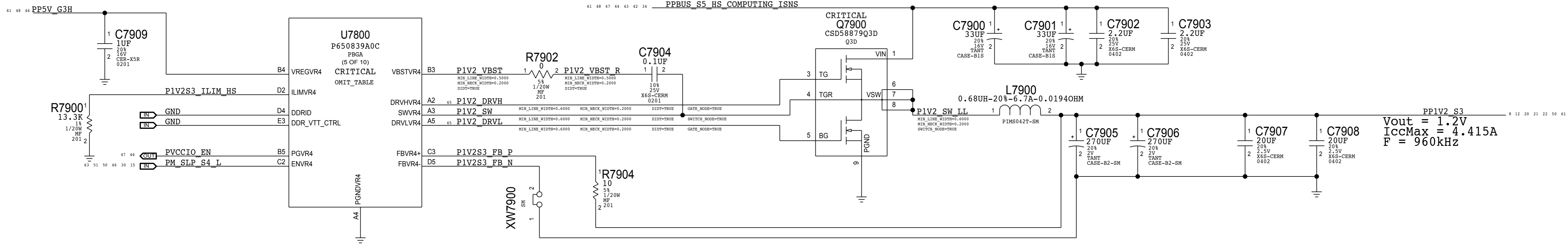
# BANJO - PMIC Control



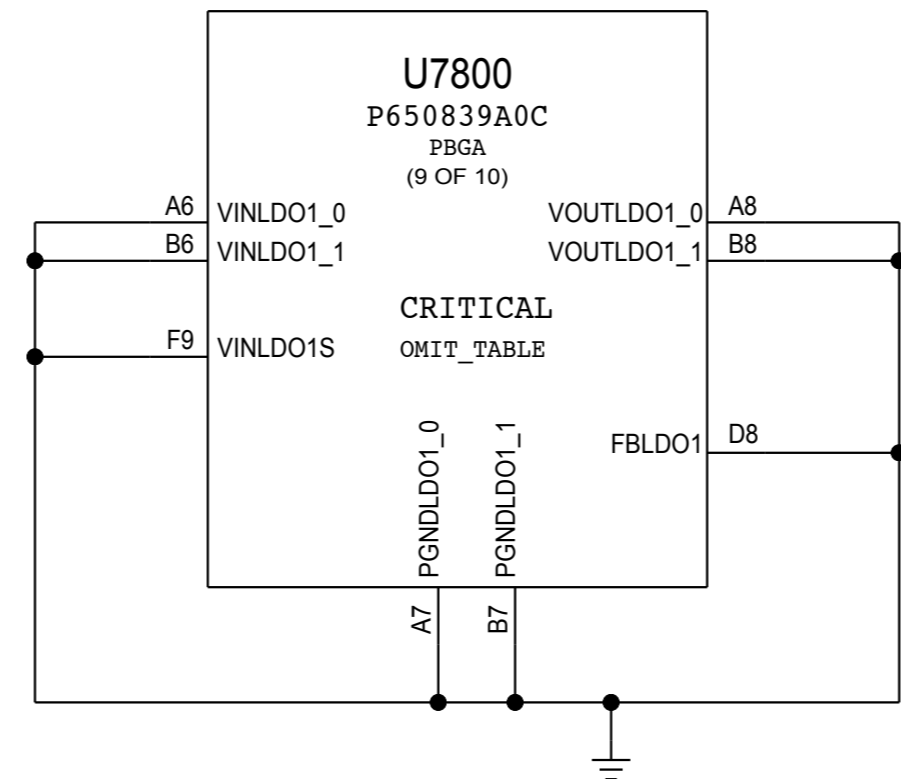
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| PAGE           |  | 78 OF 130              |      |
| SHEET          |  | 46 OF 67               |      |

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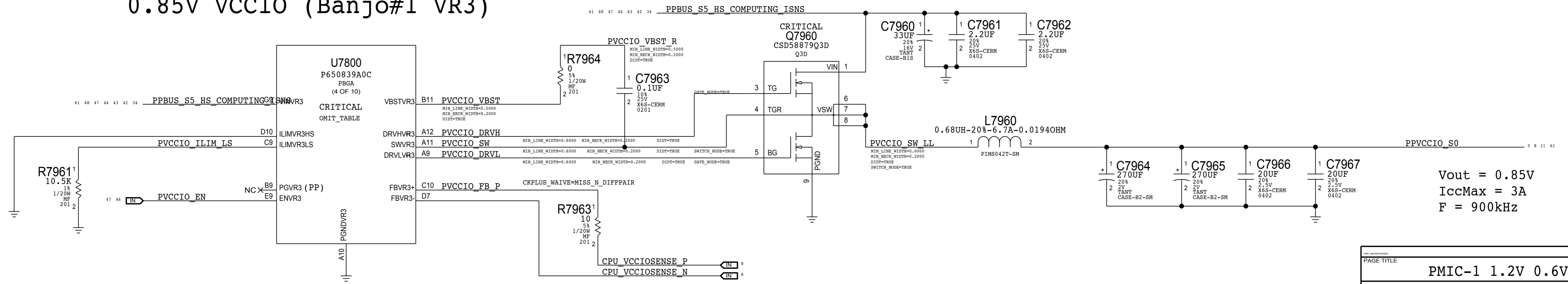
### 1.2V VDDQ (Banjo#1 VR4)



### 0.6V VTT (Banjo#1 LDO1)

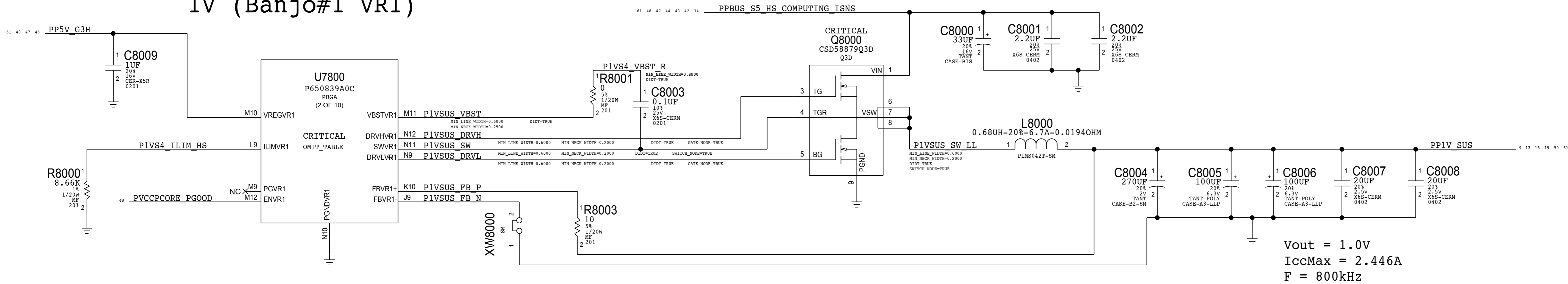


### 0.85V VCCIO (Banjo#1 VR3)

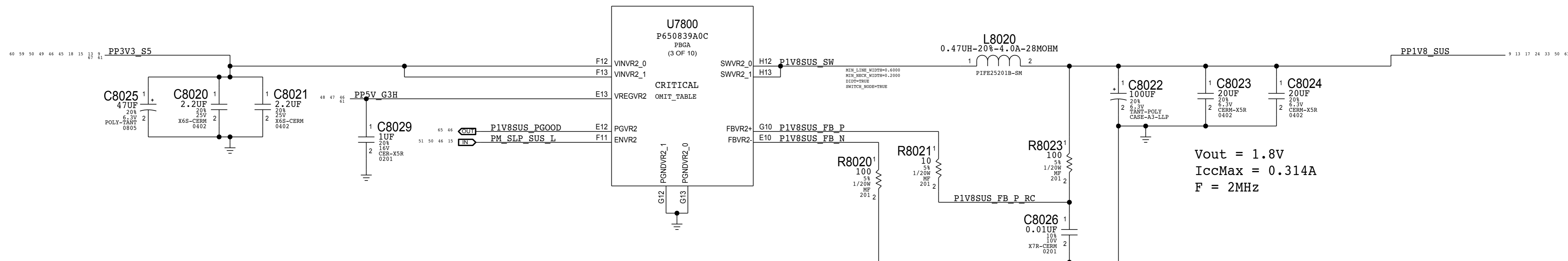


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| Apple Inc.   |  | REVISION       |  | <E4LABEL> |
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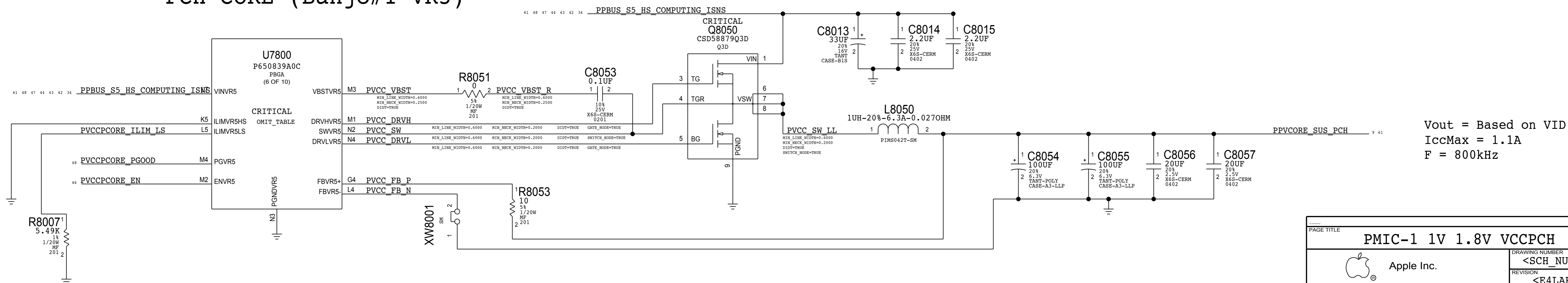
### 1V (Banjo#1 VR1)



### 1.8V (Banjo#1 VR2)



### PCH CORE (Banjo#1 VR5)

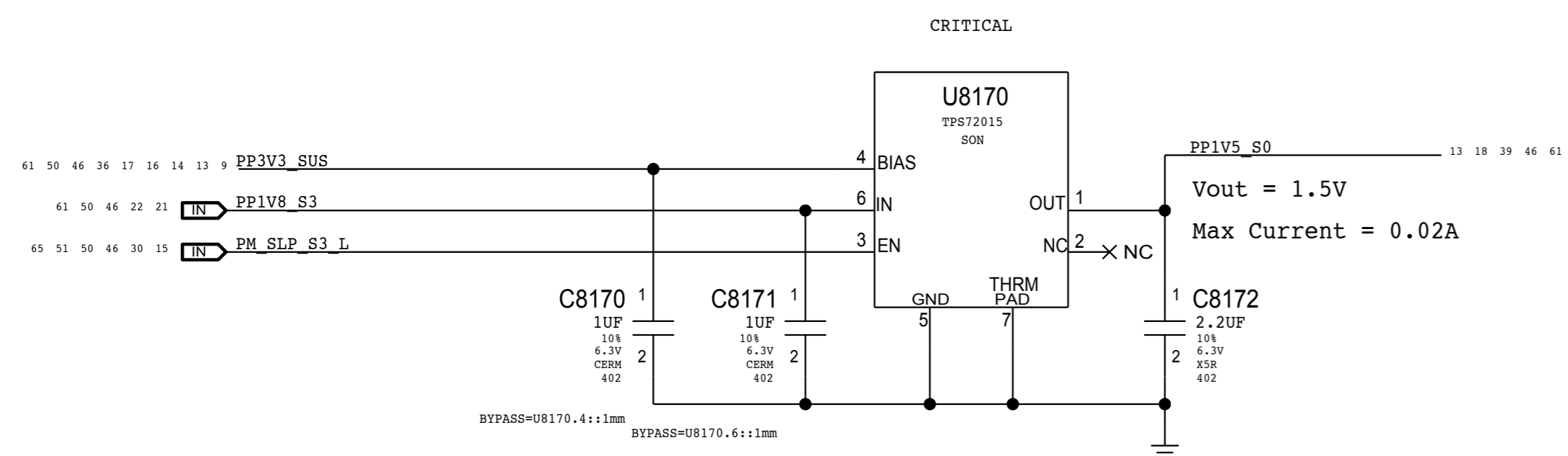


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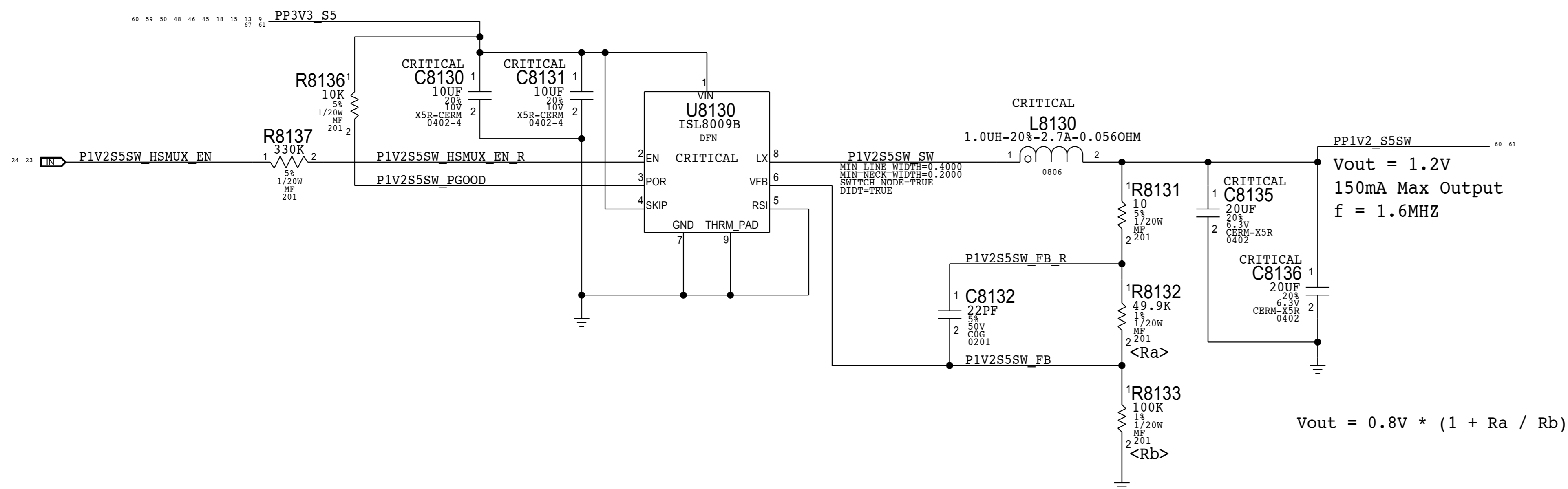
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### 1.5V S0 LDO

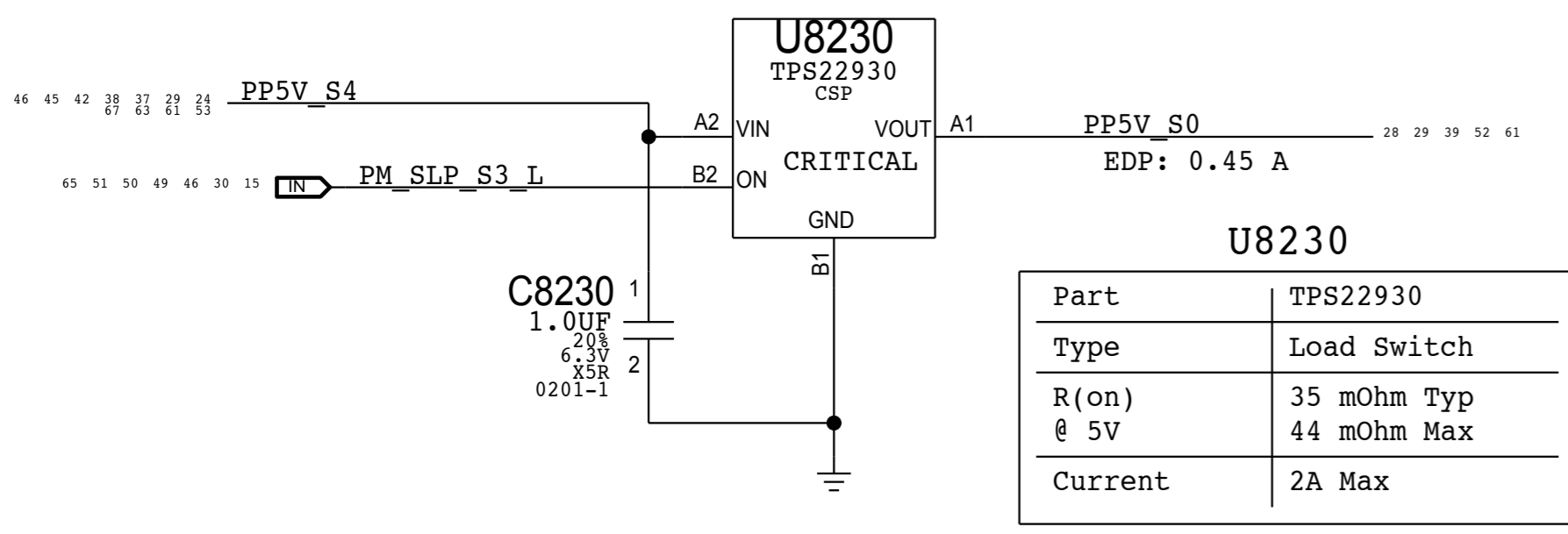


### 1.2V S5 USB-C HS Mux

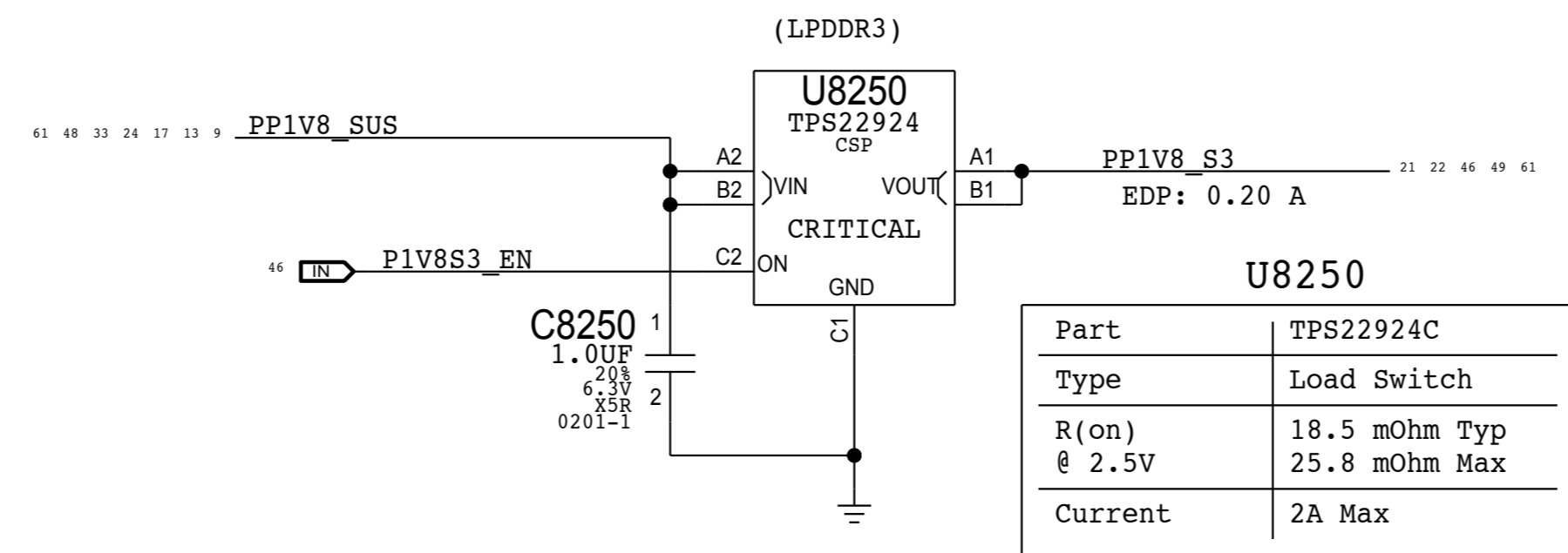


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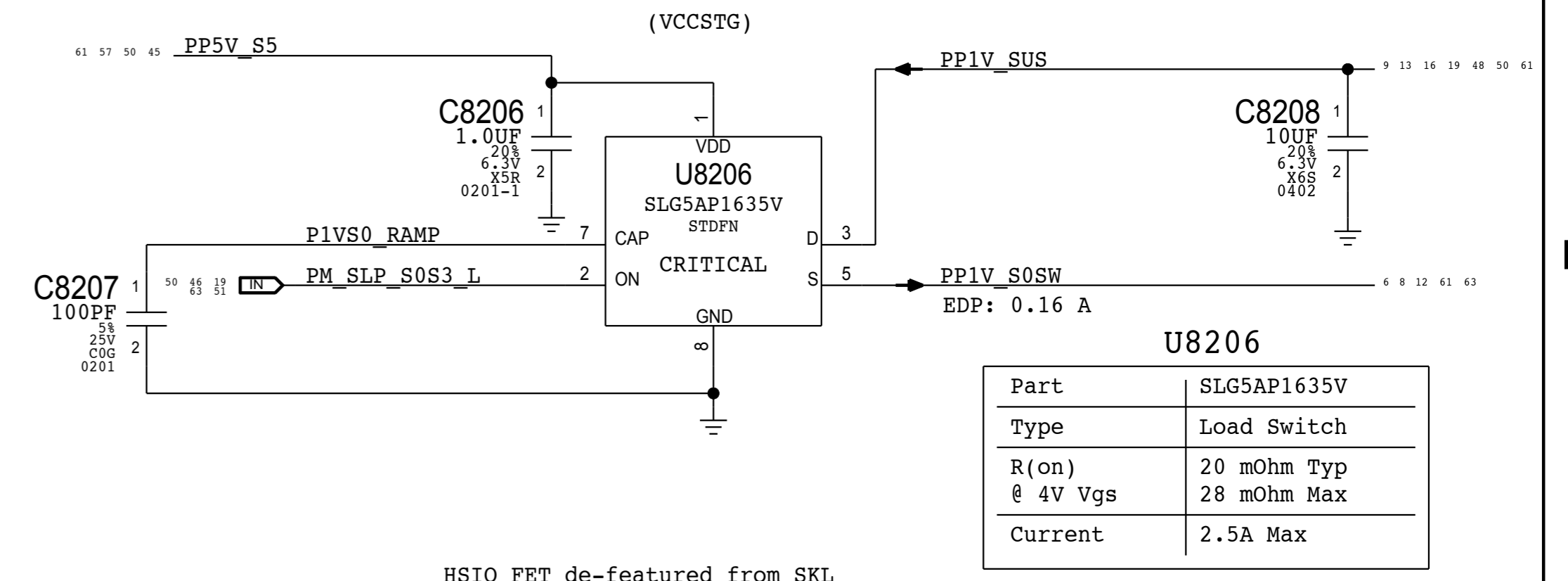
### 5V S0 Switch



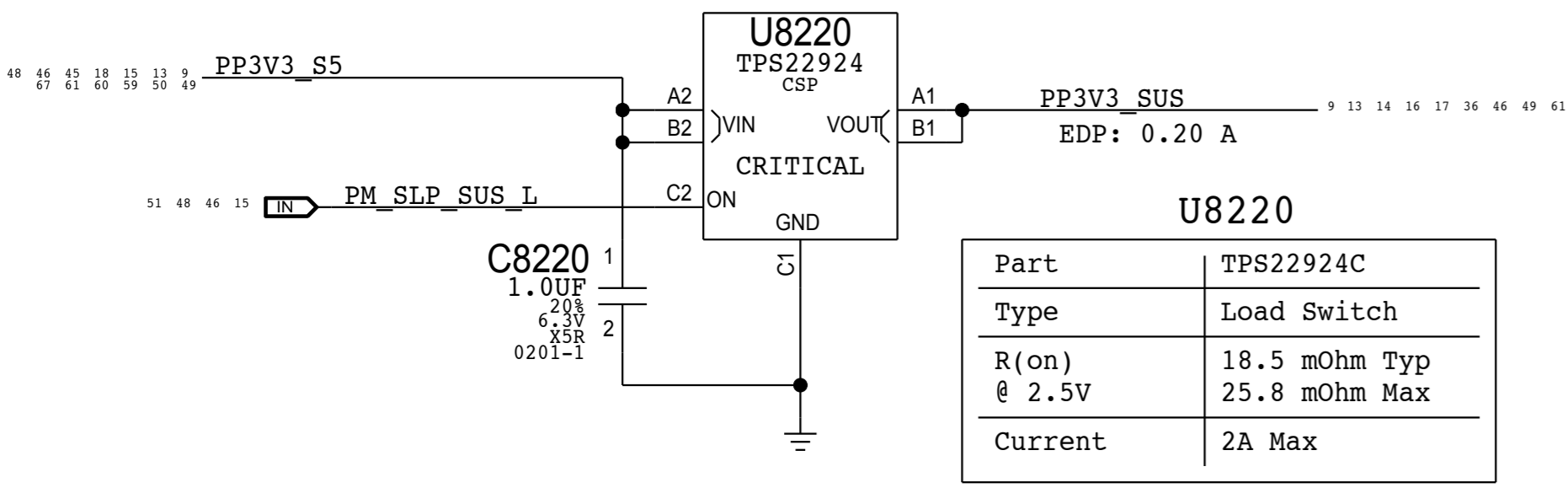
### 1.8V S3 Switch



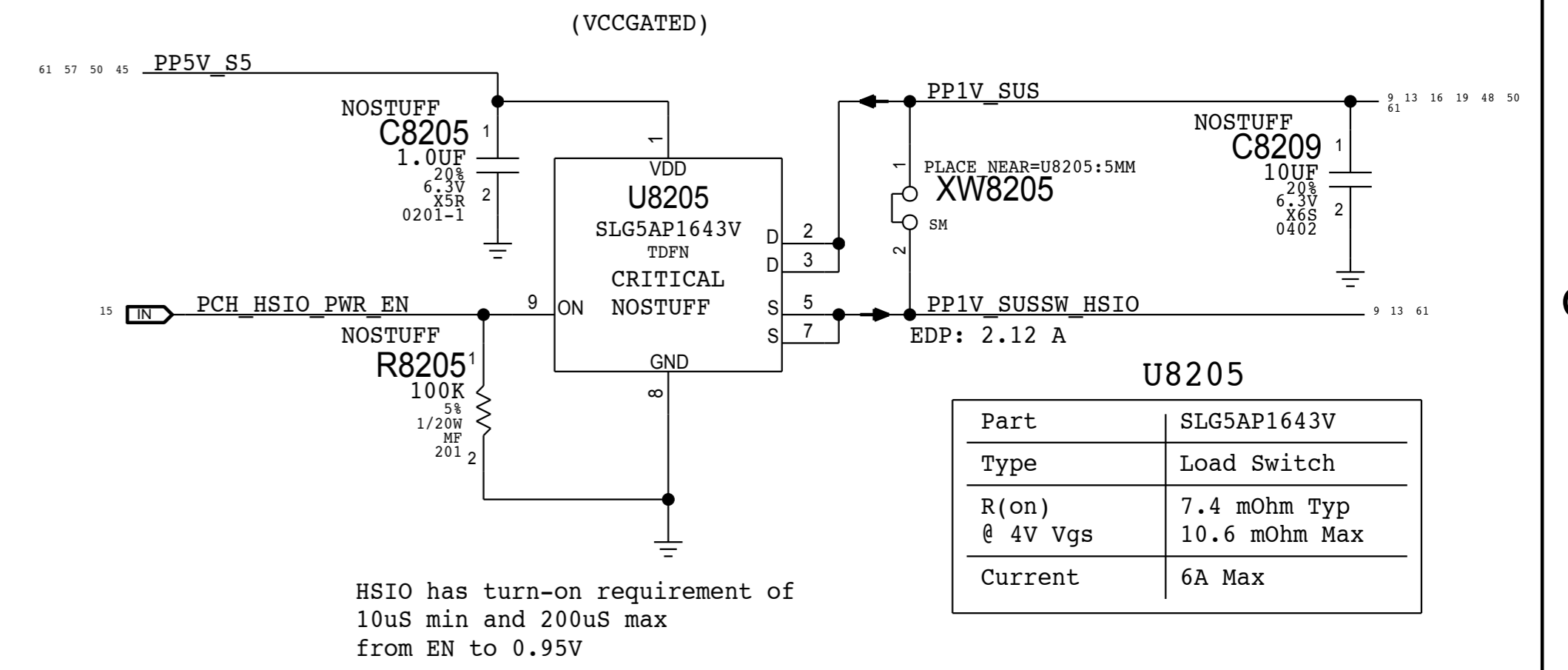
### 1.0V S0SW Switch



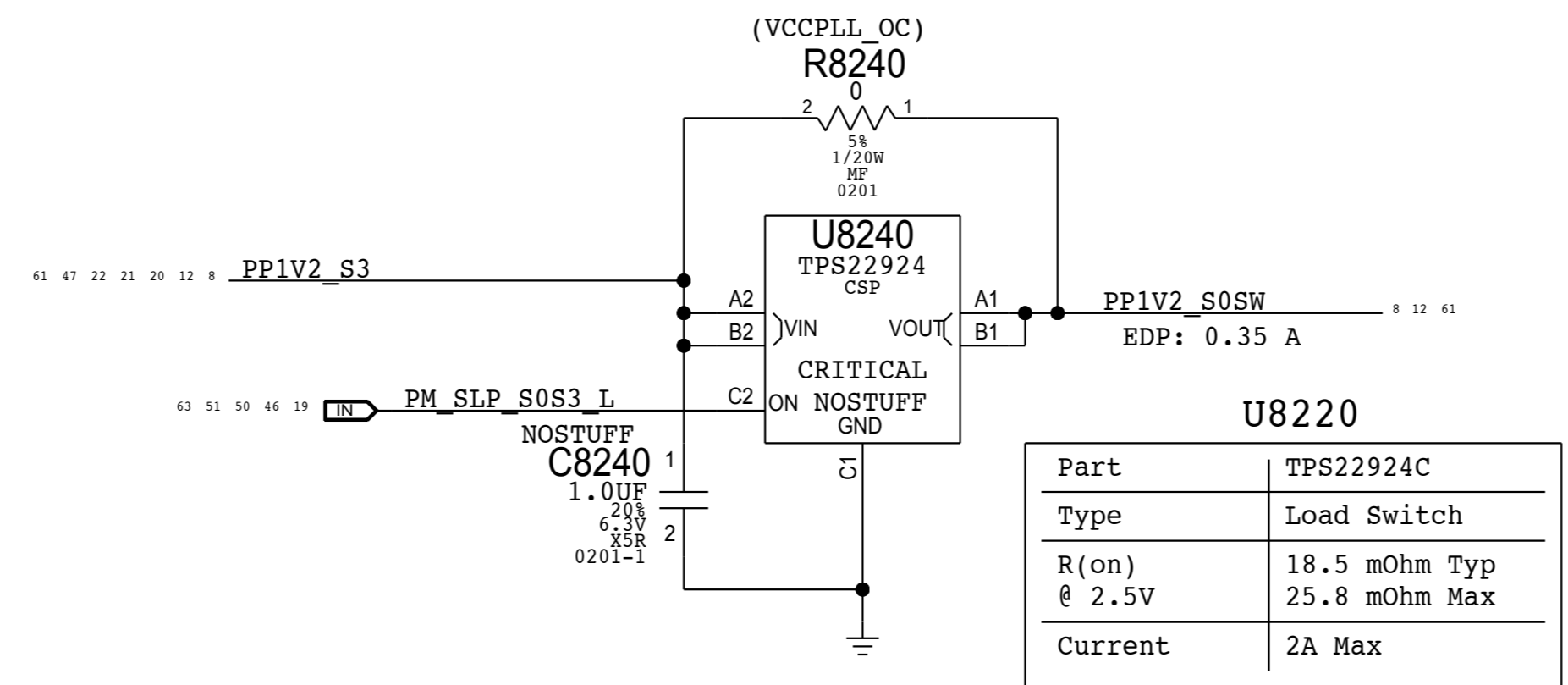
### 3.3V SUS Switch



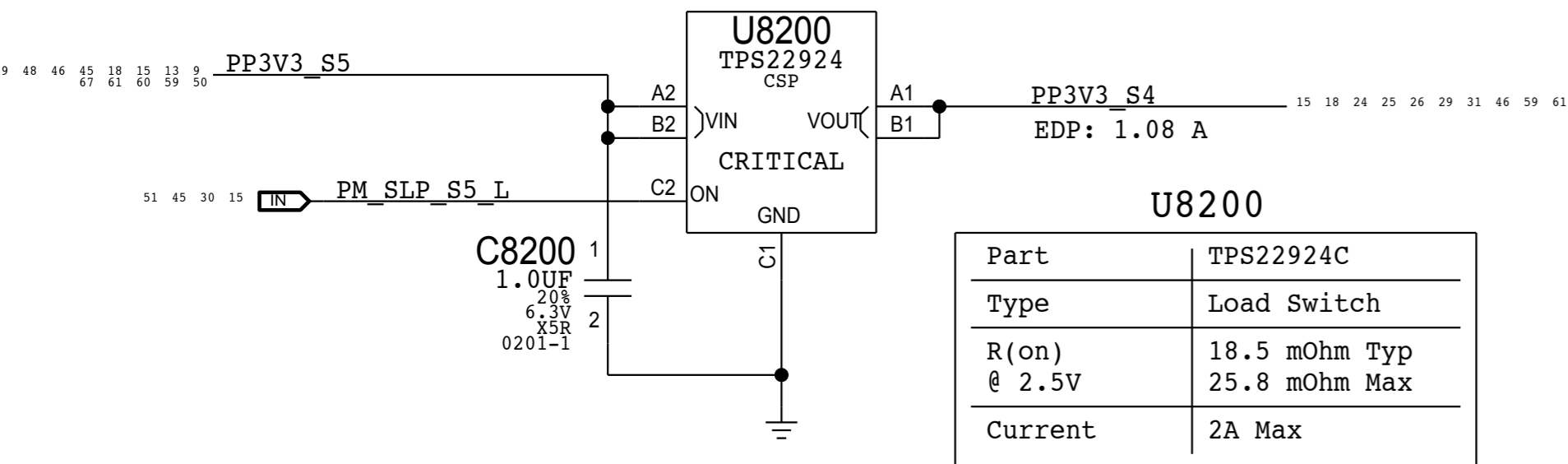
### 1.0V SUSSW HSIO Switch



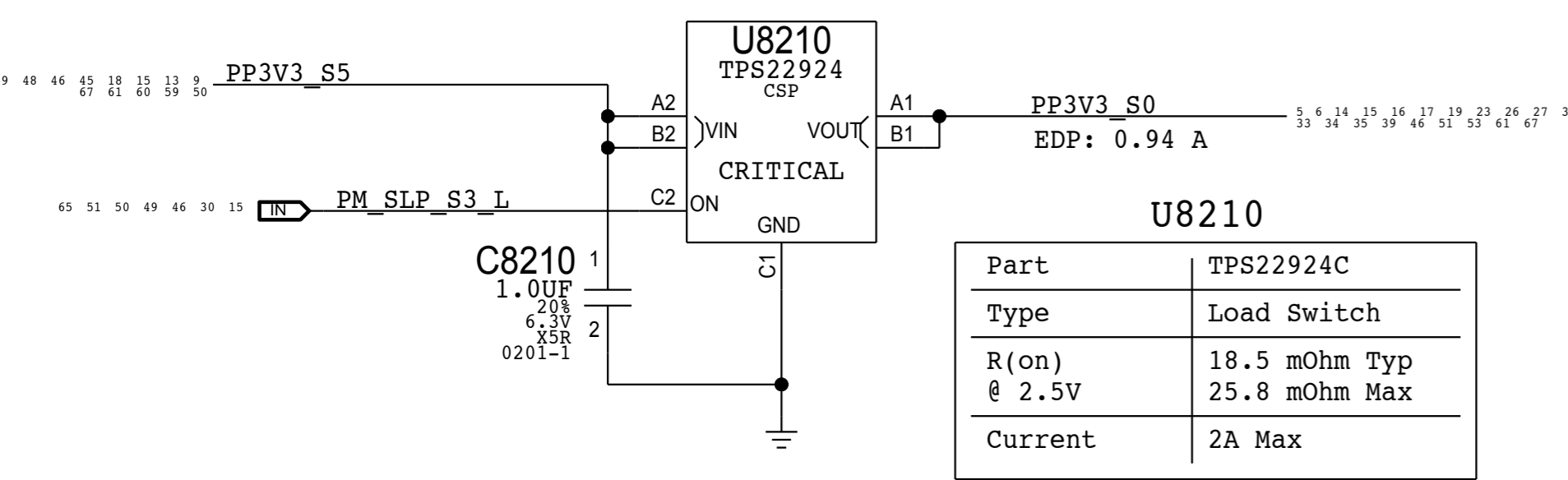
### 1.2V S0SW Switch



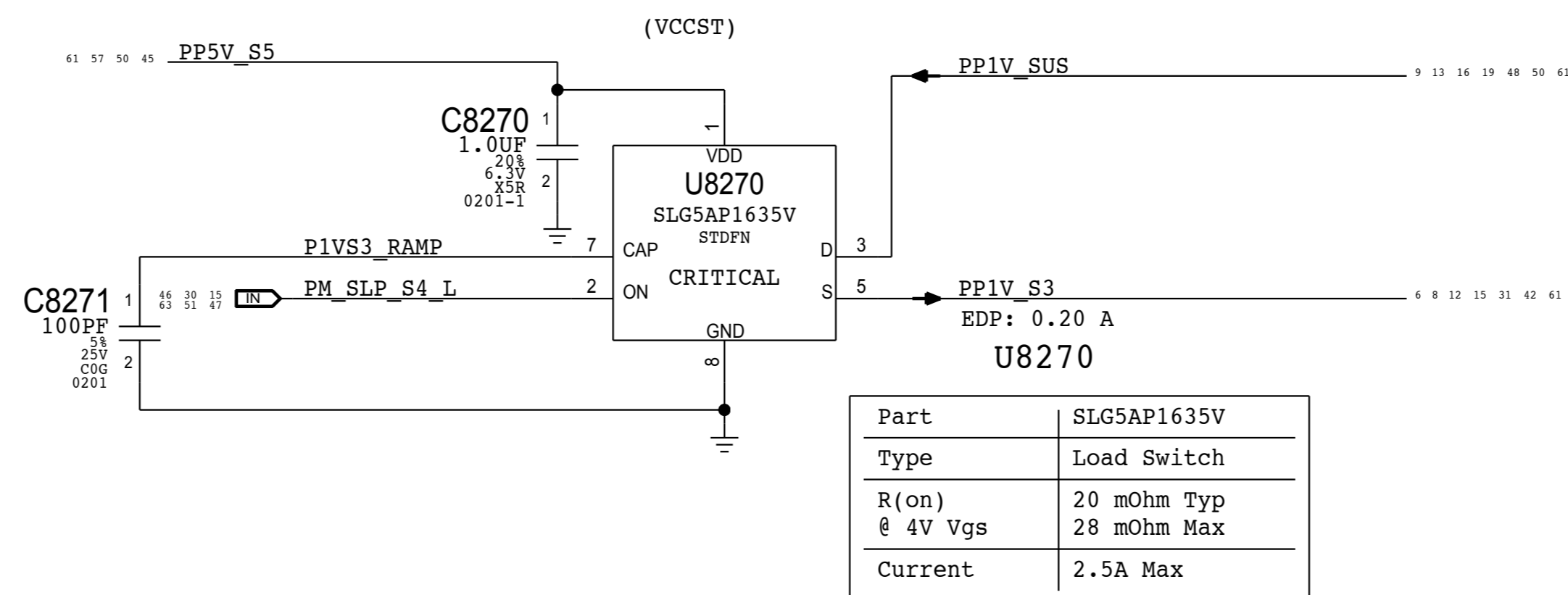
### 3.3V S4 Switch



### 3.3V S0 Switch



### 1.0V S3 Switch

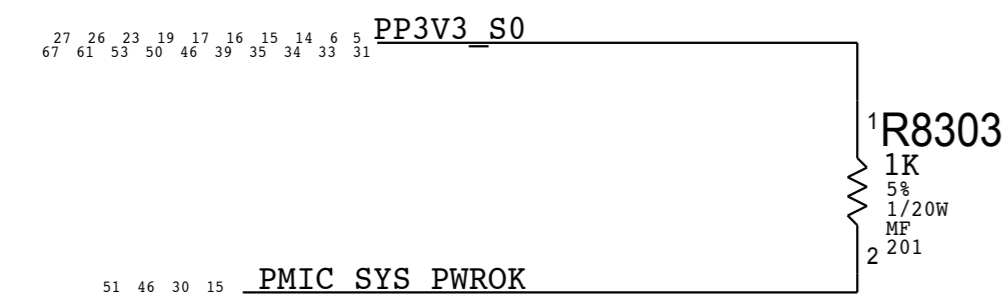
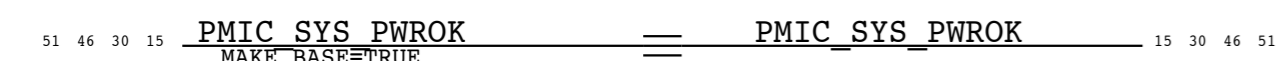
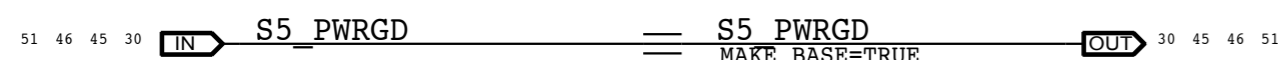


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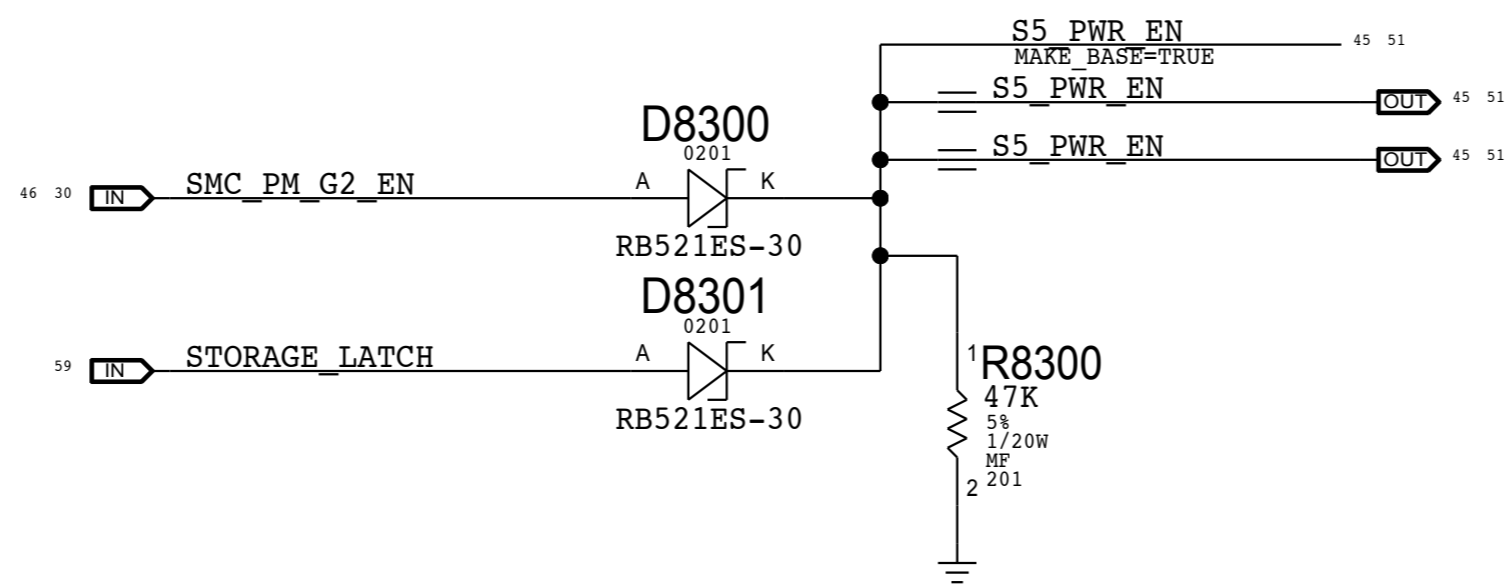
Mobile System Power State Table

| State                 | SMC_ADAPTER_EN | SMC_PM_G2_ENABLE | PM_SUS_EN | PM_SLP_S5_L | PM_SLP_S4_L | PM_SLP_S3_L |
|-----------------------|----------------|------------------|-----------|-------------|-------------|-------------|
| Run (S0)              | X              | 1                | 1         | 1           | 1           | 1           |
| Sleep (S1AC)          | 1              | 1                | 1         | 1           | 1           | 0           |
| Sleep (S3)            | 0              | 1                | 1         | 1           | 1           | 0           |
| Deep Sleep (S4)       | 0              | 1                | 0         | 1           | 0           | 0           |
| Deep Sleep (S5)       | 0              | 1                | 0         | 0           | 0           | 0           |
| Battery Off (G3NotAC) | toggle 3Hz     | 0                | 0         | 0           | 0           | 0           |
| Battery Off (G3Not)   | 1              | 0                | 0         | 0           | 0           | 0           |

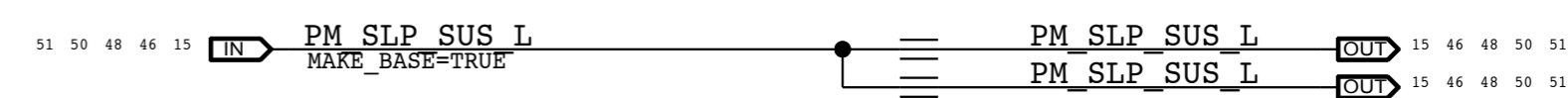
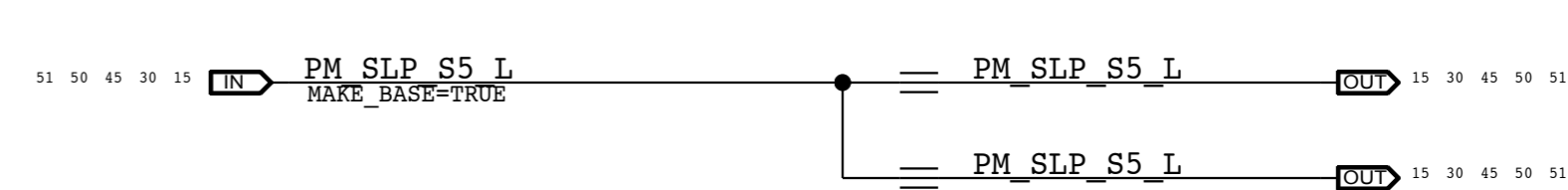
S5 Power Good (3.3V DSW PGOOD based)



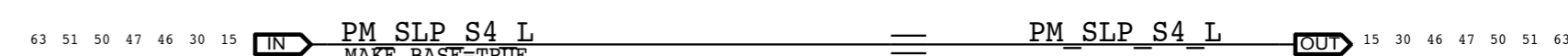
S5 Enables



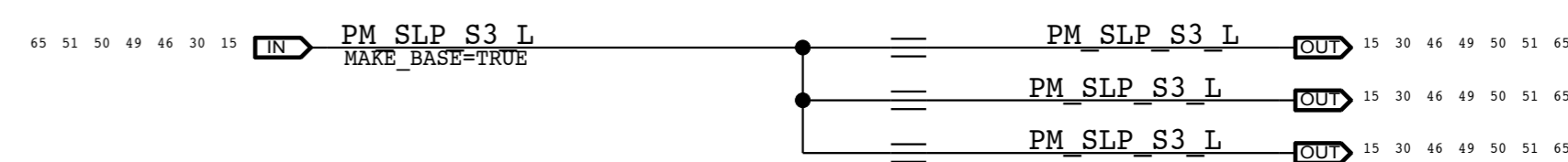
SUS & S4 Enables



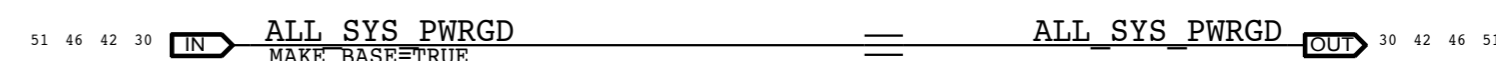
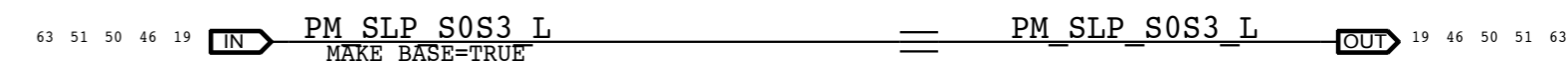
S3 Enables



S0 Enables



S0I Enables



Power Control

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D

C

B

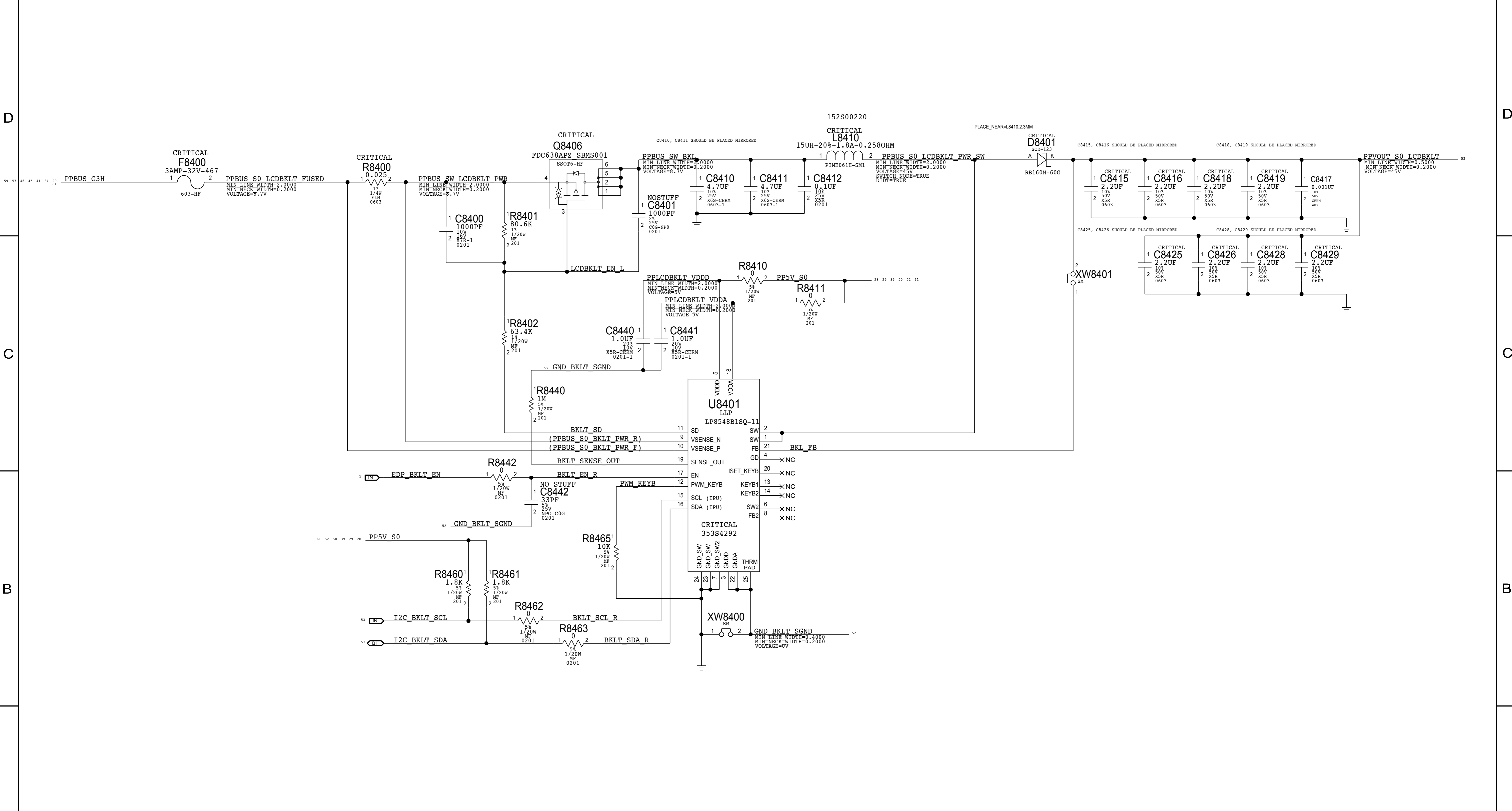
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D

C

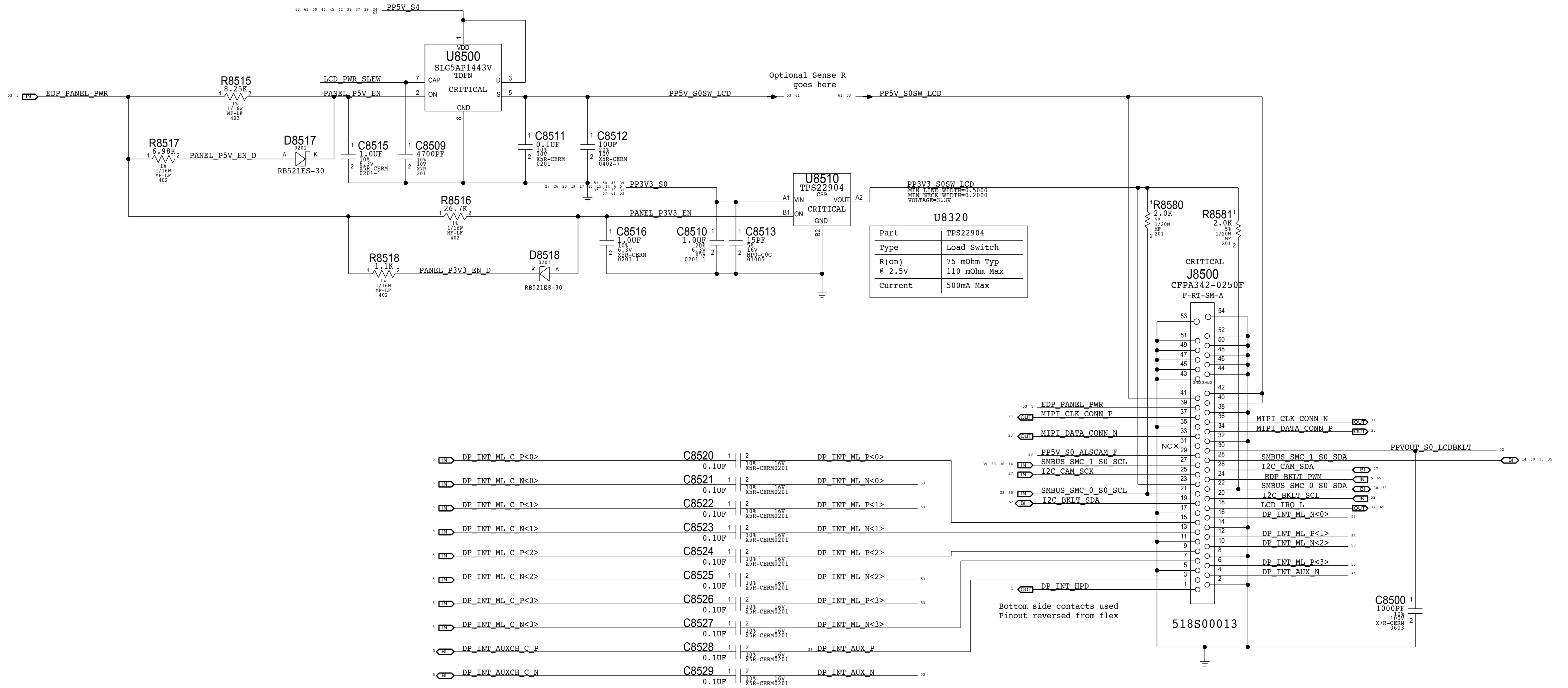
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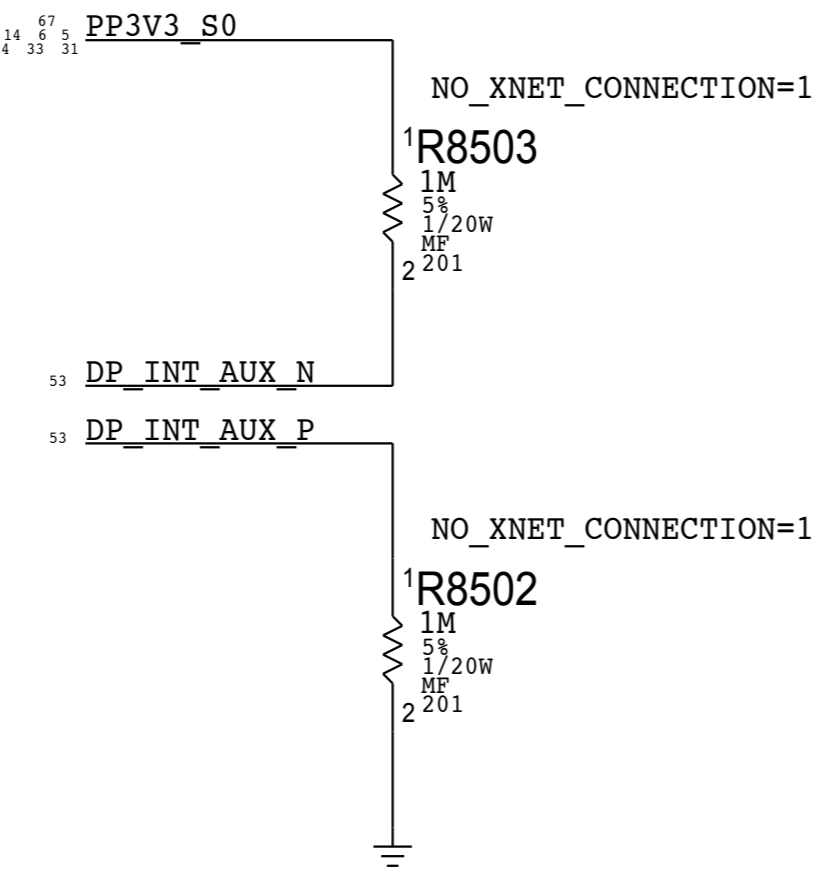
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| <b>LCD Backlight Driver</b>   |  |                      |           |
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|   |  | <BRANCH>             |           |
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# LCD PANEL INTERFACE (eDP) + Camera (MIPI)



| Part         | TPS22904                    |
|--------------|-----------------------------|
| Type         | Load Switch                 |
| R(on) @ 2.5V | 75 mOhm Typ<br>110 mOhm Max |
| Current      | 500mA Max                   |

## LCD Panel HPD & AUX strapping



|   |  |                      |           |
|---|--|----------------------|-----------|
| SYNC_MASTER=DEVMLB  |  | SYNC_DATE=05/11/2015 |           |
| PAGE TITLE  |  |                      |           |
| <b>eDP Display Connector</b>  |  |                      |           |
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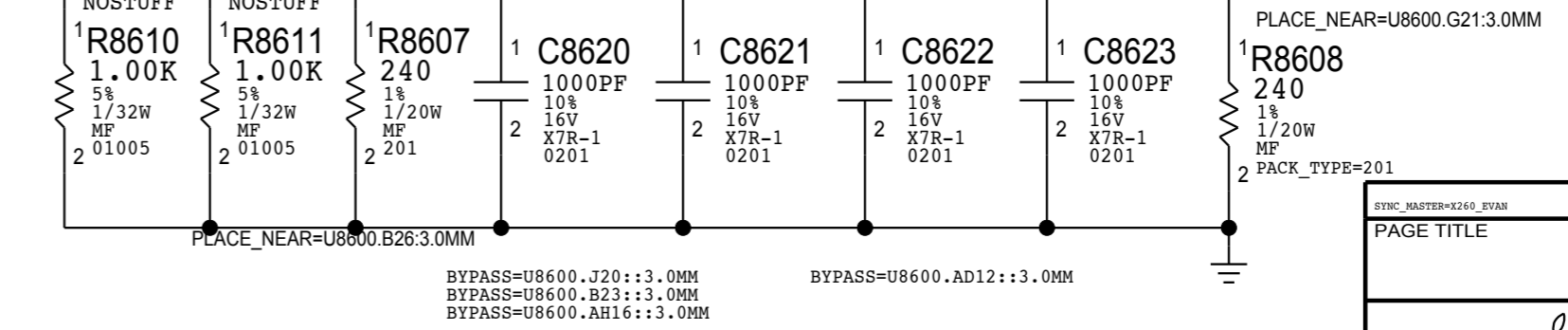
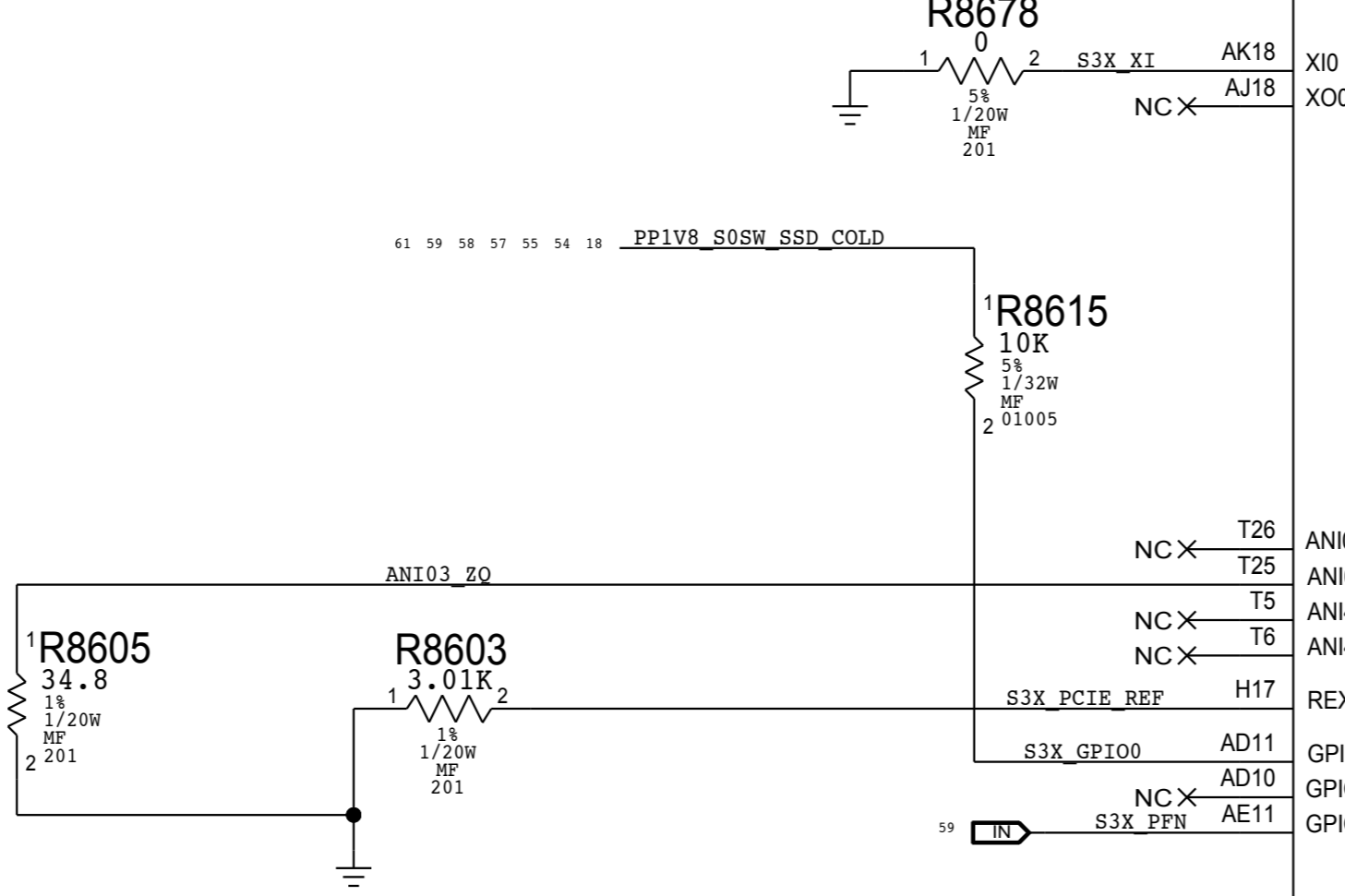
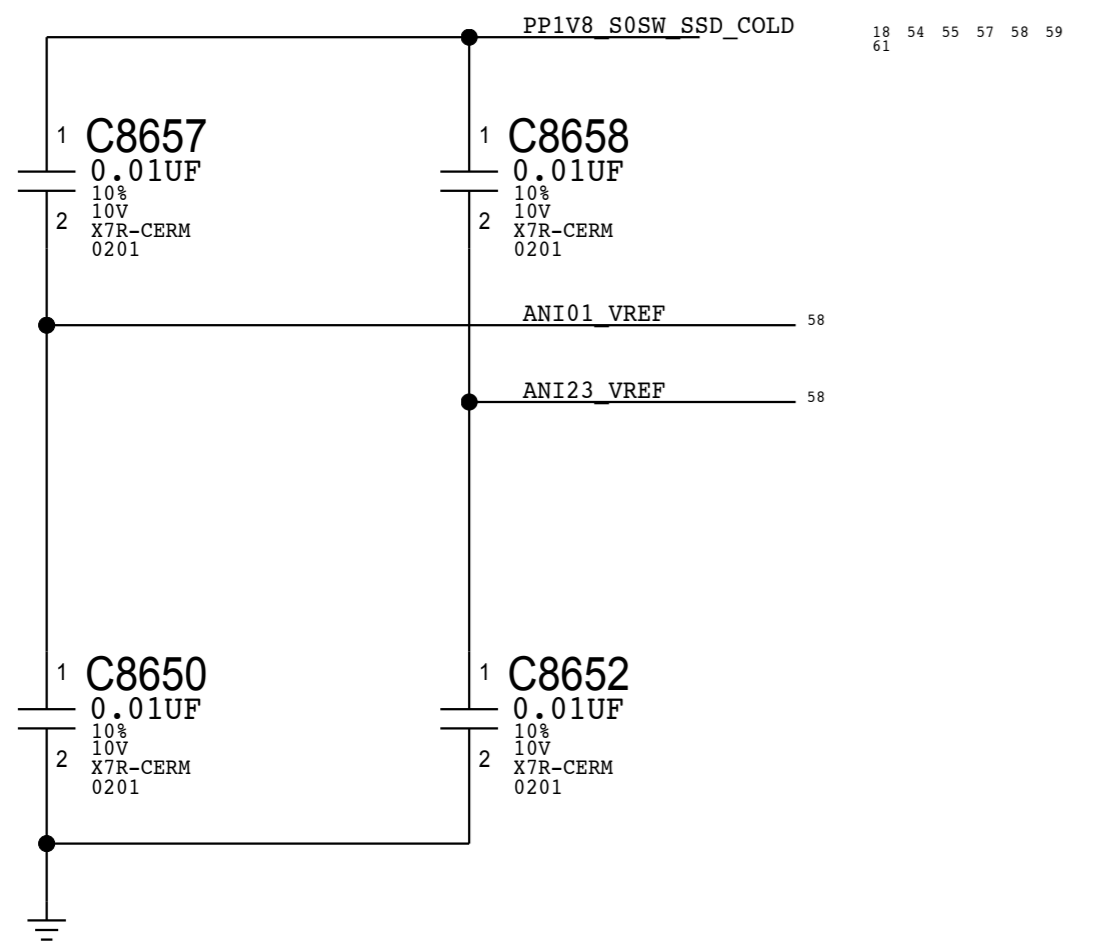
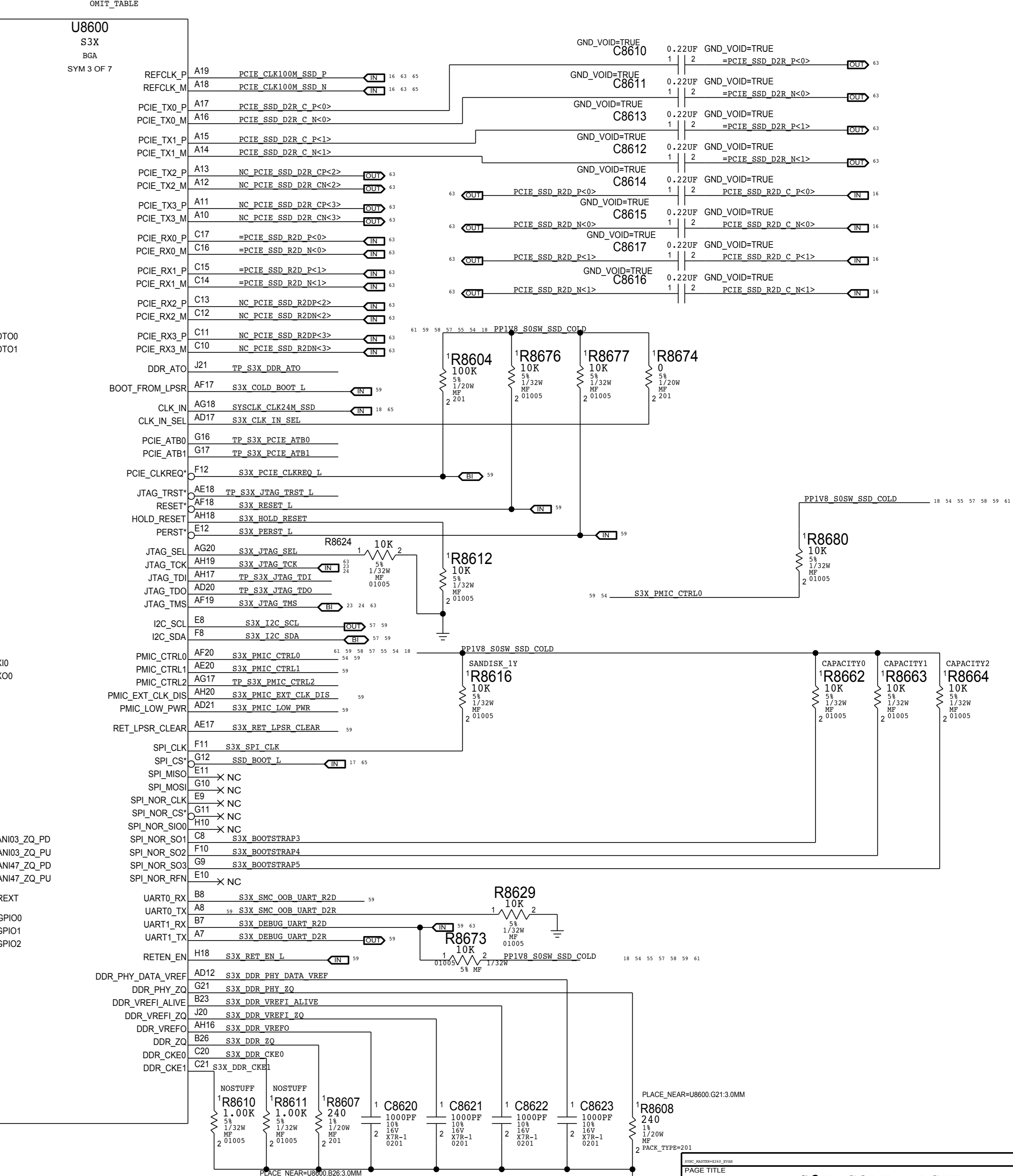


**PRODUCT CAPACITY**

| CONFIG         | CAPACITY2<br>R0864 | CAPACITY1<br>R0863 | CAPACITY0<br>R0862 |
|----------------|--------------------|--------------------|--------------------|
| 000 - 32GB     | NOSTUFF            | NOSTUFF            | NOSTUFF            |
| 001 - 64GB     | NOSTUFF            | NOSTUFF            | ASSEMBLE           |
| 010 - 128GB    | NOSTUFF            | ASSEMBLE           | NOSTUFF            |
| 011 - 256GB    | NOSTUFF            | ASSEMBLE           | ASSEMBLE           |
| 100 - 512GB    | ASSEMBLE           | NOSTUFF            | NOSTUFF            |
| 101 - 1024GB   | ASSEMBLE           | NOSTUFF            | ASSEMBLE           |
| 110 - 2048GB   | ASSEMBLE           | ASSEMBLE           | NOSTUFF            |
| 111 - RESERVED | ASSEMBLE           | ASSEMBLE           | ASSEMBLE           |

**OPERATION MODE (ODT, CLK FREQ, ETC)**

| CONFIG         | OP_MODE2<br>R8614 | OP_MODE1<br>R8615 | OP_MODE0<br>R8680 |
|----------------|-------------------|-------------------|-------------------|
| 000 - TEABERRY | NOSTUFF           | NOSTUFF           | NOSTUFF           |
| 001 - XB58 GS  | NOSTUFF           | NOSTUFF           | ASSEMBLE          |
| 010 - RESERVED | NOSTUFF           | ASSEMBLE          | NOSTUFF           |
| 011 - X260     | NOSTUFF           | ASSEMBLE          | ASSEMBLE          |
| 100 - RESERVED | ASSEMBLE          | NOSTUFF           | NOSTUFF           |
| 101 - RESERVED | ASSEMBLE          | NOSTUFF           | ASSEMBLE          |
| 110 - RESERVED | ASSEMBLE          | ASSEMBLE          | NOSTUFF           |
| 111 - RESERVED | ASSEMBLE          | ASSEMBLE          | ASSEMBLE          |

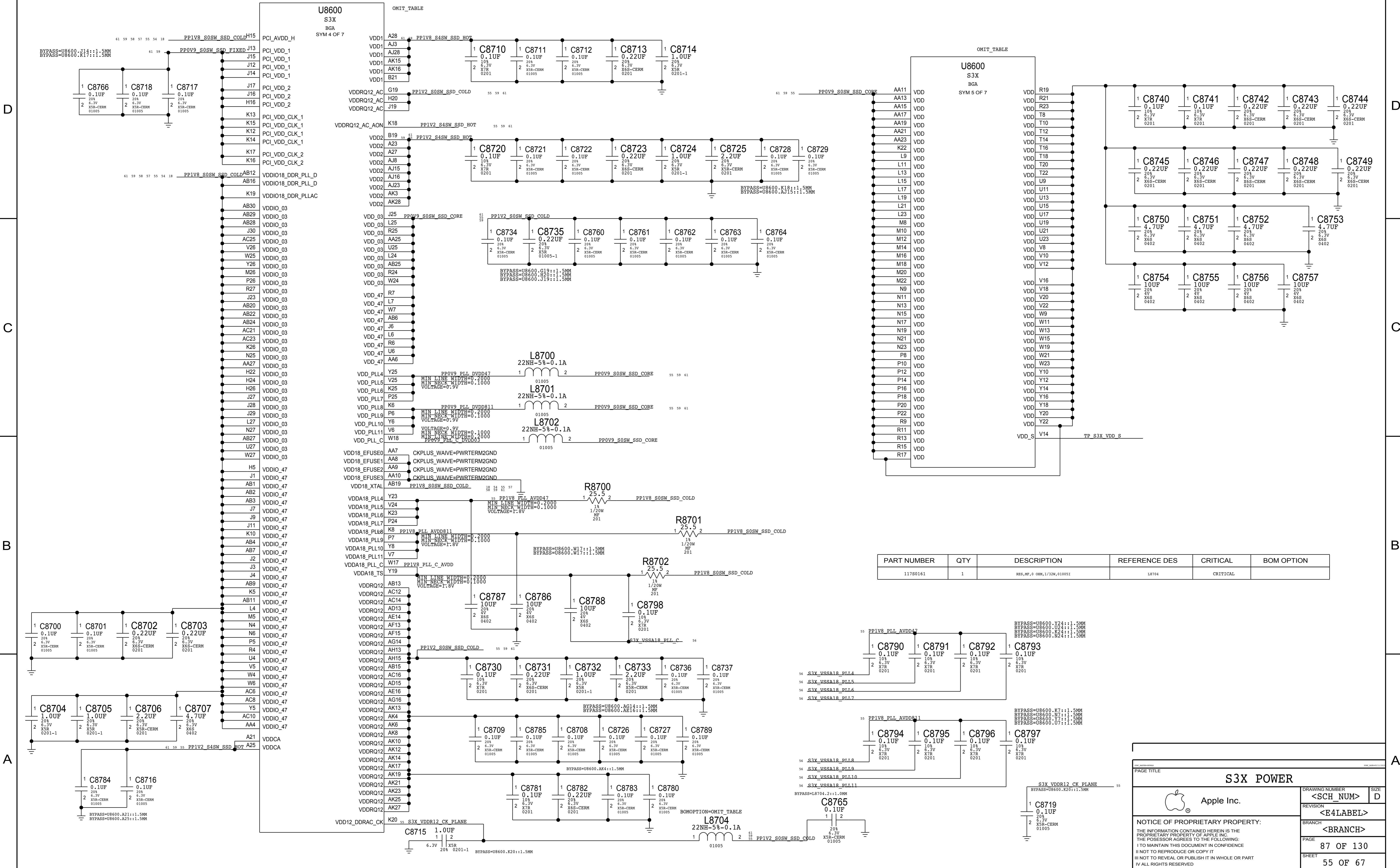


**S3X CORE, PCIE**

Apple Inc.

DRAWING NUMBER: <SCH\_NUM>  
REVISION: <E4LABEL>  
BRANCH: <BRANCH>  
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| PART NUMBER | QTY | DESCRIPTION               | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|---------------------------|---------------|----------|------------|
| 11750161    | 1   | RES,NP,0 OHM,1/32W,010051 | L8704         | CRITICAL |            |

Apple Inc.

**S3X POWER**

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7

6

5

4

3

2

1

OMIT\_TABLE

OMIT\_TABLE

OMIT\_TABLE

55 S3X\_VSSA18\_P1L4 Y24 VSS\_PL14  
 55 S3X\_VSSA18\_P1L5 U24 VSS\_PL15  
 55 S3X\_VSSA18\_P1L6 K24 VSS\_PL16  
 55 S3X\_VSSA18\_P1L7 N24 VSS\_PL17  
 55 S3X\_VSSA18\_P1L8 K7 VSS\_PL18  
 55 S3X\_VSSA18\_P1L9 N7 VSS\_PL19  
 55 S3X\_VSSA18\_P1L10 Y7 VSS\_PL110  
 55 S3X\_VSSA18\_P1L11 U7 VSS\_PL111  
 55 S3X\_VSSA18\_P1L\_C V17 VSS\_PL1\_C

A1 VSS  
 A2 VSS  
 A9 VSS  
 A20 VSS  
 A29 VSS  
 A30 VSS  
 AA5 VSS  
 AA12 VSS  
 AA14 VSS  
 AA16 VSS  
 AA18 VSS  
 AA20 VSS  
 AA22 VSS  
 AA24 VSS  
 AA26 VSS  
 AB5 VSS  
 AB8 VSS  
 AB10 VSS  
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 AC27 VSS  
 AC28 VSS  
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 AD6 VSS  
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 AD8 VSS  
 AD9 VSS  
 AD14 VSS  
 AD16 VSS  
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 AD19 VSS  
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 AD26 VSS  
 AD27 VSS  
 AE3 VSS  
 AE4 VSS  
 AE5 VSS  
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 AE7 VSS  
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 AF7 VSS  
 AF8 VSS  
 AF9 VSS  
 AF11 VSS  
 AF12 VSS  
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 AF16 VSS  
 AF27 VSS  
 AF28 VSS  
 AG3 VSS  
 AG4 VSS  
 AG13 VSS  
 AG15 VSS

U8600  
 S3X  
 BGA  
 SYM 6 OF 7

VSS AG19  
 VSS AG21  
 VSS AG23  
 VSS AG25  
 VSS AG26  
 VSS AG27  
 VSS AG28  
 VSS AH4  
 VSS AH14  
 VSS AH27  
 VSS AJ1  
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 VSS AJ4  
 VSS AJ6  
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 VSS AJ12  
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 VSS AK1  
 VSS AK2  
 VSS AK29  
 VSS AK30  
 VSS B1  
 VSS B2  
 VSS B9  
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 P11 VSS

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VSS P13  
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 VSS Y28

VSS\_V15 TP\_S3X\_VSS\_S

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 NC X S3 ANI4\_I01  
 NC X G2 ANI4\_I02  
 NC X G1 ANI4\_I03  
 NC X D2 ANI4\_I04  
 NC X D1 ANI4\_I05  
 NC X C2 ANI4\_I06  
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 NC X G6 ANI4\_NCE(0)  
 NC X E7 ANI4\_NCE(1)  
 NC X E6 ANI4\_NCE(2)  
 NC X G7 ANI4\_NCE(3)  
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 NC X A6 ANI4\_NCE(5)  
 NC X H9 ANI4\_NCE(6)  
 NC X G8 ANI4\_NCE(7)  
 NC X D7 ANI4\_ALE  
 NC X F6 ANI4\_CLE  
 NC X C3 ANI4\_NWE  
 NC X D6 ANI4\_RNB  
 NC X B6 ANI4\_PPM\_IN  
 NC X C6 ANI4\_PPM\_OUT  
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 NC X F1 ANI4\_NRE\_N  
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 NC X H1 ANI6\_I06  
 NC X H2 ANI6\_I07  
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 NC X H10 ANI6\_NCE(2)  
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 NC X AC1 ANI6\_VREF

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ANI5\_I00 R2  
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 ANI5\_I02 P7  
 ANI5\_I03 P1  
 ANI5\_I04 L2  
 ANI5\_I05 L1  
 ANI5\_I06 K2  
 ANI5\_I07 K1  
 ANI5\_NCE(0) B3  
 ANI5\_NCE(1) D4  
 ANI5\_NCE(2) E4  
 ANI5\_NCE(3) B4  
 ANI5\_NCE(4) A4  
 ANI5\_NCE(5) D5  
 ANI5\_NCE(6) B5  
 ANI5\_NCE(7) A5  
 ANI5\_ALE F4  
 ANI5\_CLE A3  
 ANI5\_NWE K3  
 ANI5\_RNB C4  
 ANI5\_PPM\_IN G5  
 ANI5\_PPM\_OUT E5  
 ANI5\_NRE\_P M2  
 ANI5\_NRE\_N M1  
 ANI5\_DQS\_P N2  
 ANI5\_DQS\_N N1  
 ANI5\_VREF R1  
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 ANI7\_I01 U1  
 ANI7\_I02 U2  
 ANI7\_I03 U3  
 ANI7\_I04 Y1  
 ANI7\_I05 Y2  
 ANI7\_I06 A1  
 ANI7\_I07 A2  
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 ANI7\_CLE AH6  
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 ANI7\_PPM\_OUT AH6  
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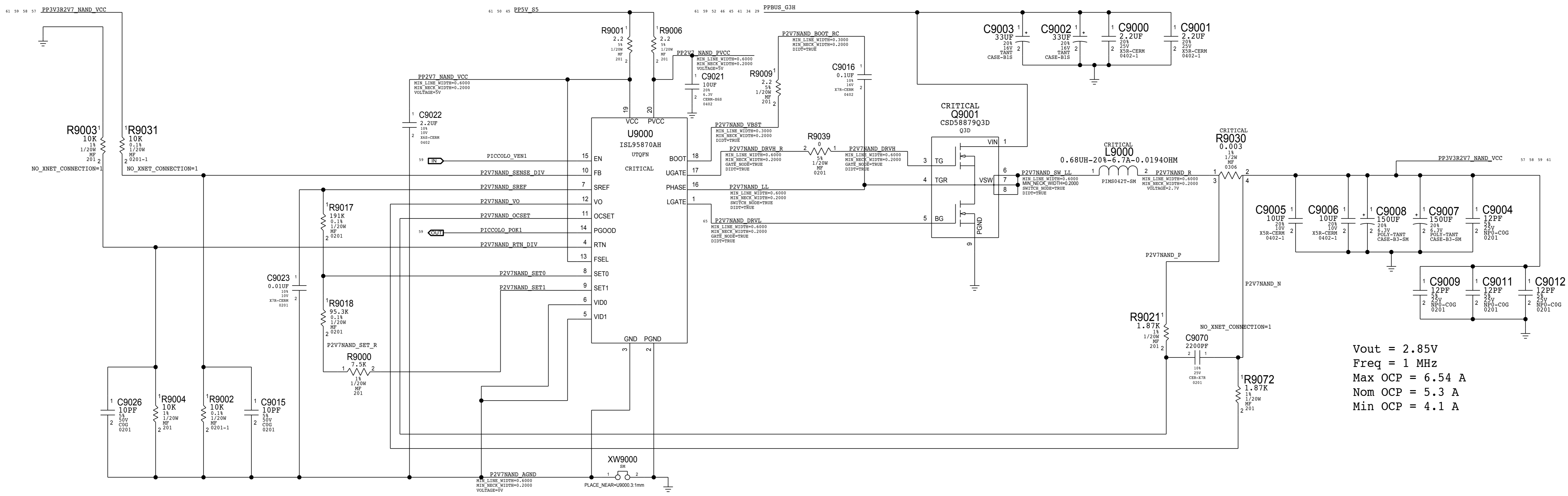
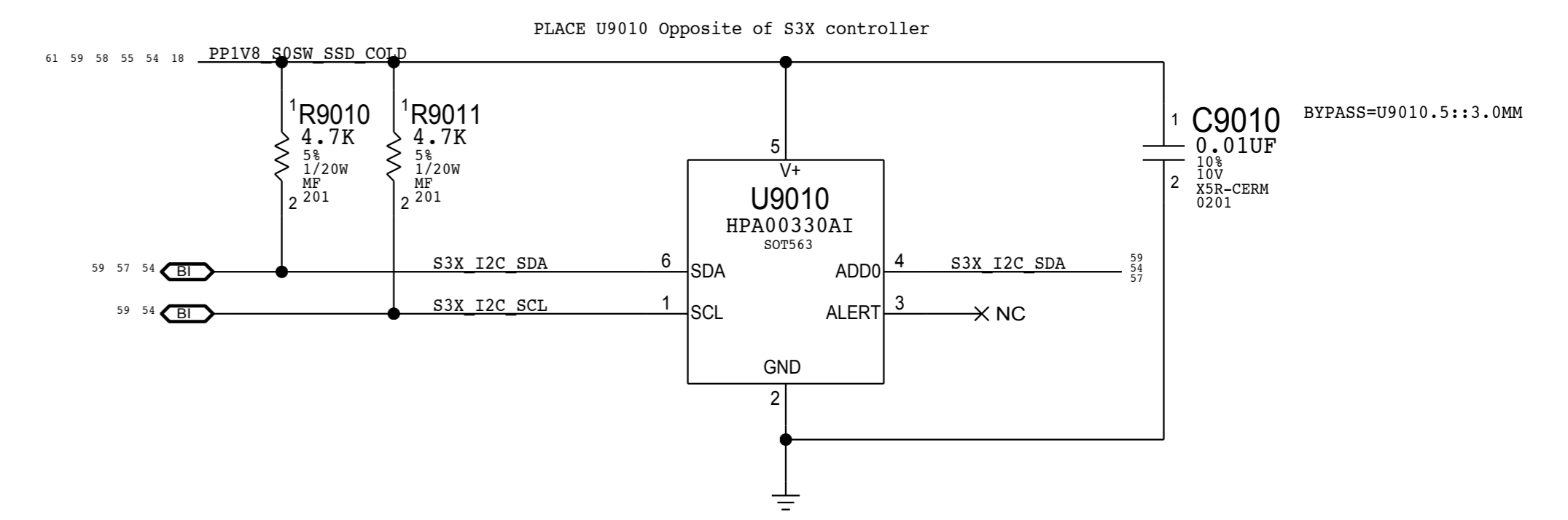
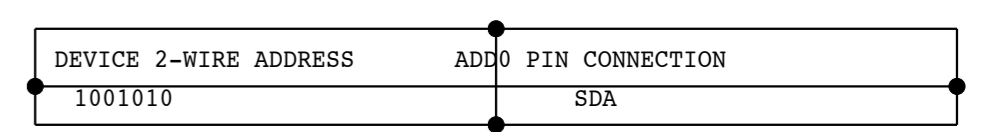
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|   |  | PAGE                 | 88 OF 130 |
|   |  | SHEET                | 56 OF 67  |

D

C

B

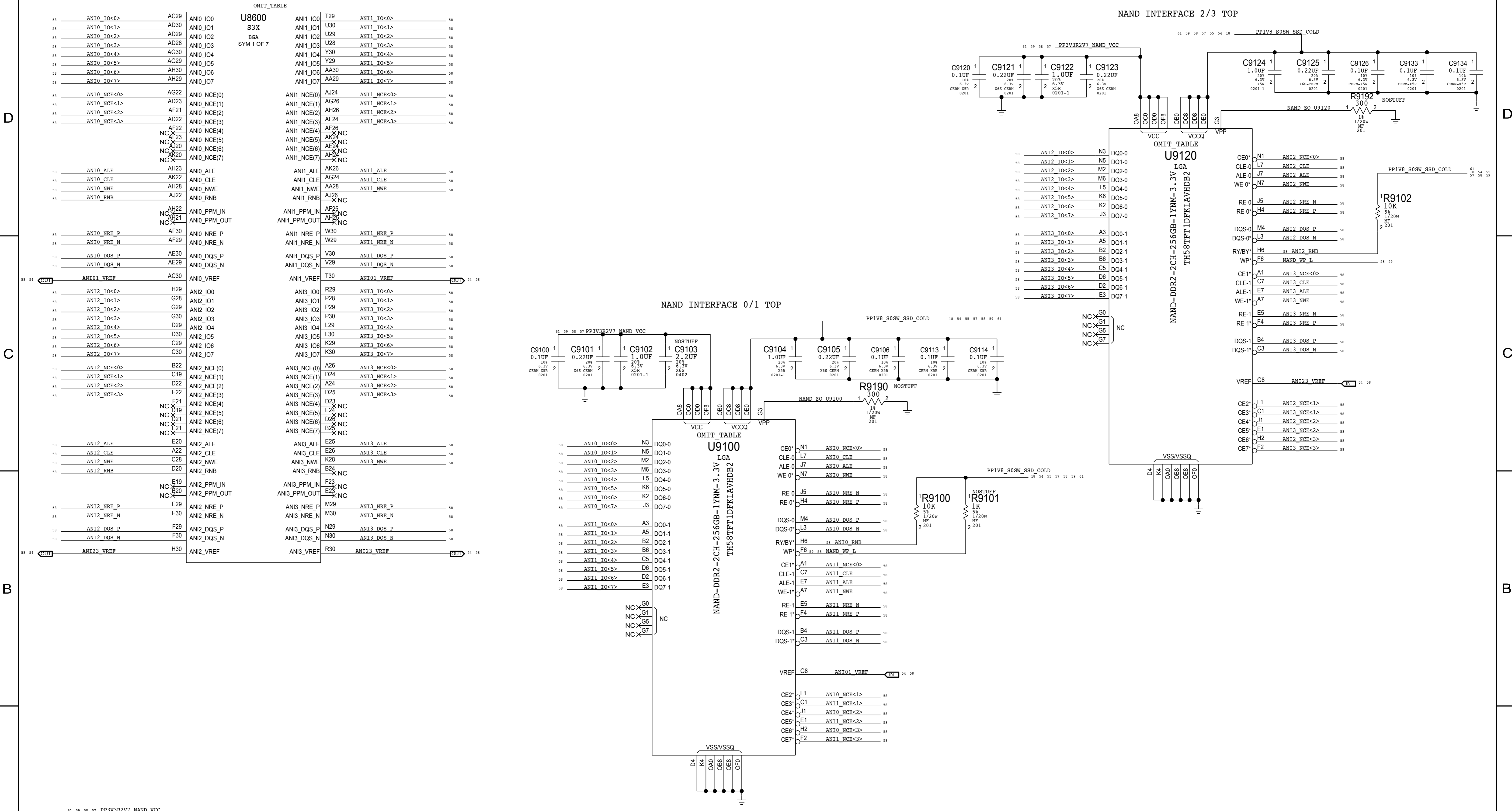
A



Vout = 2.85V  
 Freq = 1 MHz  
 Max OCP = 6.54 A  
 Nom OCP = 5.3 A  
 Min OCP = 4.1 A

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| I TO MAINTAIN THIS DOCUMENT IN CONFIDENCE   |  | PAGE                   | 90 OF 130 |
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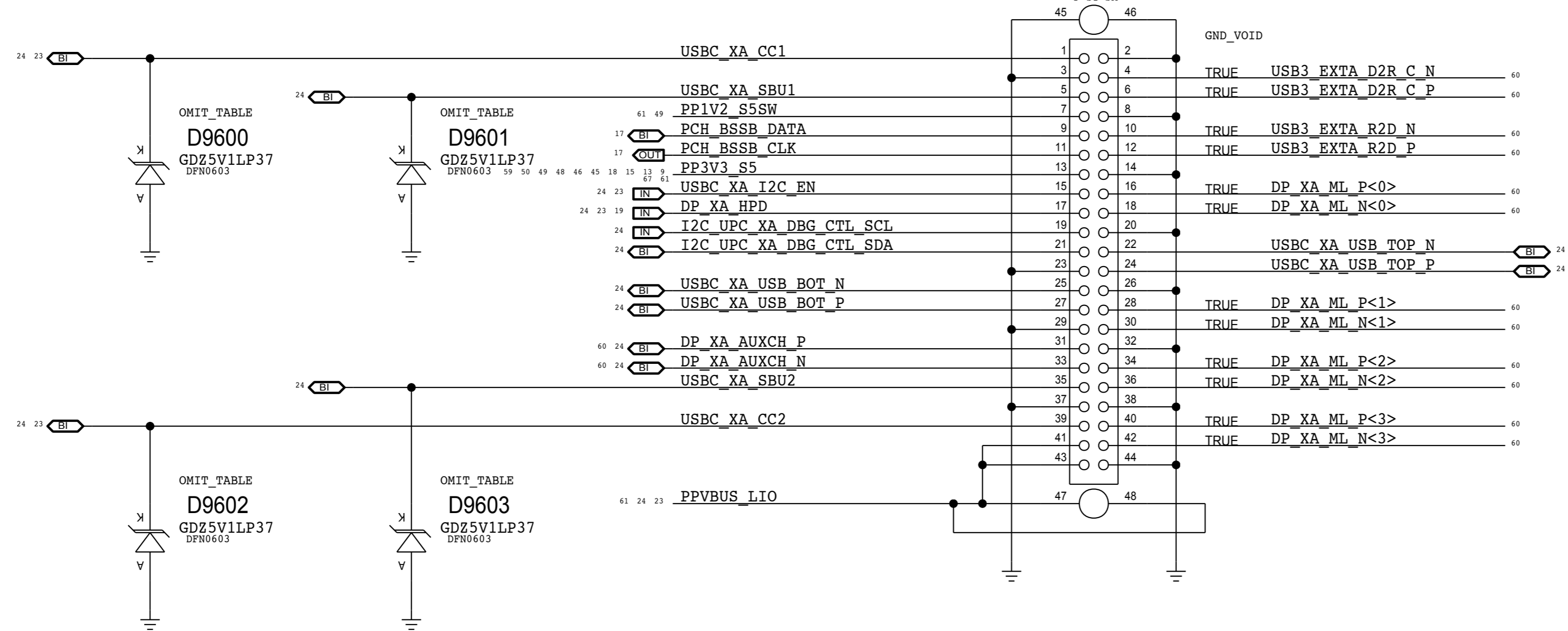




### USB-C B2B RECEPTACLE 516S00038

CRITICAL  
J9600

BM28P0.6-44DS-0.35V  
F-ST-BM



| PART NUMBER | QTY | DESCRIPTION                        | REFERENCE DES              | CRITICAL | BOM OPTION |
|-------------|-----|------------------------------------|----------------------------|----------|------------|
| 371S00075   | 4   | DIODE, ZENER, 6.2V, 250MW, DFN0603 | D9600, D9601, D9602, D9603 | CRITICAL |            |

#### USB3 AC COUPLING

GND\_VOID=TRUE (ALL CAPS)

| REF | DESCRIPTION        | QTY | VALUE | REF | DESCRIPTION        | QTY | VALUE |
|-----|--------------------|-----|-------|-----|--------------------|-----|-------|
| 65  | USB3_EXT*_D2*_P    | 1   | 0.1UF | 2   | USB3_EXT*_D2*_C*_P | 1   | 0.1UF |
| 65  | USB3_EXT*_D2*_N    | 1   | 0.1UF | 2   | USB3_EXT*_D2*_C*_N | 1   | 0.1UF |
| 16  | USB3_EXT*_R2*_C*_P | 1   | 0.1UF | 2   | USB3_EXT*_R2*_P    | 1   | 0.1UF |
| 16  | USB3_EXT*_R2*_C*_N | 1   | 0.1UF | 2   | USB3_EXT*_R2*_N    | 1   | 0.1UF |

#### DP SNK0 AC COUPLING

GND\_VOID=TRUE (ALL CAPS)

| REF | DESCRIPTION        | QTY | VALUE | REF | DESCRIPTION     | QTY | VALUE |
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| 23  | DP_XA*_ML*_C*_P<0> | 1   | 0.1UF | 2   | DP_XA*_ML*_P<0> | 1   | 0.1UF |
| 23  | DP_XA*_ML*_C*_N<0> | 1   | 0.1UF | 2   | DP_XA*_ML*_N<0> | 1   | 0.1UF |
| 23  | DP_XA*_ML*_C*_P<1> | 1   | 0.1UF | 2   | DP_XA*_ML*_P<1> | 1   | 0.1UF |
| 23  | DP_XA*_ML*_C*_N<1> | 1   | 0.1UF | 2   | DP_XA*_ML*_N<1> | 1   | 0.1UF |
| 23  | DP_XA*_ML*_C*_P<2> | 1   | 0.1UF | 2   | DP_XA*_ML*_P<2> | 1   | 0.1UF |
| 23  | DP_XA*_ML*_C*_N<2> | 1   | 0.1UF | 2   | DP_XA*_ML*_N<2> | 1   | 0.1UF |
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| REF | DESCRIPTION        | QTY | VALUE | REF | DESCRIPTION     | QTY | VALUE |
|-----|--------------------|-----|-------|-----|-----------------|-----|-------|
| 23  | DP_XA*_AUXCH*_C*_P | 1   | 0.1UF | 2   | DP_XA*_AUXCH*_P | 1   | 0.1UF |
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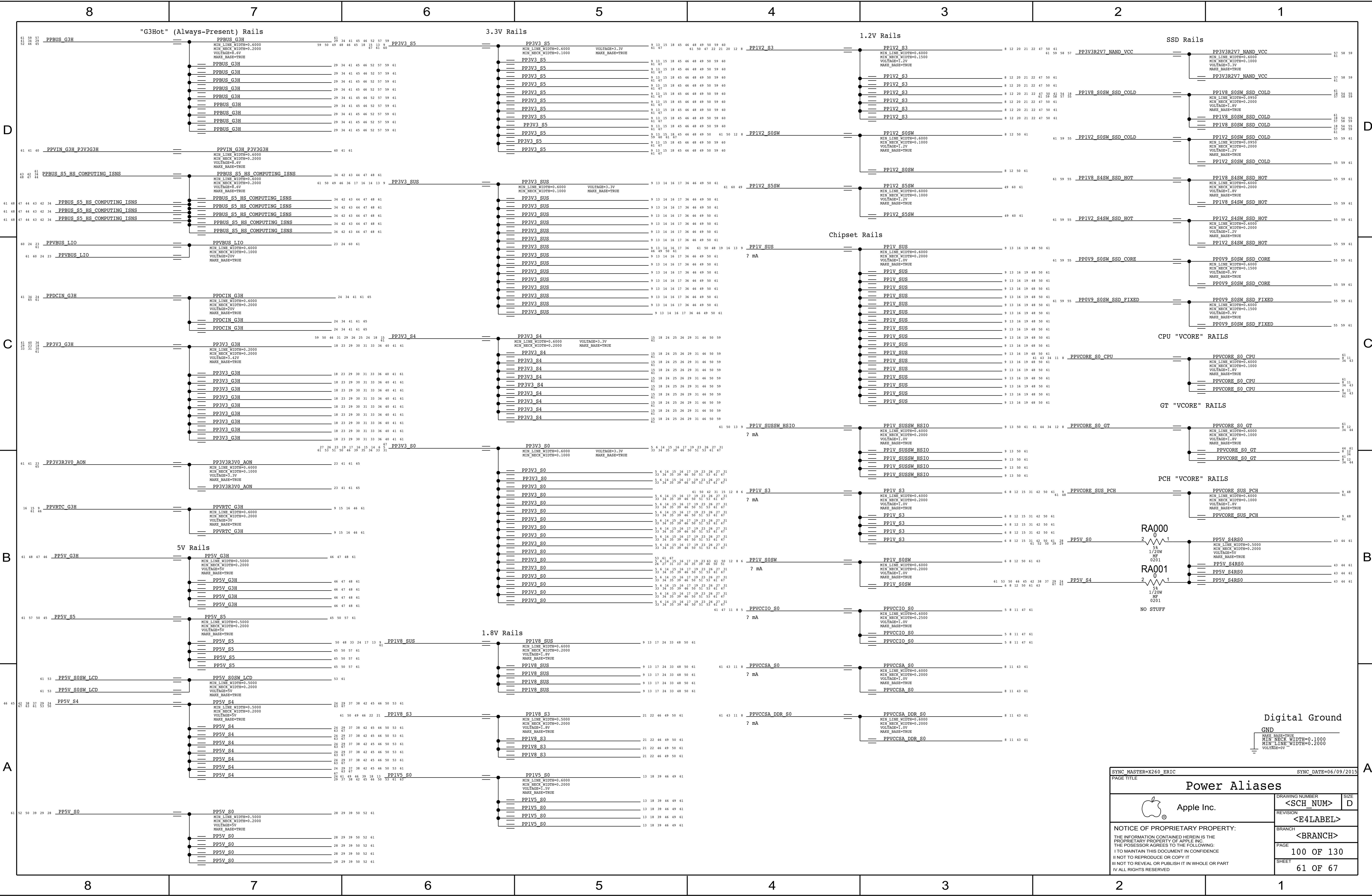
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**LIO Flex Connector**

Apple Inc.

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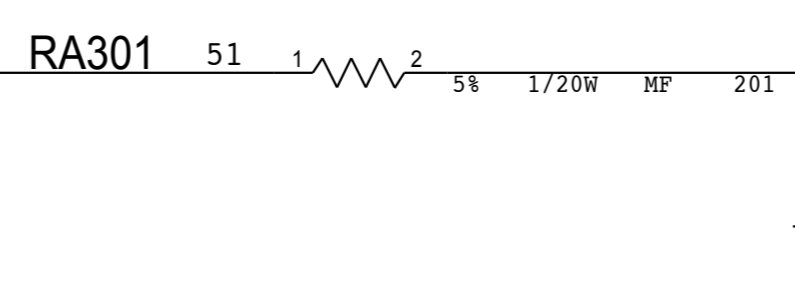
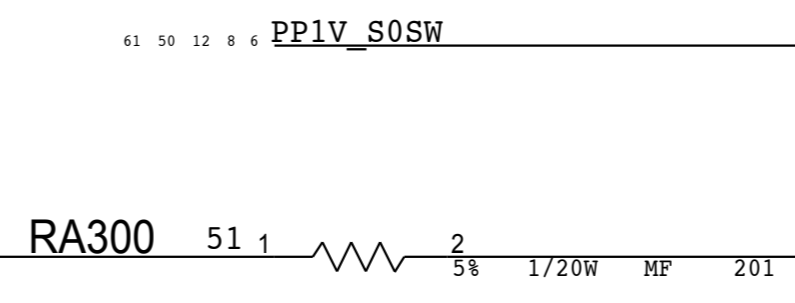
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Memory Bit/Byte Swizzle

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| PAGE TITLE   |                |                      |            |
| <b>Memory Signal Swaps</b>   |                |                      |            |
| <br>Apple Inc.  | DRAWING NUMBER | <SCH_NUM>            | SIZE       |
|  | REVISION       | <E4LABEL>            | D          |
| NOTICE OF PROPRIETARY PROPERTY:  |                | BRANCH               |            |
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|  |                | SHEET                | 62 OF 67   |

| MAKE_BASE  |                       | MAKE_BASE |      | MAKE_BASE             |    | MAKE_BASE |                       | MAKE_BASE                     |              | MAKE_BASE |      | MAKE_BASE    |      | MAKE_BASE    |    |      |              |      |
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| 63 6   | NC_CPU_CFG0           | ==        | TRUE | NC_CPU_CFG0           | == | TRUE      | NC_CPU_CFG0           | 6 63                          | NC_CPU_CFG11 | ==        | TRUE | NC_CPU_CFG11 | 6 63 | NC_CPU_CFG12 | == | TRUE | NC_CPU_CFG12 | 6 63 |
| 63 6   | NC_CPU_CFG1           | ==        | TRUE | NC_CPU_CFG1           | == | TRUE      | NC_CPU_CFG1           | 6 63                          | NC_CPU_CFG13 | ==        | TRUE | NC_CPU_CFG13 | 6 63 | NC_CPU_CFG14 | == | TRUE | NC_CPU_CFG14 | 6 63 |
| 63 6   | NC_CPU_CFG2           | ==        | TRUE | NC_CPU_CFG2           | == | TRUE      | NC_CPU_CFG2           | 6 63                          | NC_CPU_CFG15 | ==        | TRUE | NC_CPU_CFG15 | 6 63 | NC_CPU_CFG16 | == | TRUE | NC_CPU_CFG16 | 6 63 |
| 63 6   | TP_CPU_CFG3           | ==        | TRUE | TP_CPU_CFG3           | == | TRUE      | TP_CPU_CFG3           | 6 63                          | NC_CPU_CFG17 | ==        | TRUE | NC_CPU_CFG17 | 6 63 | NC_CPU_CFG18 | == | TRUE | NC_CPU_CFG18 | 6 63 |
| 63 6   | NC_CPU_CFG5           | ==        | TRUE | NC_CPU_CFG5           | == | TRUE      | NC_CPU_CFG5           | 6 63                          | NC_CPU_CFG19 | ==        | TRUE | NC_CPU_CFG19 | 6 63 |              |    |      |              |      |
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| 63 6   | NC_CPU_CFG10          | ==        | TRUE | NC_CPU_CFG10          | == | TRUE      | NC_CPU_CFG10          | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 6   | CPU_VR_READY          | ==        | TRUE | CPU_VR_READY          | == | TRUE      | CPU_VR_READY          | 42 46 63                      |              |           |      |              |      |              |    |      |              |      |
| 63 30 15   | SMC_PCH_SUSWARN_L     | ==        | TRUE | SMC_PCH_SUSWARN_L     | == | TRUE      | SMC_PCH_SUSWARN_L     | 15 30 63                      |              |           |      |              |      |              |    |      |              |      |
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| 65 24 23 16  | XDP_USB_EXTA_OC_L     | ==        | TRUE | USB_EXTA_OC_L         | == | TRUE      | USB_EXTA_OC_L         | 23                            |              |           |      |              |      |              |    |      |              |      |
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| 63 46 30 15  | PM_RSMRST_L           | ==        | TRUE | PM_RSMRST_L           | == | TRUE      | PM_RSMRST_L           | 15 30 46 63                   |              |           |      |              |      |              |    |      |              |      |
| 63 46 45   | P5VS4_PGOOD           | ==        | TRUE | P5VS4_PGOOD           | == | TRUE      | P5VS4_PGOOD           | 45 46 63                      |              |           |      |              |      |              |    |      |              |      |
| 62 38 37 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 | PP5V_S4               | ==        | TRUE | PP5V_S4               | == | TRUE      | PP5V_S4               | 24 29 37 38 42 45 46 50 53 61 |              |           |      |              |      |              |    |      |              |      |
| 63 16  | TP_XDP_CPU_PRDY_L     | ==        | TRUE | TP_XDP_CPU_PRDY_L     | == | TRUE      | TP_XDP_CPU_PRDY_L     | 16 63                         |              |           |      |              |      |              |    |      |              |      |
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| 63 6   | XDP_CPUPCH_TMS        | ==        | TRUE | XDP_CPUPCH_TMS        | == | TRUE      | XDP_CPUPCH_TMS        | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 6   | XDP_CPUPCH_TRST_L     | ==        | TRUE | XDP_CPUPCH_TRST_L     | == | TRUE      | XDP_CPUPCH_TRST_L     | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 16  | TP_XDP_PCH_OBSDATA_A2 | ==        | TRUE | TP_XDP_PCH_OBSDATA_A2 | == | TRUE      | TP_XDP_PCH_OBSDATA_A2 | 16 63                         |              |           |      |              |      |              |    |      |              |      |
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| 63 14  | TP_XDP_PCH_OBSDATA_C1 | ==        | TRUE | TP_XDP_PCH_OBSDATA_C1 | == | TRUE      | TP_XDP_PCH_OBSDATA_C1 | 14 63                         |              |           |      |              |      |              |    |      |              |      |
| 63 14  | TP_XDP_PCH_OBSDATA_C2 | ==        | TRUE | TP_XDP_PCH_OBSDATA_C2 | == | TRUE      | TP_XDP_PCH_OBSDATA_C2 | 14 63                         |              |           |      |              |      |              |    |      |              |      |
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| 63 14  | TP_XDP_PCH_OBSDATA_D1 | ==        | TRUE | TP_XDP_PCH_OBSDATA_D1 | == | TRUE      | TP_XDP_PCH_OBSDATA_D1 | 14 63                         |              |           |      |              |      |              |    |      |              |      |
| 63 16  | TP_XDP_PCH_OBSDATA_D2 | ==        | TRUE | TP_XDP_PCH_OBSDATA_D2 | == | TRUE      | TP_XDP_PCH_OBSDATA_D2 | 16 63                         |              |           |      |              |      |              |    |      |              |      |
| 63 16  | TP_XDP_PCH_OBSDATA_D3 | ==        | TRUE | TP_XDP_PCH_OBSDATA_D3 | == | TRUE      | TP_XDP_PCH_OBSDATA_D3 | 16 63                         |              |           |      |              |      |              |    |      |              |      |
| 63 6   | TP_XDP_PCH_OBSFN_C1   | ==        | TRUE | TP_XDP_PCH_OBSFN_C1   | == | TRUE      | TP_XDP_PCH_OBSFN_C1   | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 6   | TP_XDP_PCH_TCK        | ==        | TRUE | TP_XDP_PCH_TCK        | == | TRUE      | TP_XDP_PCH_TCK        | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 6   | XDP_CPUPCH_TDI        | ==        | TRUE | XDP_CPUPCH_TDI        | == | TRUE      | XDP_CPUPCH_TDI        | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 6   | XDP_CPUPCH_TDO        | ==        | TRUE | XDP_CPUPCH_TDO        | == | TRUE      | XDP_CPUPCH_TDO        | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 6   | XDP_CPUPCH_TMS        | ==        | TRUE | XDP_CPUPCH_TMS        | == | TRUE      | XDP_CPUPCH_TMS        | 6 63                          |              |           |      |              |      |              |    |      |              |      |
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| 63 6   | TP_ITP_PMODE          | ==        | TRUE | TP_ITP_PMODE          | == | TRUE      | TP_ITP_PMODE          | 6 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 7   | TP_CPU_MEMVTT_PWR_EN  | ==        | TRUE | TP_CPU_MEMVTT_PWR_EN  | == | TRUE      | TP_CPU_MEMVTT_PWR_EN  | 7 63                          |              |           |      |              |      |              |    |      |              |      |
| 63 30  | TP_SMC_DEV_MLB        | ==        | TRUE | TP_SMC_DEV_MLB        | == | TRUE      | TP_SMC_DEV_MLB        | 30 63                         |              |           |      |              |      |              |    |      |              |      |
| 54 24 23   | S3X_JTAG_TCK          | ==        | TRUE | TP_S3X_JTAG_TCK       | == | TRUE      | TP_S3X_JTAG_TCK       |                               |              |           |      |              |      |              |    |      |              |      |
| 54 24 23   | S3X_JTAG_TMS          | ==        | TRUE | TP_S3X_JTAG_TMS       | == | TRUE      | TP_S3X_JTAG_TMS       |                               |              |           |      |              |      |              |    |      |              |      |
| 63 30  | TP_SMC_DEBUGPRT_EN_L  | ==        | TRUE | TP_SMC_DEBUGPRT_EN_L  | == | TRUE      | TP_SMC_DEBUGPRT_EN_L  | 30 63                         |              |           |      |              |      |              |    |      |              |      |
| 63 14  | TP_SPKR_ID0           | ==        | TRUE | TP_SPKR_ID0           | == | TRUE      | TP_SPKR_ID0           | 14 63                         |              |           |      |              |      |              |    |      |              |      |
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|---|----------------|----------------------|------------|
| SYNC_MASTER=X260_ERIC   |                | SYNC_DATE=06/04/2015 |            |
| PAGE TITLE  |                |                      |            |
| <b>X260 Signal Aliases</b>  |                |                      |            |
|   | DRAWING NUMBER | <SCH_NUM>            | SIZE       |
|   | REVISION       | <E4LABEL>            | D          |
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|   |                | SHEET                | 63 OF 67   |



### NO\_TEST Nets

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|       |                          |    |      |                          |       |
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| 64 14 | NC_PCH_BT_I2S_CLK        | == | TRUE | NC_PCH_BT_I2S_CLK        | 14 64 |
| 64 14 | NC_PCH_BT_I2S_D2R        | == | TRUE | NC_PCH_BT_I2S_D2R        | 14 64 |
| 64 14 | NC_PCH_BT_I2S_R2D        | == | TRUE | NC_PCH_BT_I2S_R2D        | 14 64 |
| 64 14 | NC_PCH_BT_I2S_SYNC       | == | TRUE | NC_PCH_BT_I2S_SYNC       | 14 64 |
| 64 14 | NC_HDA_SDIN1             | == | TRUE | NC_HDA_SDIN1             | 14 64 |
| 64 15 | NC_PCI_PME_L             | == | TRUE | NC_PCI_PME_L             | 15 64 |
| 64 14 | NC_CLINK_CLK             | == | TRUE | NC_CLINK_CLK             | 14 64 |
| 64 14 | NC_CLINK_DATA            | == | TRUE | NC_CLINK_DATA            | 14 64 |
| 64 14 | NC_CLINK_RESET_L         | == | TRUE | NC_CLINK_RESET_L         | 14 64 |
| 64 5  | NC_DP_DDI2_AUXCH_CP      | == | TRUE | NC_DP_DDI2_AUXCH_CP      | 5 64  |
| 64 5  | NC_DP_DDI2_AUXCH_CN      | == | TRUE | NC_DP_DDI2_AUXCH_CN      | 5 64  |
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| 64 5  | NC_DP_DDI2_ML_CN<0>      | == | TRUE | NC_DP_DDI2_ML_CN<0>      | 5 64  |
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| 64 5  | NC_DP_DDI2_ML_CN<3>      | == | TRUE | NC_DP_DDI2_ML_CN<3>      | 5 64  |
| 64 30 | NC_TCON_BKLT_PWM         | == | TRUE | NC_TCON_BKLT_PWM         | 30 64 |
| 64 30 | NC_SMC_GFX_OVERTEMP      | == | TRUE | NC_SMC_GFX_OVERTEMP      | 30 64 |
| 64 30 | NC_SMC_GFX_THROTTLE_L    | == | TRUE | NC_SMC_GFX_THROTTLE_L    | 30 64 |
| 64 30 | NC_SMC_GFX_SELF_THROTTLE | == | TRUE | NC_SMC_GFX_SELF_THROTTLE | 30 64 |
| 64 30 | NC_SMC_FAN_0_CTL         | == | TRUE | NC_SMC_FAN_0_CTL         | 30 64 |
| 64 30 | NC_SMC_FAN_0_TACH        | == | TRUE | NC_SMC_FAN_0_TACH        | 30 64 |
| 64 30 | NC_SMC_FAN_1_CTL         | == | TRUE | NC_SMC_FAN_1_CTL         | 30 64 |
| 64 30 | NC_SMC_FAN_1_TACH        | == | TRUE | NC_SMC_FAN_1_TACH        | 30 64 |
| 64 30 | NC_SYS_ONEWIRE           | == | TRUE | NC_SYS_ONEWIRE           | 30 64 |
| 64 30 | NC_SMC_SOC_POR           | == | TRUE | NC_SMC_SOC_POR           | 30 64 |
| 64 30 | NC_SMC_DP_HPD_L          | == | TRUE | NC_SMC_DP_HPD_L          | 30 64 |
| 64 30 | NC_SPI_SMC_CLK           | == | TRUE | NC_SPI_SMC_CLK           | 30 64 |
| 64 30 | NC_SPI_SMC_CS_L          | == | TRUE | NC_SPI_SMC_CS_L          | 30 64 |
| 64 30 | NC_SPI_SMC_MISO          | == | TRUE | NC_SPI_SMC_MISO          | 30 64 |
| 64 30 | NC_SPI_SMC_MOSI          | == | TRUE | NC_SPI_SMC_MOSI          | 30 64 |
| 64 30 | NC_SMC_ACTUATOR_ACTIVE_L | == | TRUE | NC_SMC_ACTUATOR_ACTIVE_L | 30 64 |
| 64 30 | NC_WIFI_DEBUGPRT_R2D_L   | == | TRUE | NC_WIFI_DEBUGPRT_R2D_L   | 30 64 |
| 64 30 | NC_WIFI_DEBUGPRT_D2R_L   | == | TRUE | NC_WIFI_DEBUGPRT_D2R_L   | 30 64 |

CPU/PCH

SMC

### Unused nets with offpage

(Nets with offpages not used on this project)

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| 27    | CAM_SENSOR_WAKE_L  | 27    | CPUCORE_ISNS1_P   | 43 |
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| 5     | TBT_POC_RESET      | 5     | CPUCORE_ISNS2_P   | 43 |
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| 14    | TBT_T_USB_PWR_EN   | 14    | SOC_UART_R2D      | 17 |
| 6     | BT_PWRST_L         | 6     | SOC_UART_CTS_L    | 17 |
| 6     | BT_TIMESTAMP       | 6     | SOC_UART_RTS_L    | 17 |
| 17    | PCH_SWD_IO         | 17    | CPU_CFG<4>        | 6  |
| 17    | PCH_SWD_MUX_SEL    | 17    | DP_DDI2_HPD       | 5  |
| 17    | SOC_WAKE_L         | 17    | XDP_USB_EXTC_OC_L | 16 |
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| 17    | AUD_SPI_CLK        | 17    |                   |    |
| 17    | AUD_SPI_MISO       | 17    |                   |    |
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| <h2>Func Test / No Test</h2>  |  |                      |            |
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EE Chaz Probe Points

SSD & WiFi Chamber Test Points

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| PPA505 | SMC_CHGR_INT_L       | 30 41    |
| PPA506 | MEM_A_CAA<0>         | 7 21     |
| PPA507 | MEM_A_CLK_P<0>       | 7 21     |
| PPA508 | MEM_A_CLK_N<0>       | 7 21     |
| PPA509 | MEM_A_CS_L<0>        | 7 21     |
| PPA510 | MEM_B_DQ<12>         | 7 22 62  |
| PPA511 | MEM_A_DQS_P<1>       | 7 21 62  |
| PPA512 | MEM_A_DQS_N<1>       | 7 21 62  |
| PPA513 | AP_DEV_WAKE          | 14 25    |
| PPA514 | AP_S0IX_WAKE_L       | 17 18    |
| PPA515 | AP_S0IX_WAKE_SEL     | 17 18    |
| PPA517 | MIPI_CLK_P           | 27 28    |
| PPA518 | MIPI_DATA_P          | 27 28    |
| PPA519 | PCH_BT_UART_D2R      | 17 26    |
| PPA520 | PCH_BT_UART_RTS_L    | 17 26    |
| PPA522 | PCIE_CAMERA_D2R_P    | 16 28    |
| PPA523 | PCIE_CLK100M_SSD_P   | 16 54 63 |
| PPA529 | AUD_PWR_EN           | 17 39    |
| PPA530 | BT_UART_RTS_L        | 25 26    |
| PPA531 | CAMERA_PWR_EN        | 14 27    |
| PPA533 | EDP_BKLT_PWM         | 9 53     |
| PPA534 | HDA_SDINO            | 14 39    |
| PPA537 | LCD_IRO_L            | 17 53    |
| PPA538 | MEM_CAM_A<8>         | 27 28    |
| PPA539 | MEM_CAM_CS_L         | 27 28    |
| PPA543 | MIPI_CLK_N           | 27 28    |
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| PPA545 | PCH_BT_UART_CTS_L    | 17 26    |
| PPA546 | PCH_BT_UART_R2D      | 17 26    |
| PPA548 | PCIE_CAMERA_D2R_N    | 16 28    |
| PPA549 | PCIE_CLK100M_SSD_N   | 16 54 63 |
| PPA551 | PCIE_SSD_D2R_N<0>    | 16 63    |
| PPA552 | PCIE_SSD_D2R_P<0>    | 16 63    |
| PPA560 | SMC_BT_PWR_EN        | 25 30    |
| PPA562 | SMC_OOB1_R2D_L       | 30 59    |
| PPA563 | SMC_PROCHOT          | 30 31    |
| PPA564 | SMC_SENSOR_PWR_EN    | 30 32 34 |
| PPA565 | SMC_WAKE_SCI_L       | 15 30    |
| PPA566 | SMC_WIFI_PWR_EN      | 25 30    |
| PPA567 | AP_PCIE_WAKE_L       | 18 25    |
| PPA569 | SSD_SR_EN_L          | 15 59    |
| PPA570 | SYSCLK_CLK12M_SMC    | 18 30    |
| PPA571 | SYSCLK_CLK24M_SSD    | 18 54    |
| PPA572 | SYSCLK_CLK24M_CAMERA | 18 27 65 |
| PPA575 | TPAD_SPI_CS_L        | 17 29    |
| PPA576 | TPAD_SPI_INT_L       | 17 29    |

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| PPA577 | USB3_EXT_A_D2R_N           | 16 60          |
| PPA578 | USB3_EXT_A_D2R_P           | 16 60          |
| PPA579 | CPU_CATERR_L               | 6 30           |
| PPA581 | MEM_B_CS_L<1>              | 7 22           |
| PPA582 | MEM_B_CKE<1>               | 7 22           |
| PPA583 | MEM_B_CAB<1>               | 7 22           |
| PPA584 | MEM_B_CAA<2>               | 7 22           |
| PPA587 | MEM_B_CAA<3>               | 7 22           |
| PPA594 | XDP_USB_EXT_A_OC_L         | 16 23 24 63    |
| PPA596 | USB_EXT_A_P                | 16 23          |
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| PPA598 | PM_DS_W_PWRGD              | 15 30          |
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| PPA502 | CAMERA_CLKREQ_L            | 16 27          |
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| PPA553 | LPC_SERIRQ                 | 14 30          |
| PPA554 | SMC_CLK32K                 | 30 31          |
| PPA555 | SYSCLK_CLK32K_PCH          | 16 18          |
| PPA556 | SYSCLK_CLK32K_CAMERA_BT_AP | 18 25          |
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| PPA558 | TPAD_SPI_IF_EN             | 17 29          |
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| PPA561 | CPUCORE_GL2                | 43             |
| PPA568 | CPUGT_GL1                  | 44             |
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| PPA574 | SMC_BC_ACOK                | 30 31 34 41 63 |
| PPA580 | P2V7NAND_DRVL              | 57             |
| PPA585 | P1V8SUS_PGOOD              | 46 48          |

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| TPA504 | GND                 |                   |
| TPA505 | GND                 |                   |
| TPA506 | SMC_ONOFF_L         | 29 30 31 32       |
| TPA507 | SSD_BOOT_L          | 17 54             |
| TPA508 | SMC_DEV_SUPPLY_L    | 30                |
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| TPA512 | SSD_UART_R2D        | 17 63             |
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| TPA514 | PCIE_TEST_D2R_P     | 16 65             |
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| TPA522 | USB_TEST_P          | 16 65             |
| TPA523 | USB_TEST_N          | 16 65             |
| TPA524 | GND                 |                   |
| TPA525 | GND                 |                   |
| TPA526 | POWER_GATE_EN       | 23 24 41          |
| TPA527 | PP3V3R3V0_AON       | 23 41 61          |
| TPA528 | HIPWR_EN            | 23 41             |
| TPA529 | PM_SLP_S3_L         | 15 30 46 49 50 51 |

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| 65 27 18 | SYSCLK_CLK24M_CAMERA | == | SYSCLK_CLK24M_CAMERA | 18 27 65                   |
|          |                      |    | MAKE_BASE=TRUE       |                            |
| 24 23    | SMC_UART_TX          | == | TRUE                 | SMC_DEBUGPRT_TX_L 30 31 65 |
| 24 23    | SMC_UART_RX          | == | TRUE                 | SMC_DEBUGPRT_RX_L 30 31 65 |

NO\_TEST Nets

|       |                     |           |      |                           |
|-------|---------------------|-----------|------|---------------------------|
|       | NO_TEST             | MAKE_BASE |      |                           |
| 65 16 | NC_USB3_EXTB_D2RP   | ==        | TRUE | NC_USB3_EXTB_D2RP 16 65   |
| 65 16 | NC_USB3_EXTB_D2RN   | ==        | TRUE | NC_USB3_EXTB_D2RN 16 65   |
| 65 16 | NC_USB3_EXTB_R2D_CP | ==        | TRUE | NC_USB3_EXTB_R2D_CP 16 65 |
| 65 16 | NC_USB3_EXTB_R2D_CN | ==        | TRUE | NC_USB3_EXTB_R2D_CN 16 65 |
| 65 16 | NC_USB_EXTBP        | ==        | TRUE | NC_USB_EXTBP 16 65        |
| 65 16 | NC_USB_EXTBN        | ==        | TRUE | NC_USB_EXTBN 16 65        |
| 65 16 | NC_USB3_EXTC_D2RP   | ==        | TRUE | NC_USB3_EXTC_D2RP 16 65   |
| 65 16 | NC_USB3_EXTC_D2RN   | ==        | TRUE | NC_USB3_EXTC_D2RN 16 65   |
| 65 16 | NC_USB3_EXTC_R2D_CP | ==        | TRUE | NC_USB3_EXTC_R2D_CP 16 65 |
| 65 16 | NC_USB3_EXTC_R2D_CN | ==        | TRUE | NC_USB3_EXTC_R2D_CN 16 65 |
| 65 16 | NC_USB_EXTCP        | ==        | TRUE | NC_USB_EXTCP 16 65        |
| 65 16 | NC_USB_EXTCN        | ==        | TRUE | NC_USB_EXTCN 16 65        |
| 65 16 | NC_USB3_EXTD_D2RP   | ==        | TRUE | NC_USB3_EXTD_D2RP 16 65   |
| 65 16 | NC_USB3_EXTD_D2RN   | ==        | TRUE | NC_USB3_EXTD_D2RN 16 65   |
| 65 16 | NC_USB3_EXTD_R2D_CP | ==        | TRUE | NC_USB3_EXTD_R2D_CP 16 65 |
| 65 16 | NC_USB3_EXTD_R2D_CN | ==        | TRUE | NC_USB3_EXTD_R2D_CN 16 65 |
| 65 16 | NC_USB_EXTDP        | ==        | TRUE | NC_USB_EXTDP 16 65        |
| 65 16 | NC_USB_EXTDN        | ==        | TRUE | NC_USB_EXTDN 16 65        |

D

C

B

A

|                        |  |                      |  |
|------------------------|--|----------------------|--|
| SYNC_MASTER=J41 MLB    |  | SYNC_DATE=10/24/2012 |  |
| PAGE TITLE             |  |                      |  |
| Project FCT/NC/Aliases |  |                      |  |
| DRAWING NUMBER         |  | SIZE                 |  |
| <SCH_NUM>              |  | D                    |  |
| REVISION               |  |                      |  |
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## Change List:

<radar://component/633819> X260 HW EE Schematic | Proto 0  
<radar://component/634034> X260 HW EE Schematic | Proto 1  
<radar://component/634038> X260 HW EE Schematic | Proto 2  
<radar://component/634042> X260 HW EE Schematic | EVT  
<radar://component/634046> X260 HW EE Schematic | DVT

## Kismet:


<afp://kismet.apple.com/Kismet-Projects/>

## Useful Wiki Links:

Schematic Conventions - <<https://hmts.ecs.apple.com/wiki/index.php/User:Wferry/SchConventions>>  
Schematic Design Wiki - <[https://hmts.ecs.apple.com/wiki/index.php/Schematic\\_Design](https://hmts.ecs.apple.com/wiki/index.php/Schematic_Design)>

## Other Info:

Page Allocations - <radar:19817053> 2015 Mobile Mac Schematic Page Allocations

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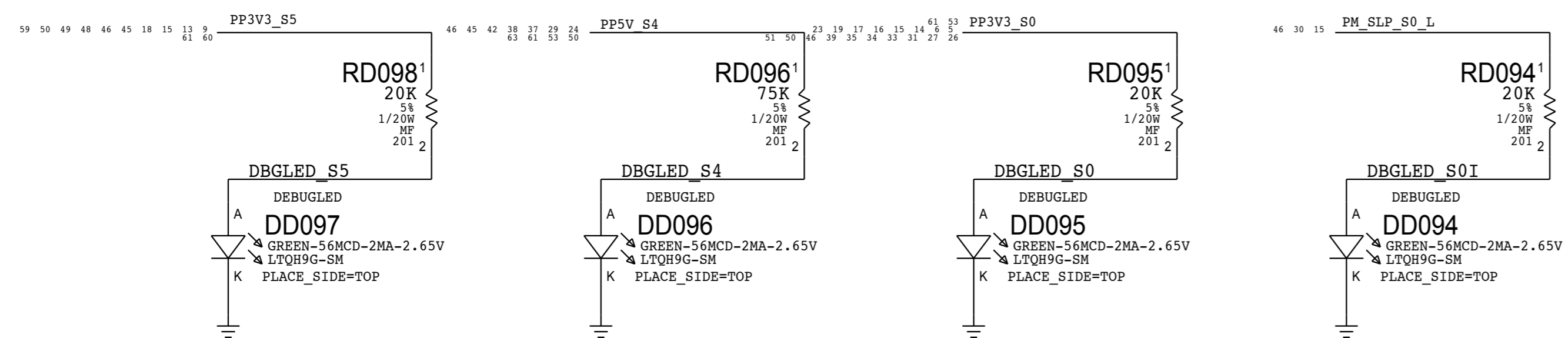
4

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### Power State Debug LEDs



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C

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