

COMPAL CONFIDENTIAL

MODEL NAME : BAL21

PCB NO : DAZ1PJ00100 (DA6001KR000)

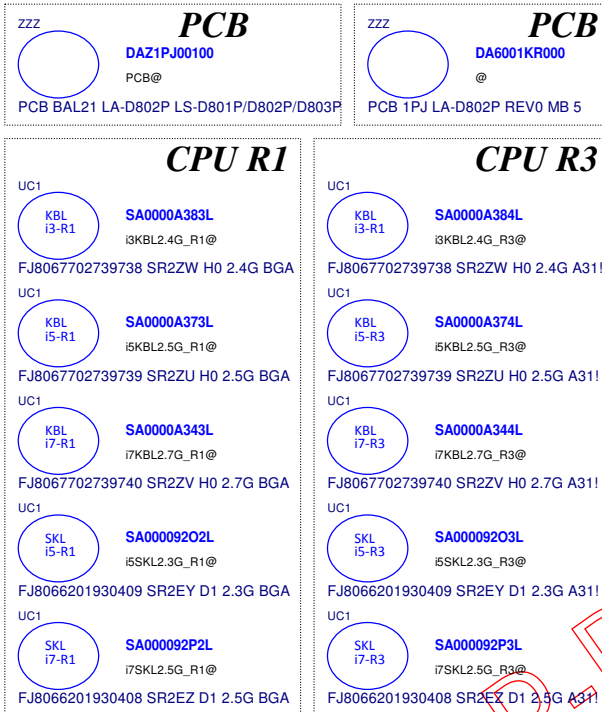
BOM P/N : 431A2Q31L01

SMT MB AD802 BAL21 KBL ES UMA

SKL-U+MEC1404 board

2016-06-21

REV : 1.0 (A00)



@ : Un-pop Component
UMA@/DIS@ : UMA & DIS Type
DSX@/N_DSX@ : DSX Mode

EMI@/ESD@/RF@ : EMI, ESD and RF Component
@EMI@/@ESD@/@RF@ : EMI, ESD and RF Nopop Component
CMC@ : XDP Component
CONN@ : Connector Component
TP_WAKE@/NTP_WAKE@ : TouchPad wake
KBL@ : KB Backlight
3D@ : 3D Camera

Layout Dell logo



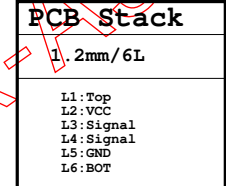
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REV: X00
PWB: 9HTP8

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POWER STATES

| Signal State | SLP S3# | SLP S4# | SLP S5# | ALWAYS PLANE | SUS PLANE | RUN PLANE | CLOCKS |
|---------------------------|------------|------------|------------|-----------------|--------------|--------------|--------|
| S0 (Full ON) / M0 | HIGH | HIGH | HIGH | ON | ON | ON | ON |
| S3 (Suspend to RAM) / M3 | LOW | HIGH | HIGH | ON | ON | OFF | OFF |
| S4 (Suspend to DISK) / M3 | LOW | LOW | HIGH | ON | OFF | OFF | OFF |
| S5 (SOFT OFF) / M3 | LOW | LOW | LOW | ON | OFF | OFF | OFF |
| G3 | OFF | OFF | OFF | OFF | OFF | OFF | OFF |

| USB PORT# | DESTINATION |
|-----------|--------------|
| 1 | USB3.0 Port1 |
| 2 | USB3.0 Port2 |
| 3 | IO/DB |
| 4 | N/A |
| 5 | CCD |
| 6 | Card Reader |
| 7 | Touch Screen |
| 8 | BT |
| 9 | N/A |
| 10 | N/A |

| USB3.0 | SSIC | PCIE | SATA | DESTINATION |
|----------|--------|---------|---------|--------------|
| USB3.0-1 | | | | USB3.0 Port1 |
| USB3.0-2 | SSIC-1 | | | USB3.0 Port2 |
| USB3.0-3 | SSIC-2 | | | 3D Camera |
| USB3.0-4 | | | | N/A |
| USB3.0-5 | | PCIE-1 | | GPU |
| USB3.0-6 | | PCIE-2 | | GPU |
| | | PCIE-3 | | GPU |
| | | PCIE-4 | | GPU |
| | | PCIE-5 | | WLAN |
| | | PCIE-6 | | 10/100M LAN |
| | | PCIE-7 | SATA-0 | SATA HDD |
| | | PCIE-8 | SATA-1 | SATA SSD |
| | | PCIE-9 | | N/A |
| | | PCIE-10 | | N/A |
| | | PCIE-11 | SATA-1* | N/A |
| | | PCIE-12 | SATA-2 | N/A |

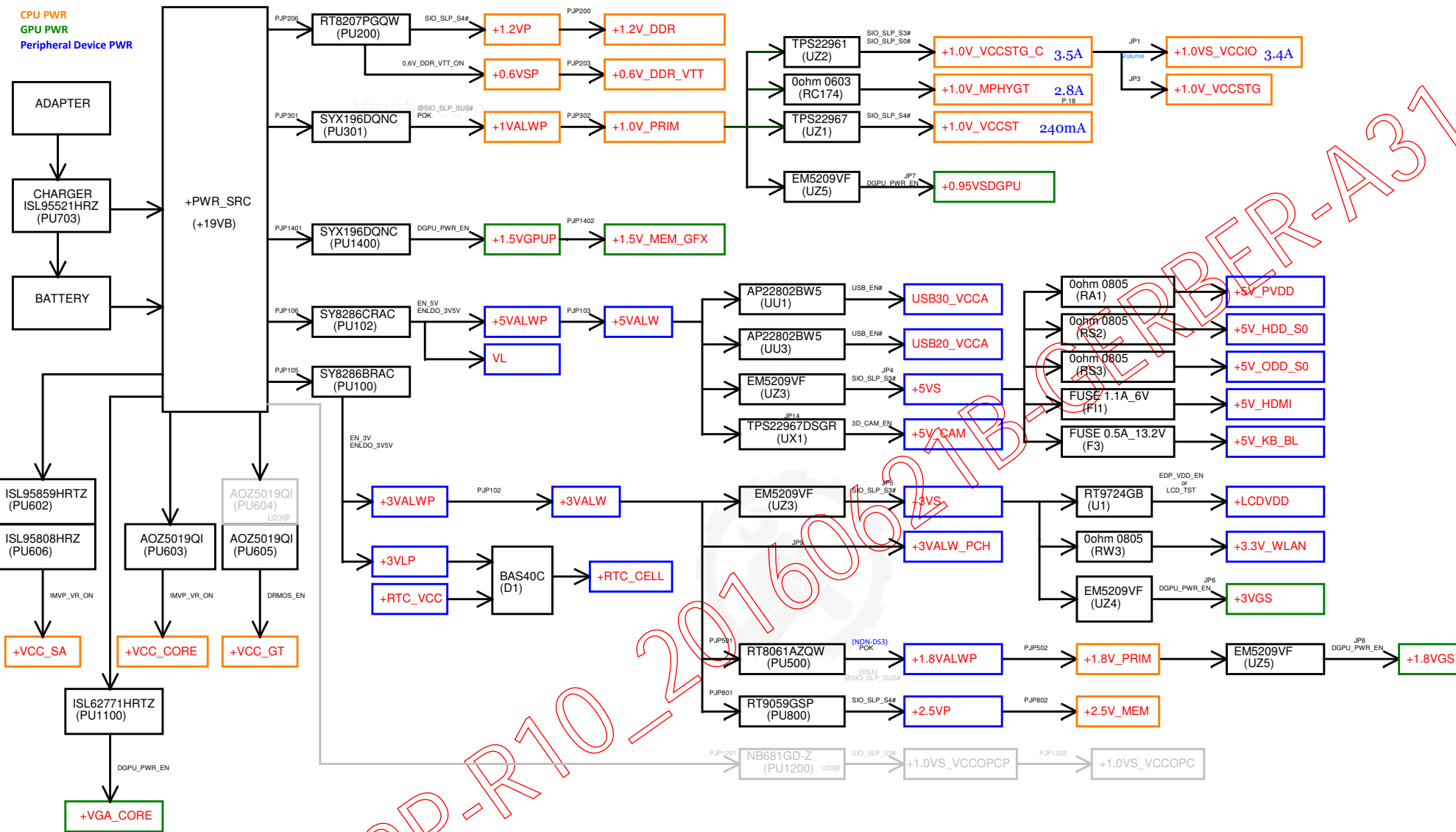
PM TABLE

| State power plane | +RTC_CELL | B+ | +1.0V_PRIM +1.0V_MPHYGT +1.8V_PRIM +3VALW +3VALW_PCH +3.3V_ALW_DSW +5VALW | +1.0V_VCCST +1.2V_DDR +2.5V_MEM | +1.0VS_VCCIO +1.0V_VCCSTG +VCC_GT +VCC_SA +VGA_CORE +VCC_CORE +0.6V_DDR_VTT |
|--------------------------|-----------|-----|---|---------------------------------------|---|
| S0 | ON | ON | ON | ON | ON |
| S3 | ON | ON | ON | ON | OFF |
| M3 | ON | ON | ON | ON | OFF |
| S4&S5 / AC | ON | ON | ON | OFF | OFF |
| S4&S5 / AC doesn't exist | ON | ON | OFF | OFF | OFF |
| G3 | ON | OFF | OFF | OFF | OFF |

Board ID & Model ID table

| Item | Pull-down | Pull-up | Voltage | Board ID/Model ID |
|------|-----------|---------|---------|-------------------|
| 1 | 100 | 10.0 | 3.000 | EVT |
| 2 | 100 | 13.7 | 2.902 | DVT1 |
| 3 | 100 | 17.8 | 2.801 | DVT2 |
| 4 | 100 | 22.1 | 2.703 | |
| 5 | 100 | 27.0 | 2.598 | |
| 6 | 100 | 32.4 | 2.492 | |
| 7 | 100 | 37.4 | 2.402 | |
| 8 | 100 | 49.9 | 2.201 | |
| 9 | 100 | 57.6 | 2.094 | |
| 10 | 100 | 64.9 | 2.001 | |
| 11 | 100 | 73.2 | 1.905 | |
| 12 | 100 | 82.5 | 1.808 | |
| 13 | 100 | 93.1 | 1.709 | |
| 14 | 100 | 107.0 | 1.594 | |
| 15 | 100 | 120.0 | 1.500 | |
| 16 | 100 | 137.0 | 1.392 | |
| 17 | 100 | 154.0 | 1.299 | |
| 18 | 100 | 200.0 | 1.100 | |
| 19 | 100 | 232.0 | 0.994 | |

CPU PWR
GPU PWR
Peripheral Device PWR



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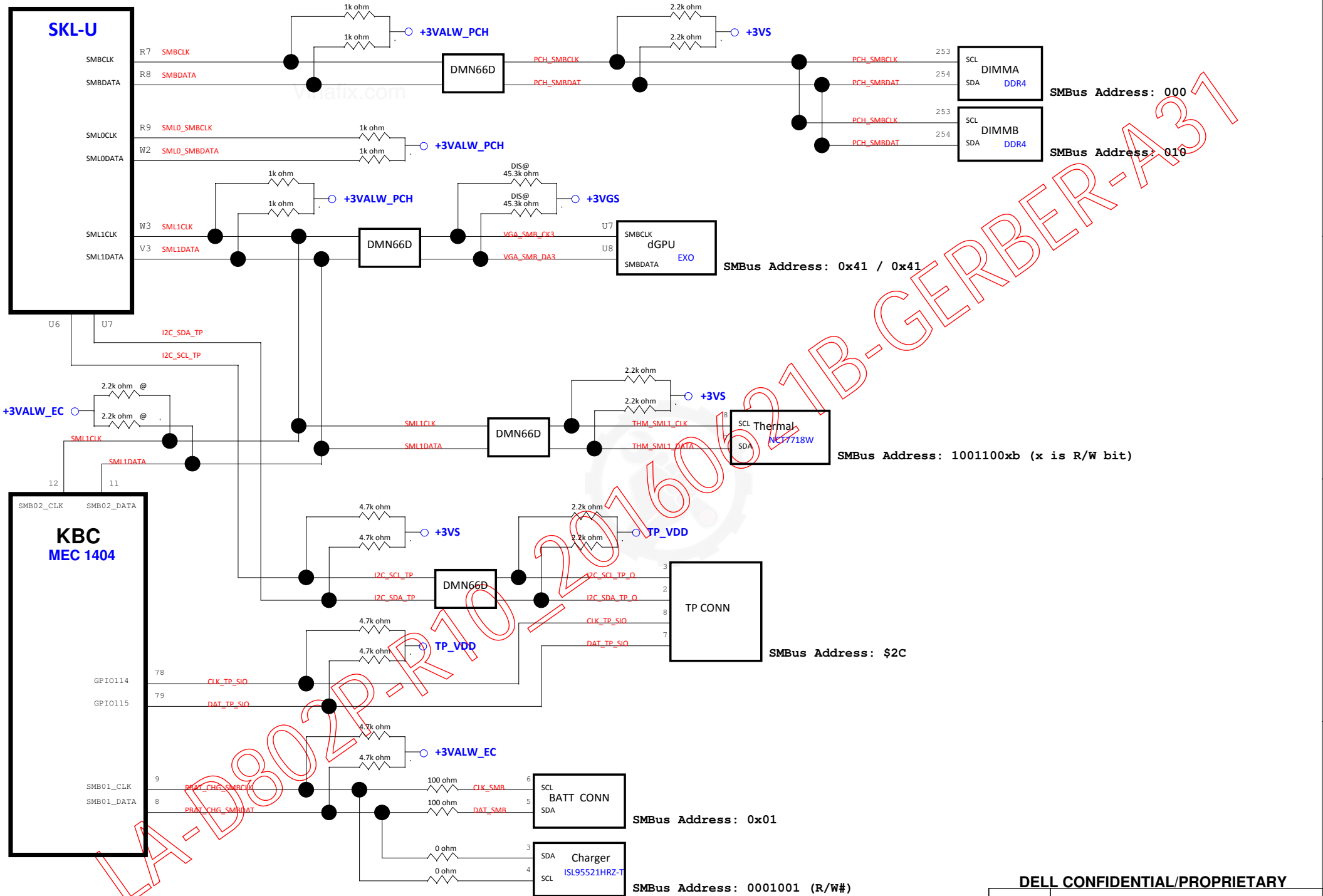
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Power Rail

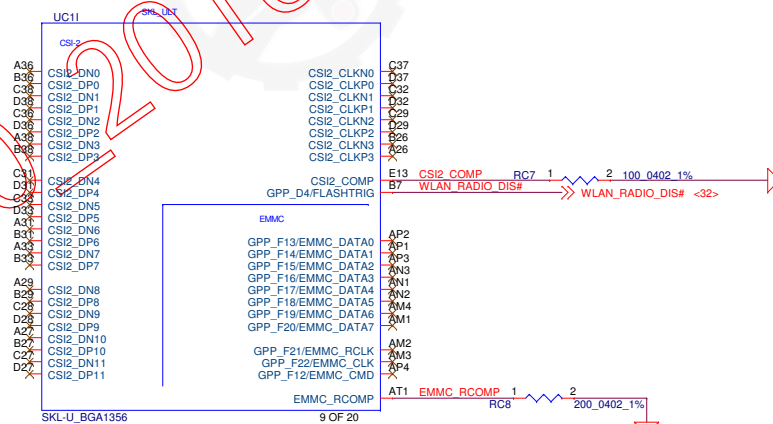
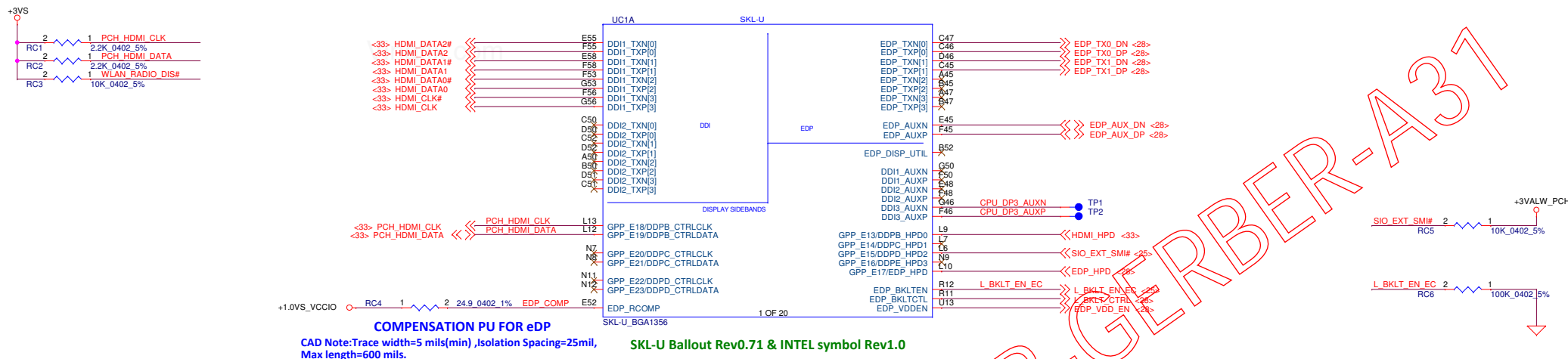
Size Document Number
LA-D802P

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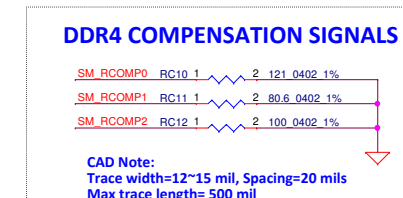
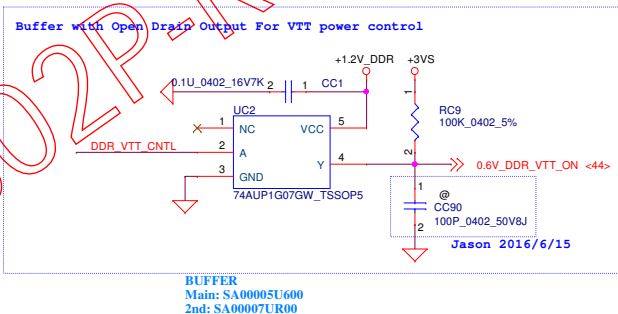
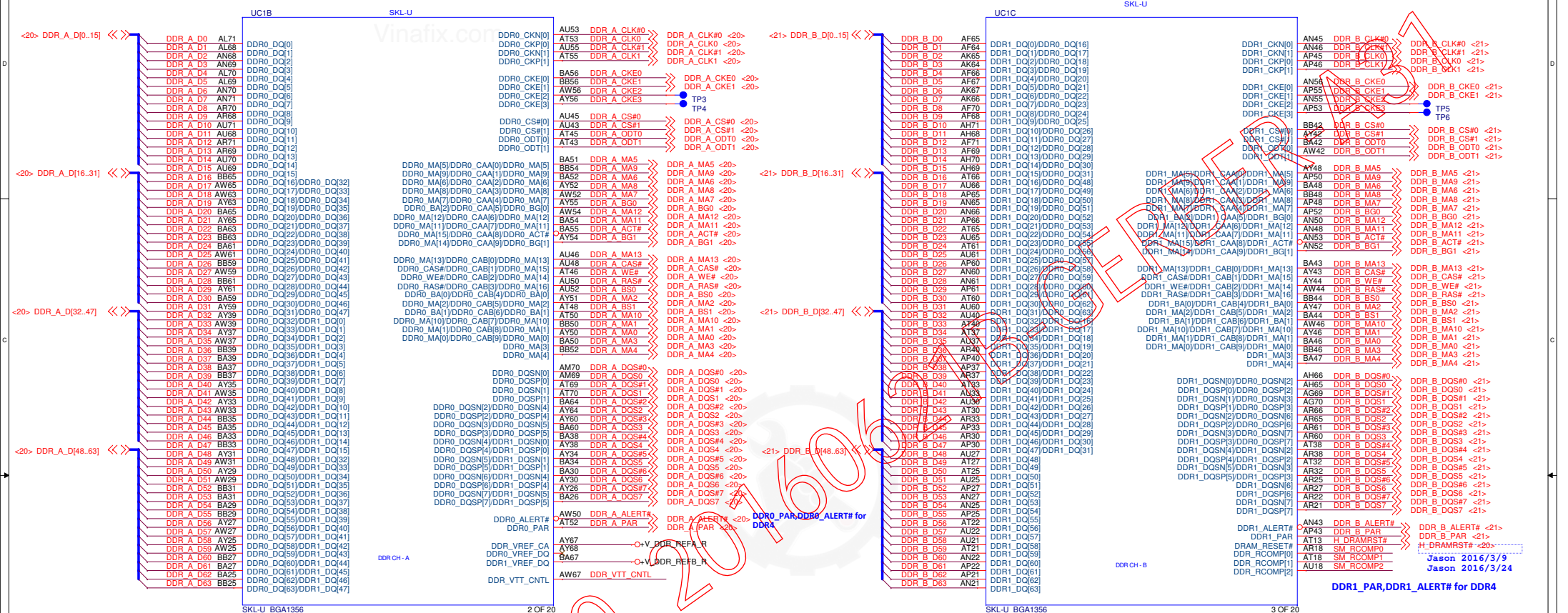
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| | | | |
|-------|------------------------|----------------------------|---------|
| Title | | MCP(1/14)DDI,EDP,CSI2,EMMC | |
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DDR4 Interleaved Memory

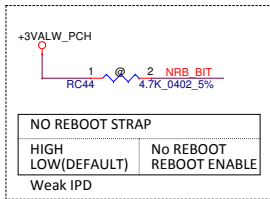
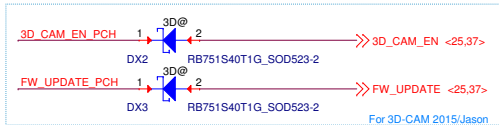
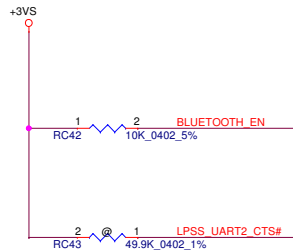


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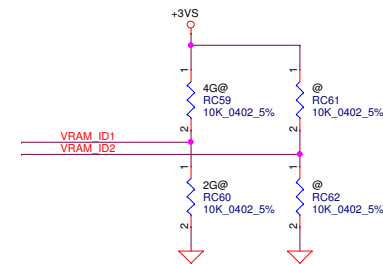
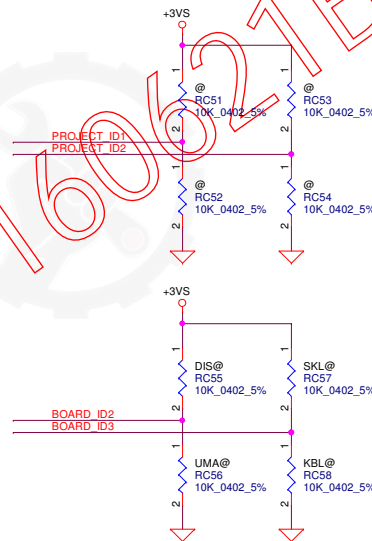
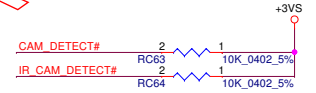
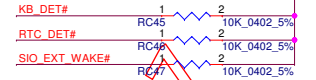
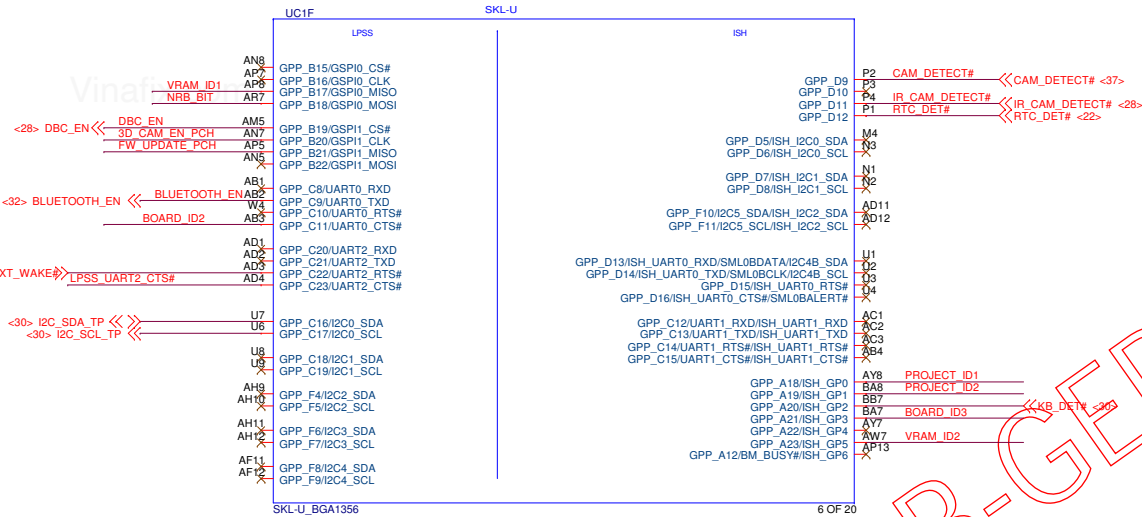
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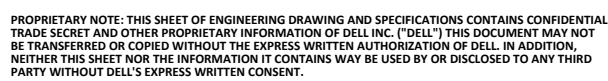
| NO REBOOT STRAP | |
|-----------------|---------------|
| HIGH | No REBOOT |
| LOW(DEFAULT) | REBOOT ENABLE |
| Weak IPD | |

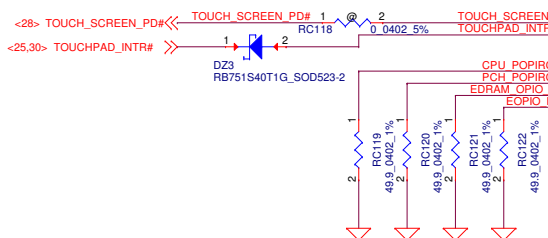
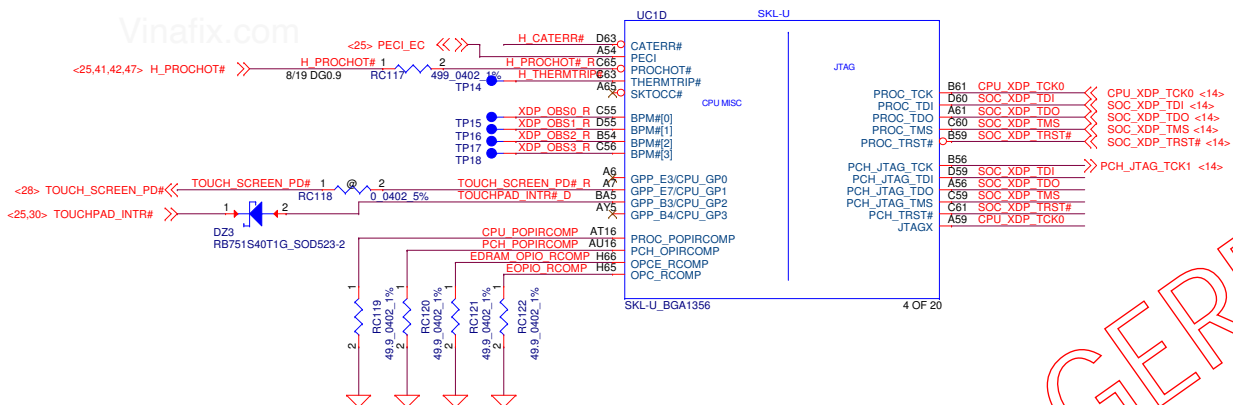
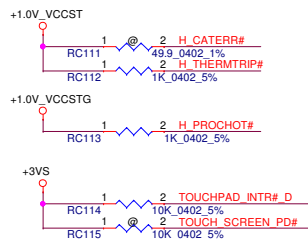


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| Title | MCP(4/14)GSPI,I2C,UART,ISH |
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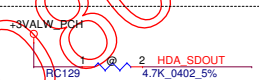
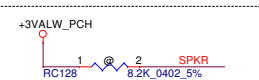
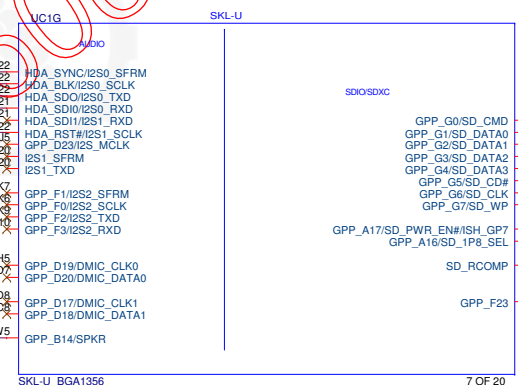
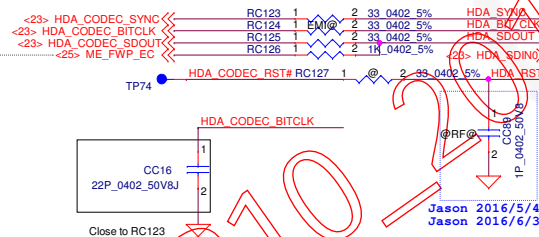
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ME_FWP_EC

- LOW = ENABLE -->ME lock, can't update ME
- HIGH = DISABLE -->ME un-lock, can update ME



| TOP SWAP STRAP | |
|----------------|---------|
| HIGH | DISABLE |
| LOW(DEFAULT) | ENABLE |

| Flash Descriptor Security override | |
|------------------------------------|---------|
| HIGH | DISABLE |
| LOW(DEFAULT) | ENABLE |

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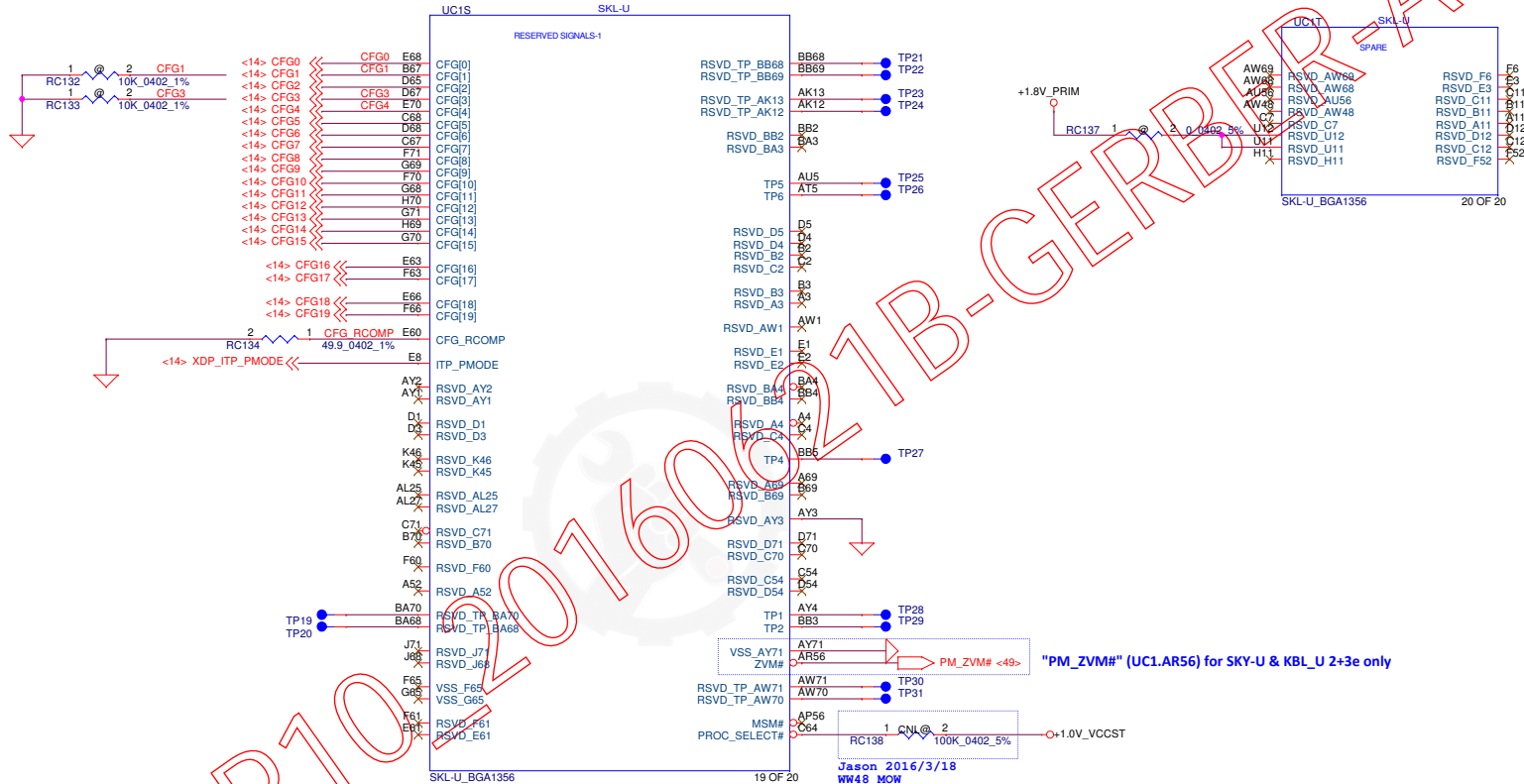
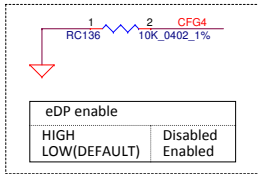


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| Title | |
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| MCP(7/14)MISC,JTAG,HDA,SDIO | |
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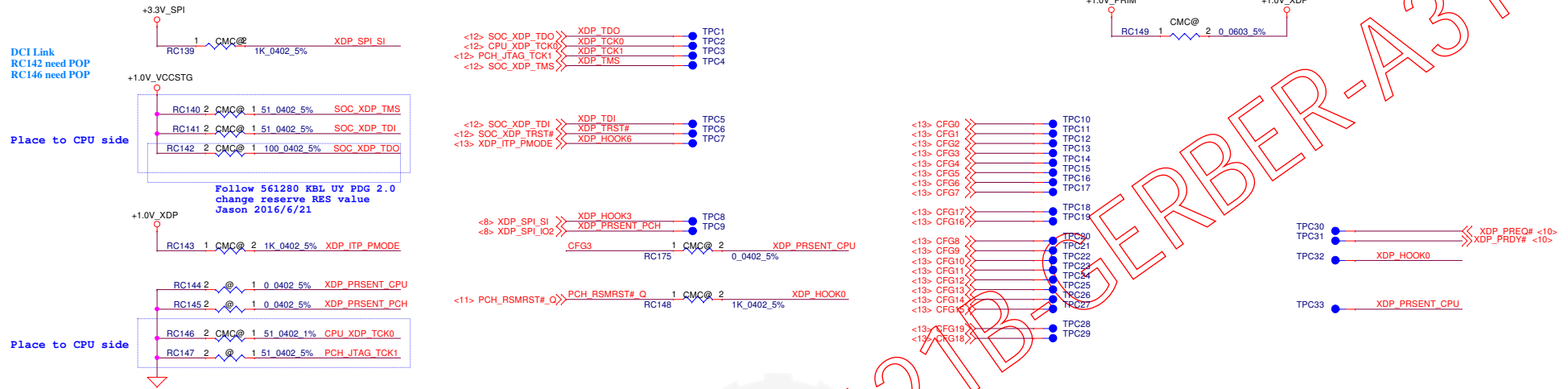
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Jason 2016/3/18
WW48 MOW
Cannonlake: Stuff 100k(RC138)
Skylake: Un-stuff 100k(RC138)
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| Title | | | |
| MCP(8/14)CFG.RSVD | | | |
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PRIMARY CMC CONN



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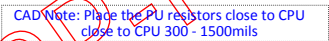
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| Title | | MCP(9/14)XDP | |
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+VCC_CORE +VCC_CORE



VCCOPC,VCCOPC_1P8,VCCEOPIO for SKYLAKE-U 2+3e
(w/ on package cache)



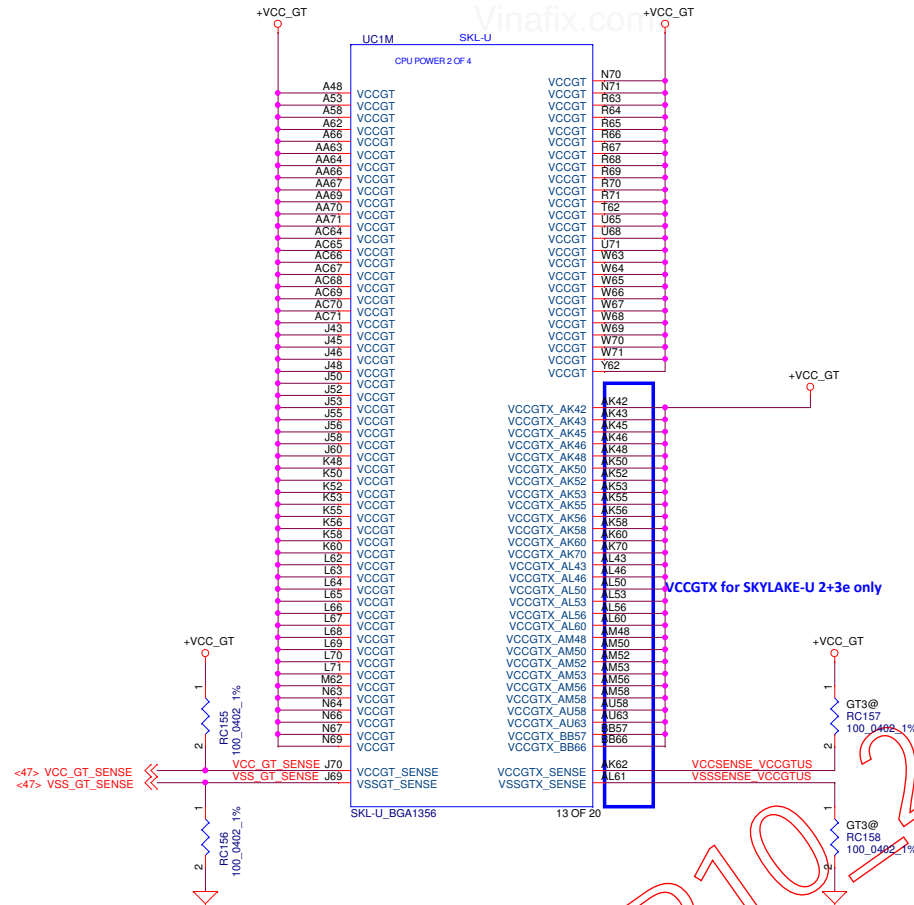
CAD Note: Place the PU resistors close to CPU
close to CPU 300 - 1500mils



| | | | |
|-------------------------------|------------------------|------------|----------|
| Title | | | |
| MCP(10/14)PWR-VCC CORE | | | |
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+VCCGT: 0.3~1.35V
+VCCGTx : 0.3~1.35V



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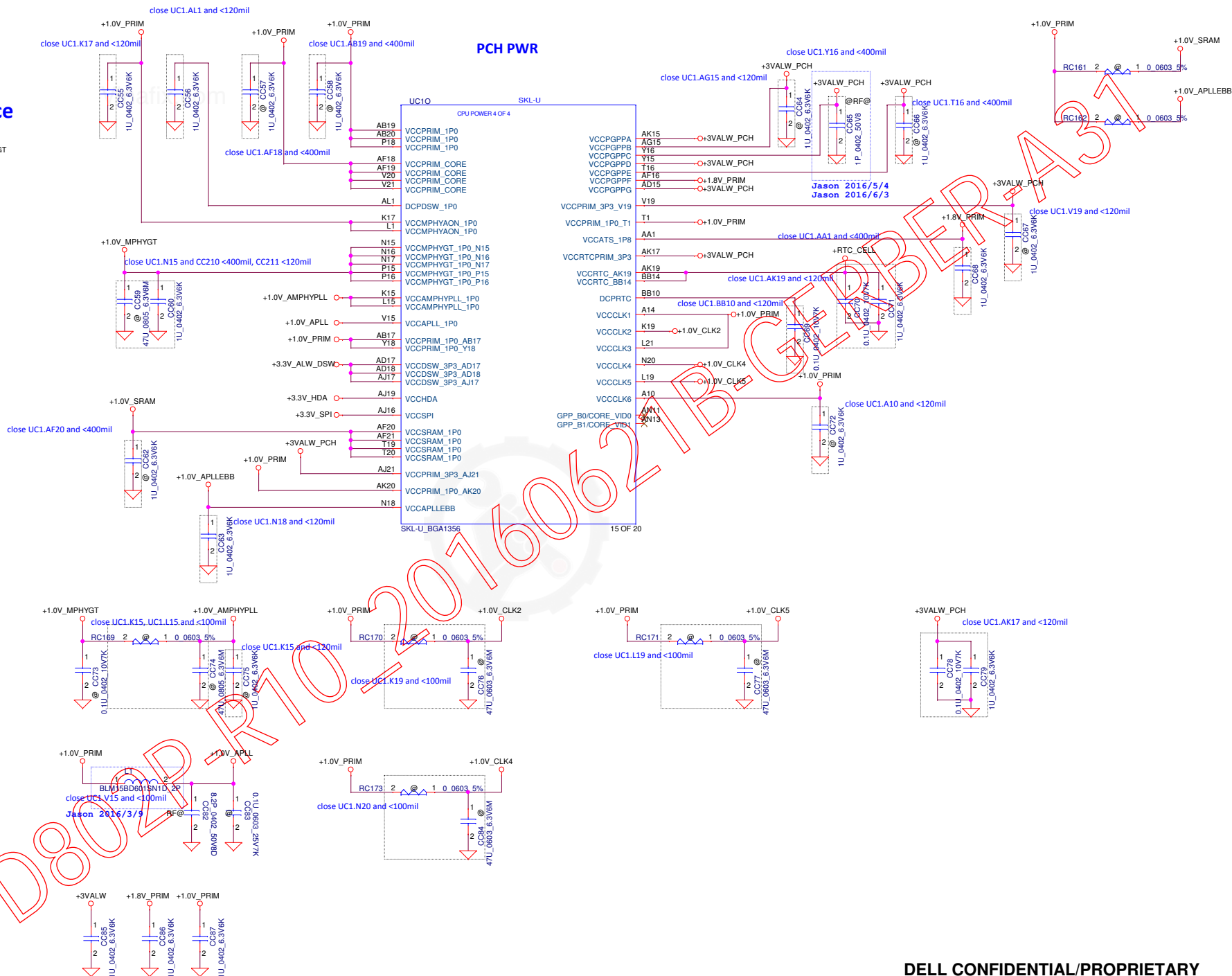
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| Title | | MCP(11/14)PWR-VCCGT | |
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+1.0V PRIM +1.0V_MPHYGT



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Title **MCP(13/14)PCH PWR**

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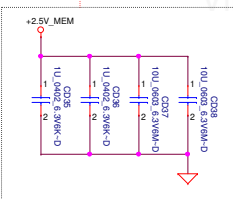
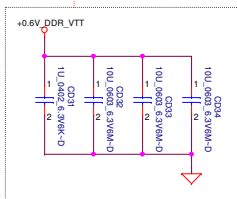


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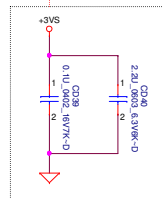
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Layout Note:
Place near JDIMM2.258

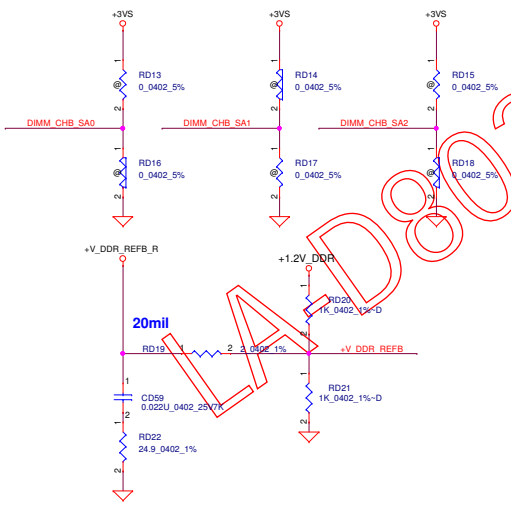
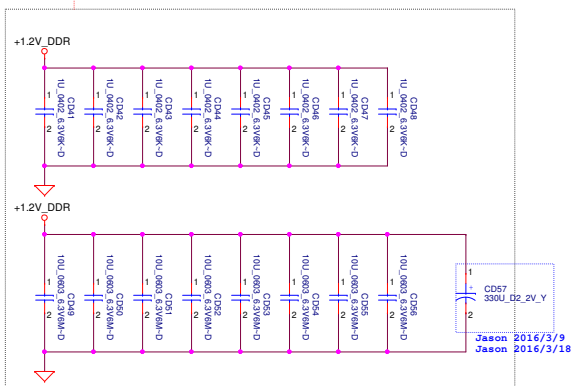
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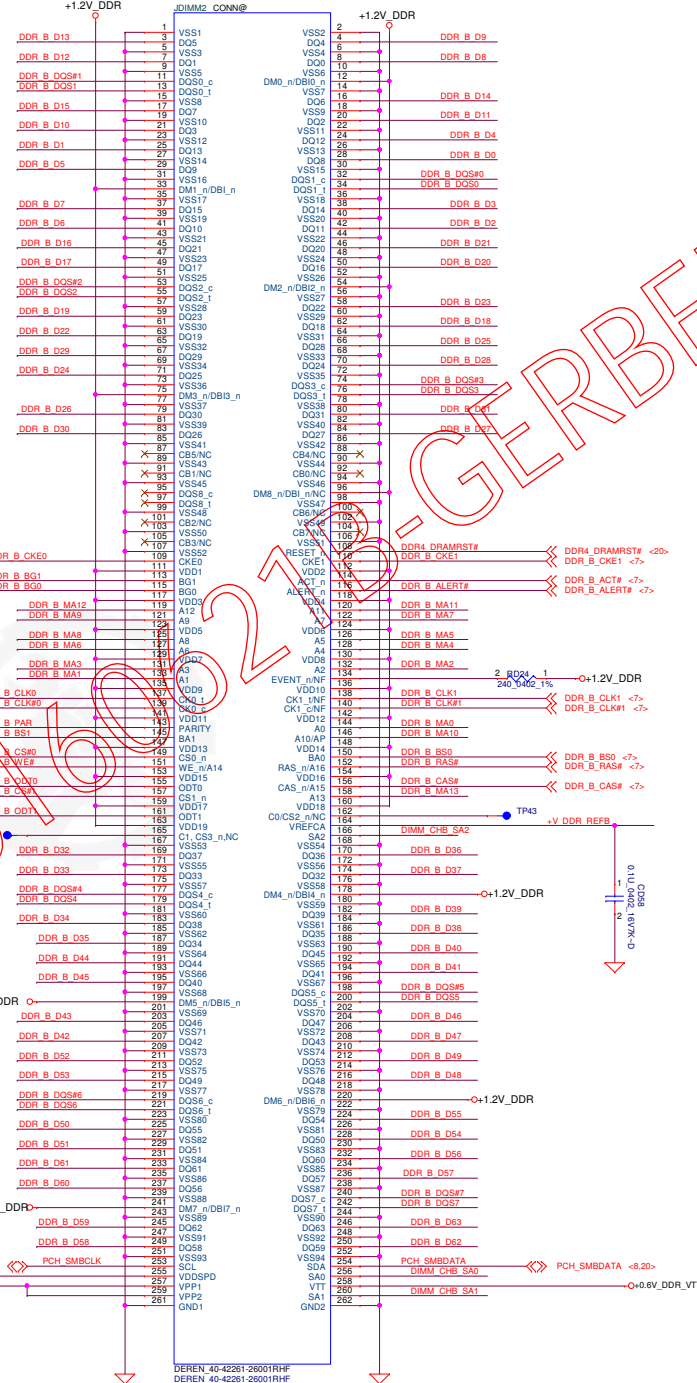
Layout Note:
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Layout Note:
Place near JDIMM2

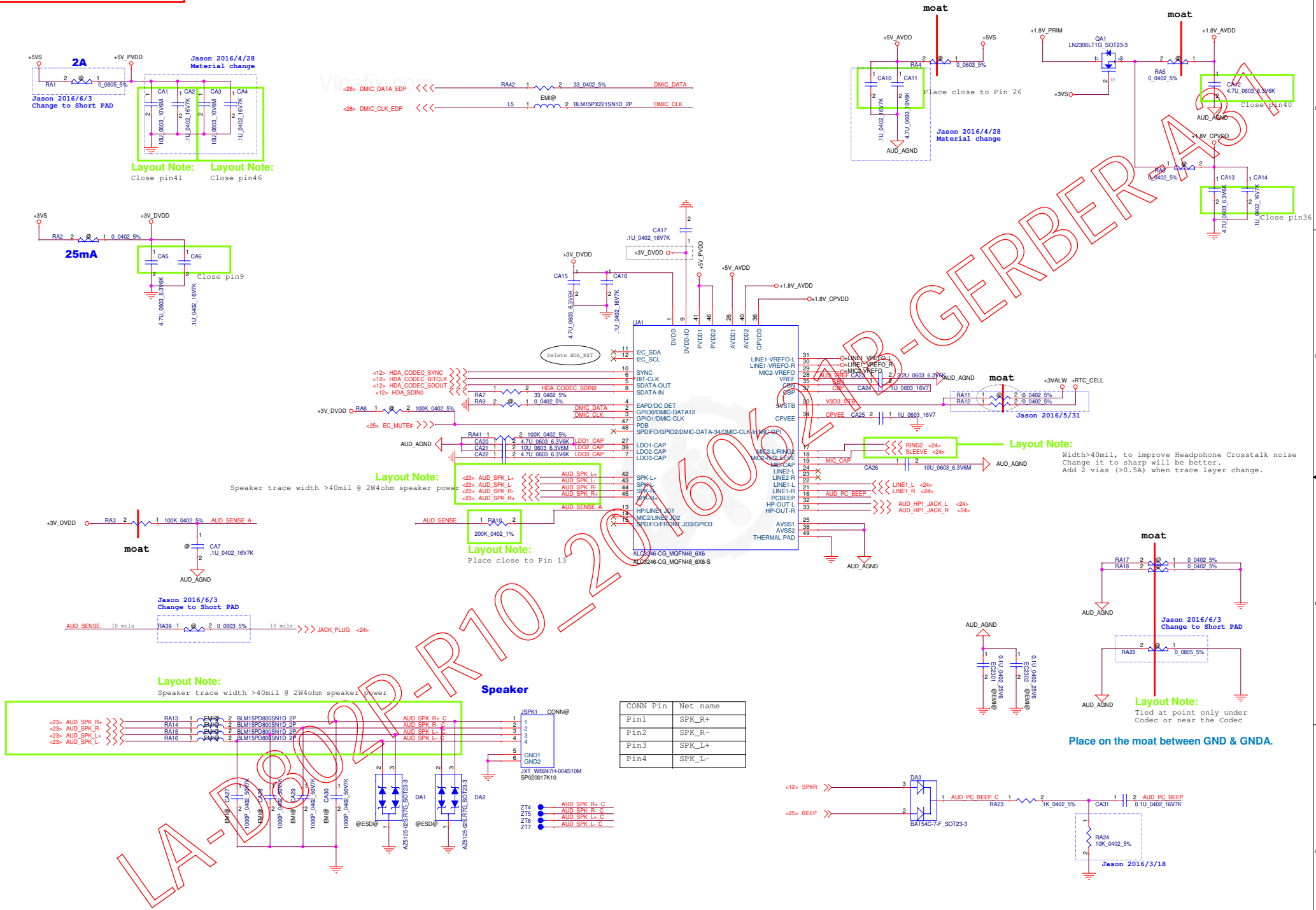


<7> DDR_B_D0[0..63]
<7> DDR_B_MA0[13]
<7> DDR_B_DQS[0..7]
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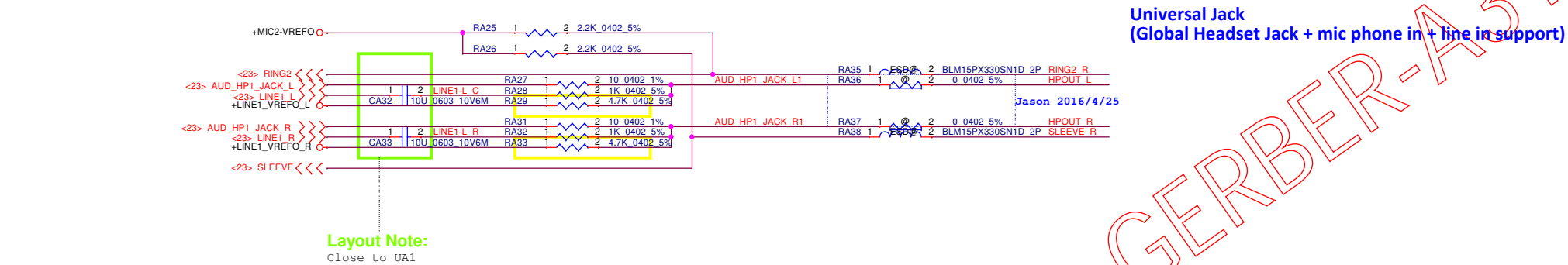


| Security Classification | | Compal Secret Data | | Title | |
|--|------------|--------------------|------------|------------------------|----------|
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | DDR4 DIMM STD | |
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| | | | | Date | Sheet |
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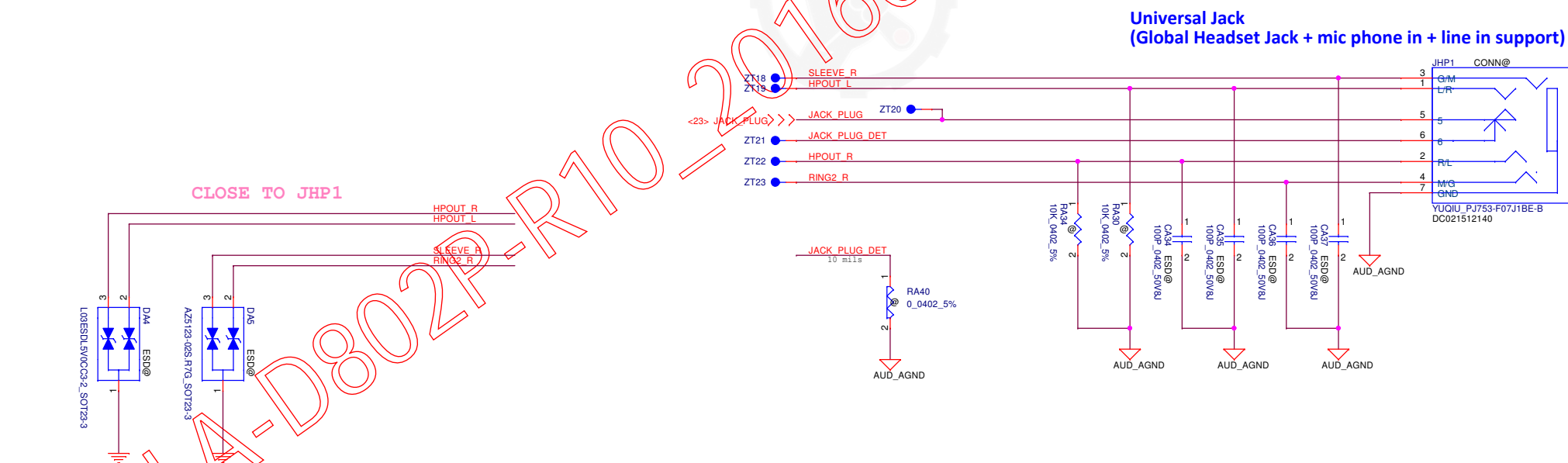
Main Func = Audio



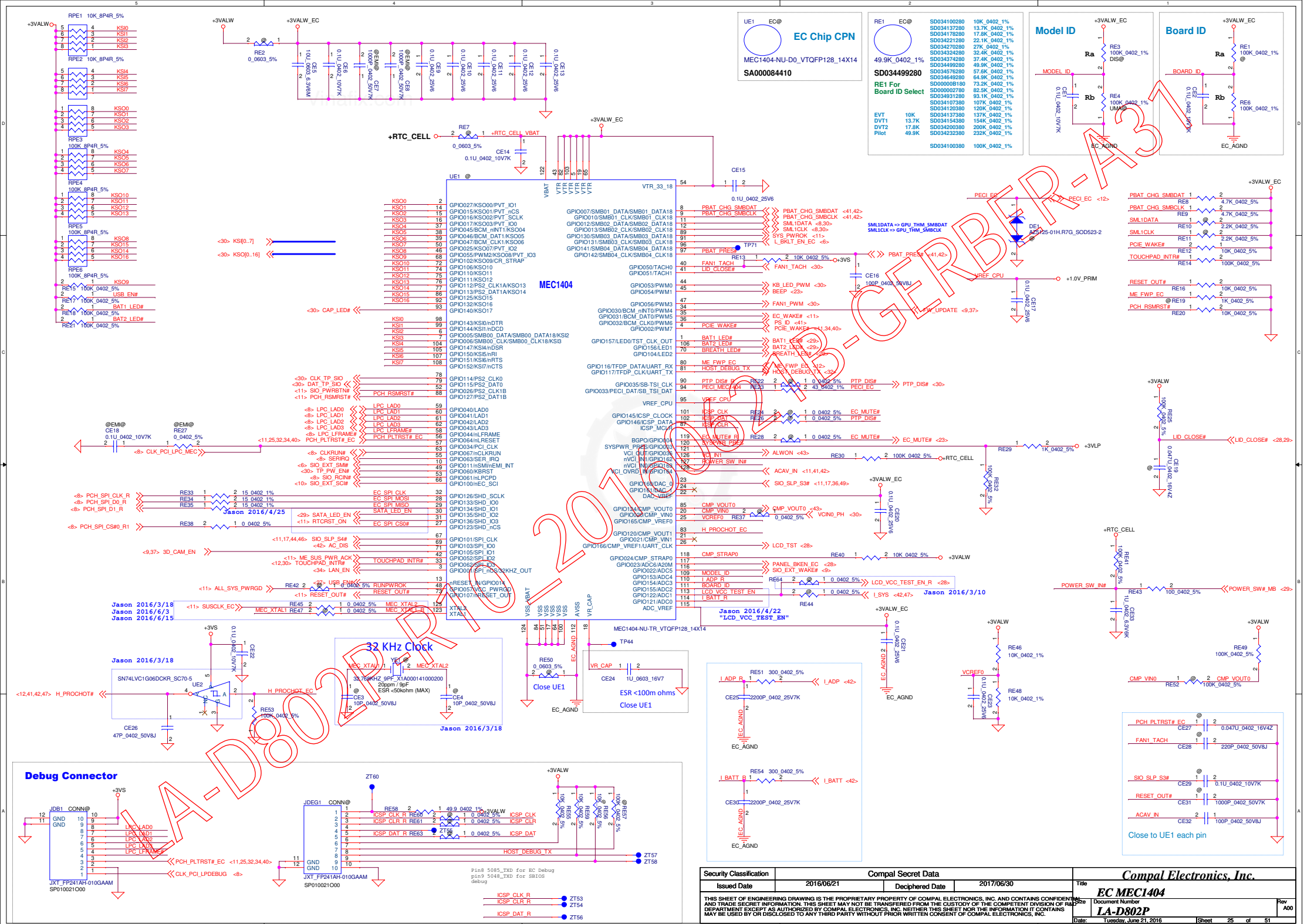
Main Func = Audio Jack



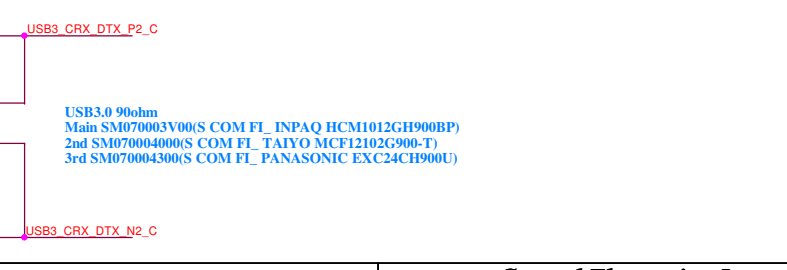
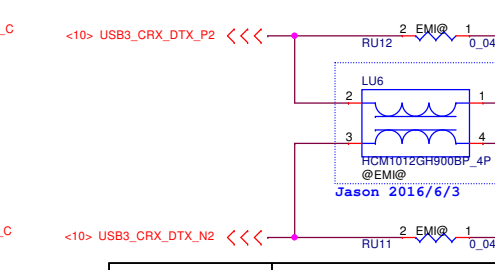
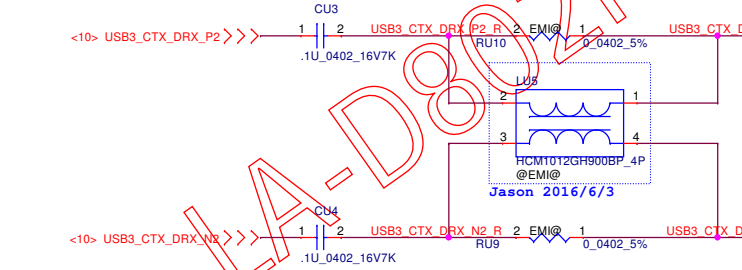
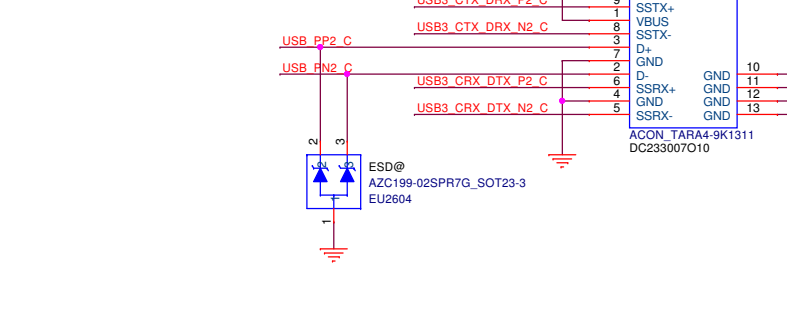
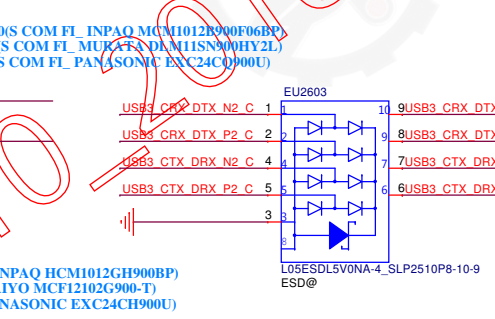
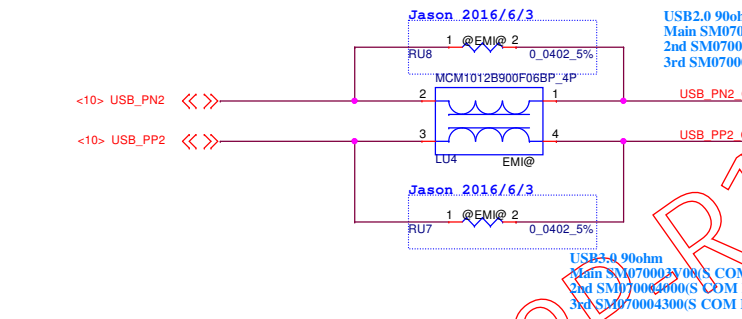
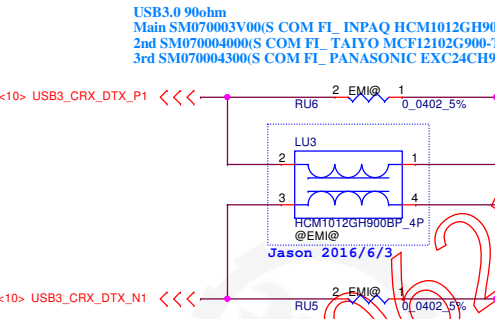
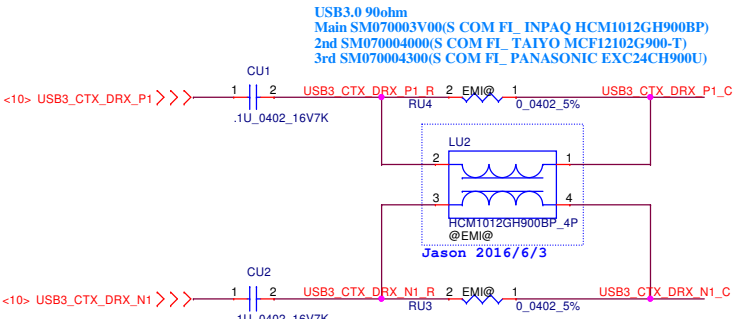
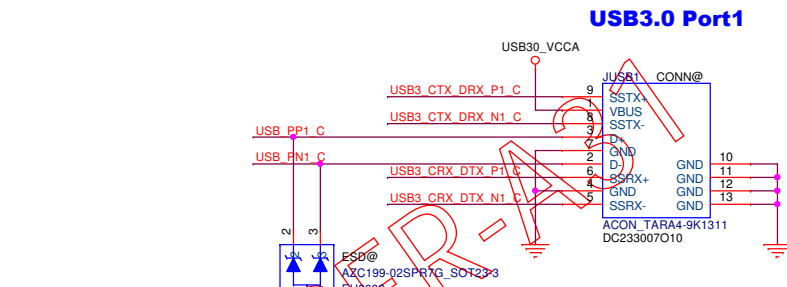
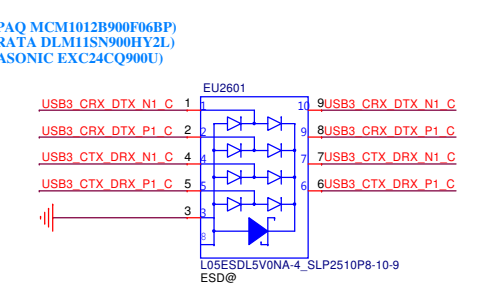
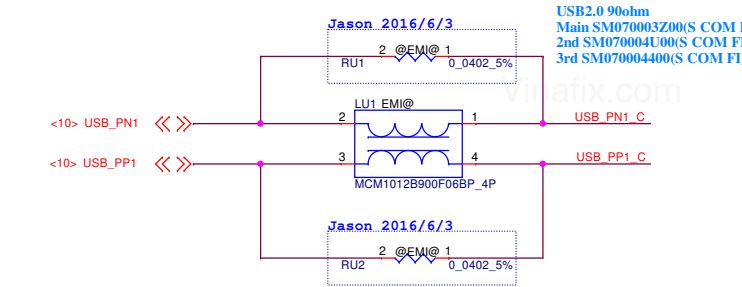
Main Func = Audio Jack



| | | | | | |
|---|------------|------------------------|------------|--------------------------|----------|
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| Size | | Document Number | | | Rev |
| LA-D802P | | LA-D802P | | | A00 |
| Date: | | Tuesday, June 21, 2016 | | Sheet | 24 of 51 |



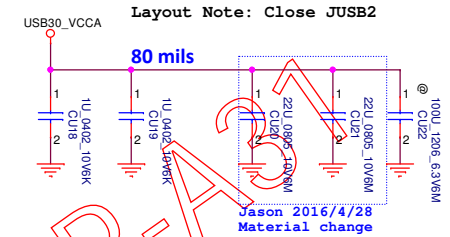
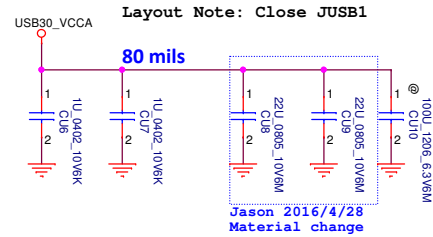
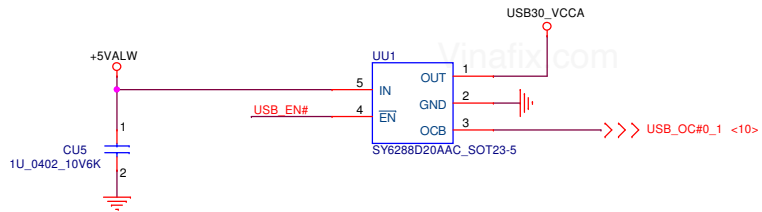
Main Func = USB3.0 Port1



| | | | | | |
|---|------------|------------------------|------------|--------------------------|--|
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| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | Title | |
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| Size | | Document Number | | Rev | |
| LA-D802P | | LA-D802P | | A00 | |
| Date | | Tuesday, June 21, 2016 | | Sheet 26 of 51 | |

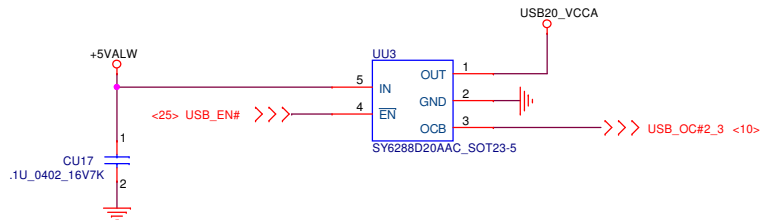
Main Func = USB3.0 Port1/Port2

SY6288D Support 2A

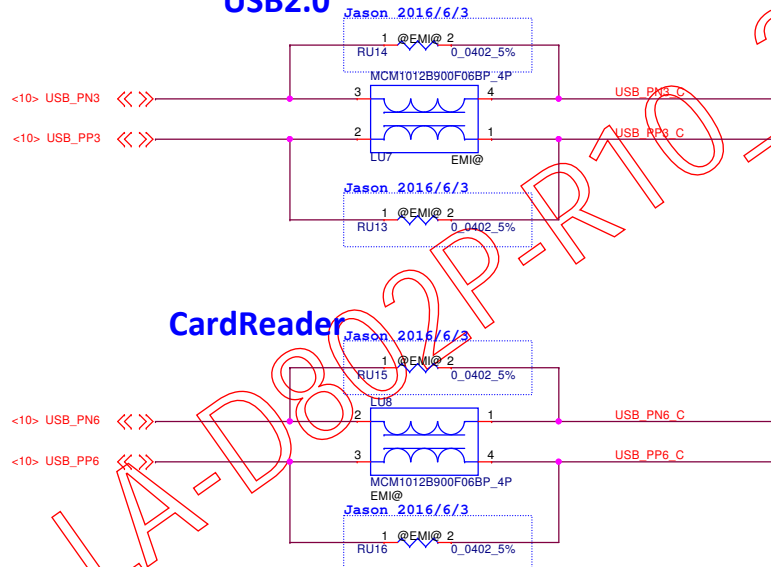


Main Func = USB3.0 Port3

SY6288D Support 2A

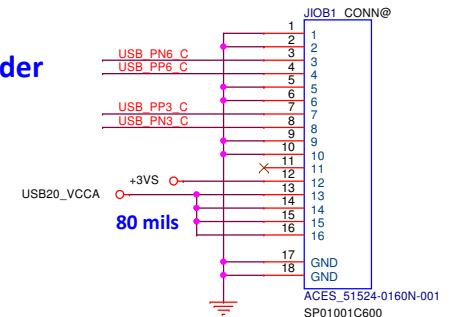


USB2.0



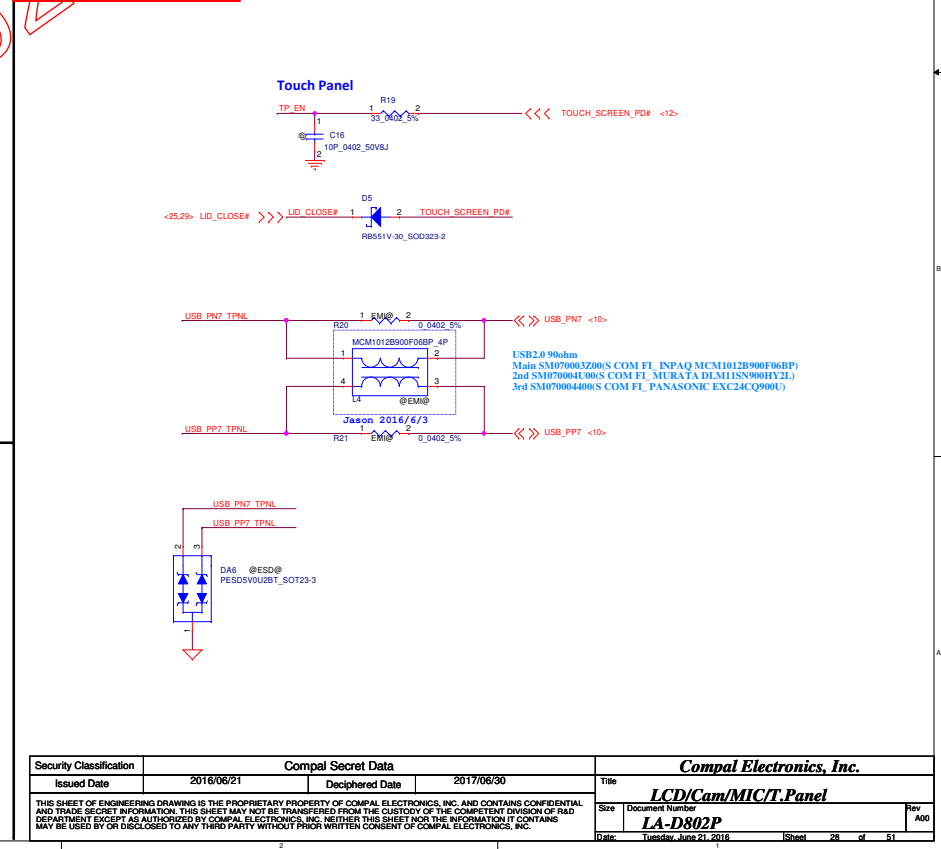
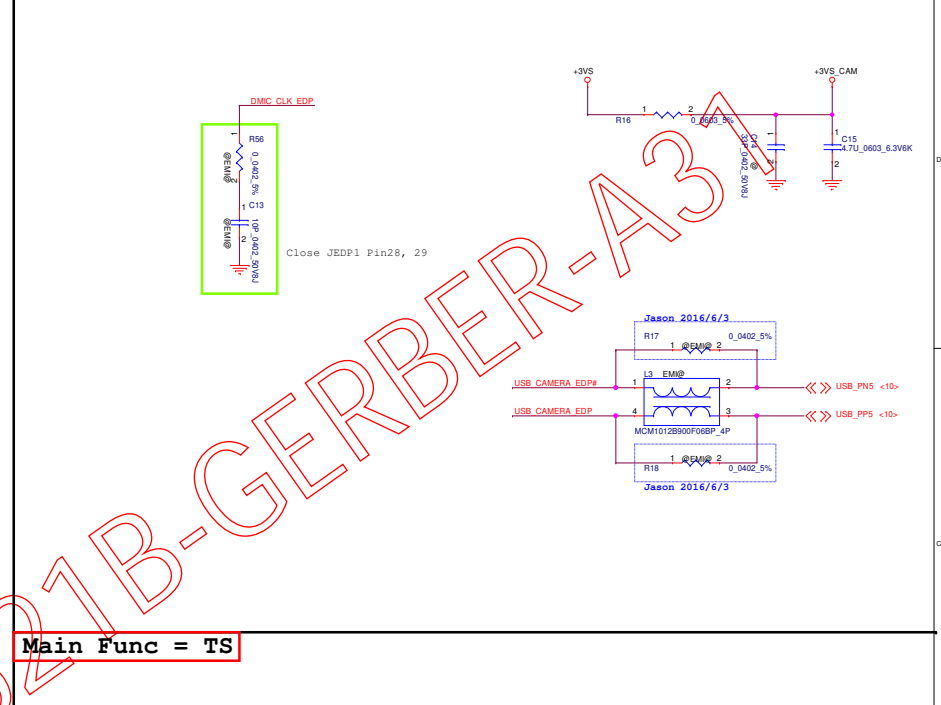
I/O Board Connector

CardReader
USB2.0



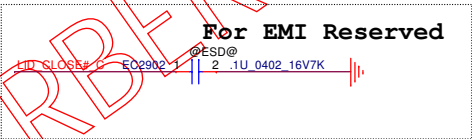
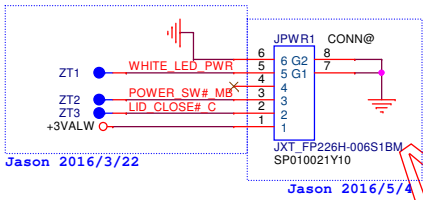
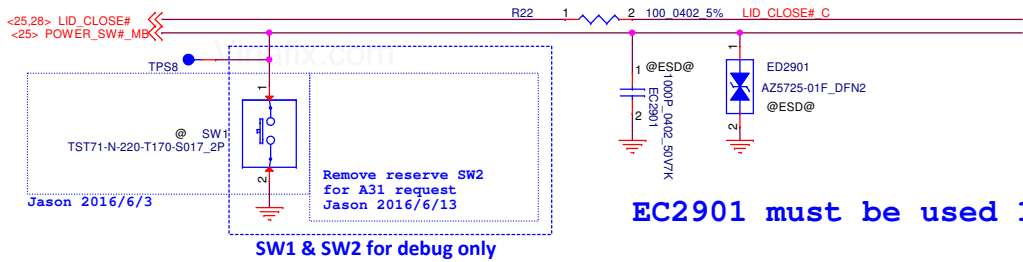
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|---|--|------------------------------|--|--------------------------|--|
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
| Issued Date | | 2016/06/21 | | Title | |
| Deciphered Date | | 2017/06/30 | | USB Power SW/IO Board | |
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| | | LA-D802P | | Rev | |
| | | Date: Tuesday, June 21, 2016 | | Sheet 27 of 51 | |

Main Func = CAM



| | | | | | |
|--|------------|--------------------|------------|---|-----------------|
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| | | | | LCD/Cam/MIC/T Panel LA-D802P | |
| | | | | Rev | A00 |
| Date: | | | | Tuesday, June 21, 2016 | Sheet 28 of 51 |

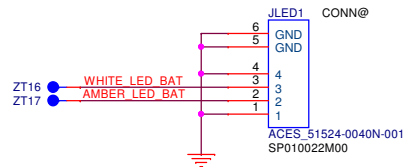
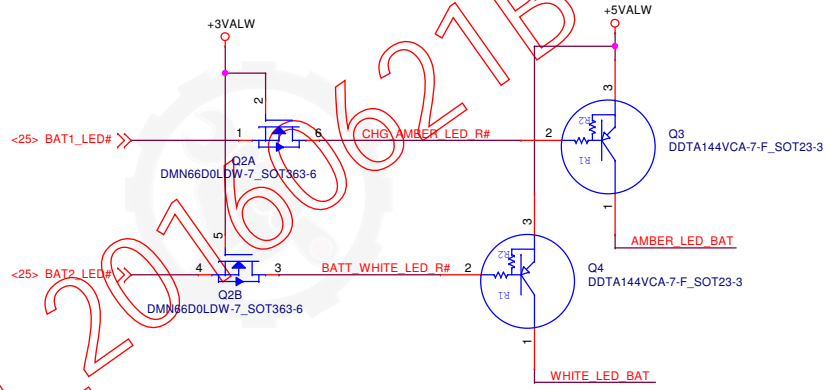
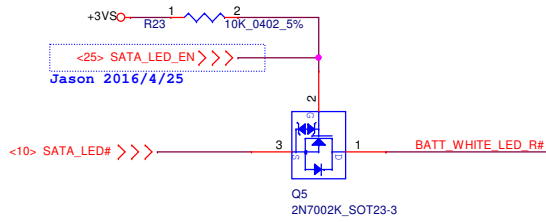
Main Func = Power BTN



Main Func = Battery LED

Low actived from KBC GPIO

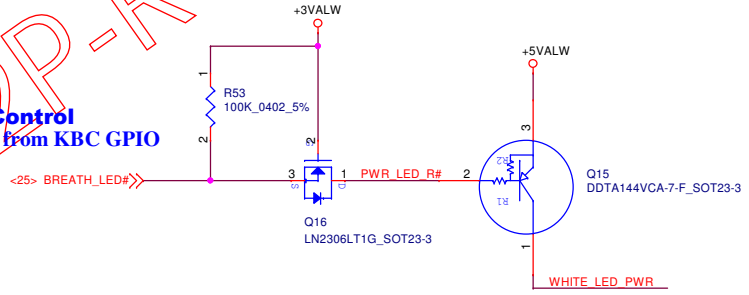
BJT
R1: 47 K
R2: 10 K



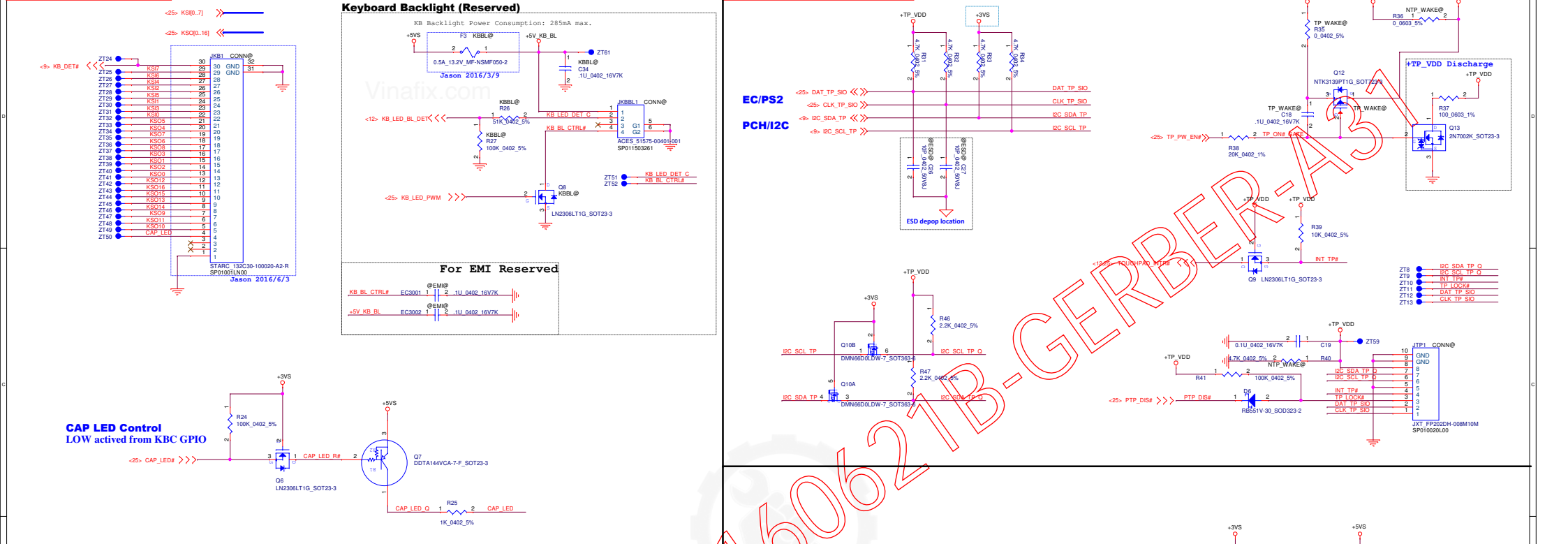
Main Func = PWR LED

Low actived from KBC GPIO

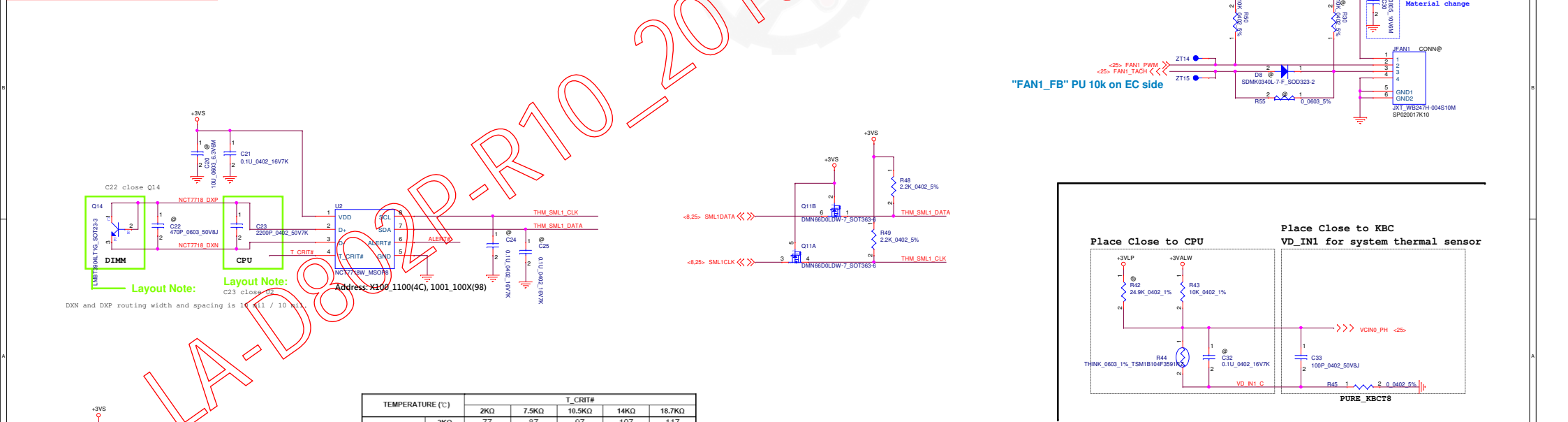
PWR LED Control
LOW actived from KBC GPIO



| | | | | |
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| Size | Document Number | Rev | | A00 |
| LA-D802P | | Date: | | Tuesday, June 21, 2016 |
| Sheet | | 29 | | of 51 |



Main Func = Thermal



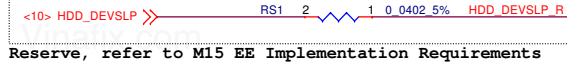
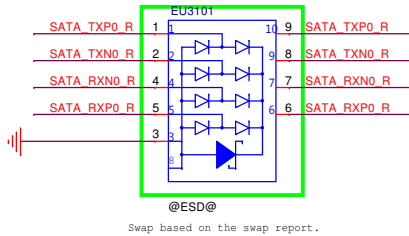
| TEMPERATURE (°C) | T_CRIT# | | | | |
|------------------|---------|-------|--------|------|--------|
| | 2KΩ | 7.5KΩ | 10.5KΩ | 14KΩ | 18.7KΩ |
| ALERT# | 2KΩ | 77 | 87 | 97 | 107 |
| | 7.5KΩ | 79 | 89 | 99 | 109 |
| | 10.5KΩ | 81 | 91 | 101 | 111 |
| | 14KΩ | 83 | 93 | 103 | 113 |
| | 18.7KΩ | 85 | 95 | 105 | 115 |

Main Func = HDD

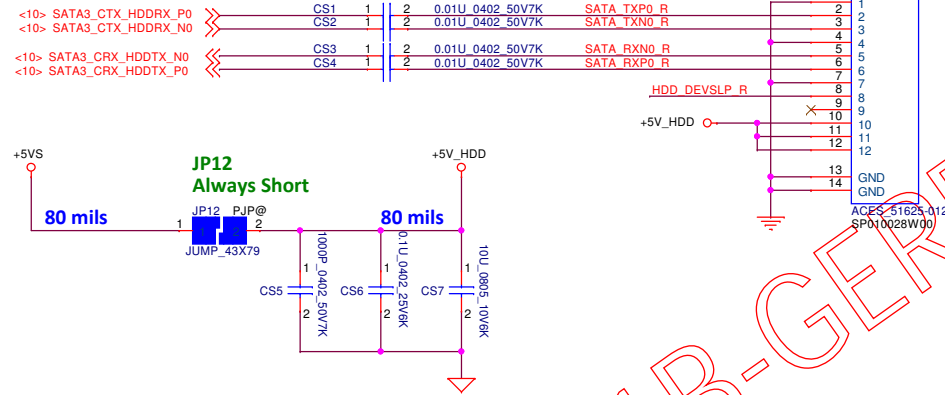
SATA HDD Connector

| CONN | | FFC |
|------|----|-----|
| GND | S1 | 1 |
| A+ | S2 | 2 |
| A- | S3 | 3 |
| GND | S4 | 4 |
| B- | S5 | 5 |
| B+ | S6 | 6 |
| GND | S7 | 7 |
| GND | P1 | |
| GND | P2 | |
| GND | P3 | |
| 5V | P4 | 10 |
| 5V | P5 | 11 |
| 5V | P6 | 12 |
| GND | P7 | |
| GND | P8 | |

Layout Note:
Place near HDD1

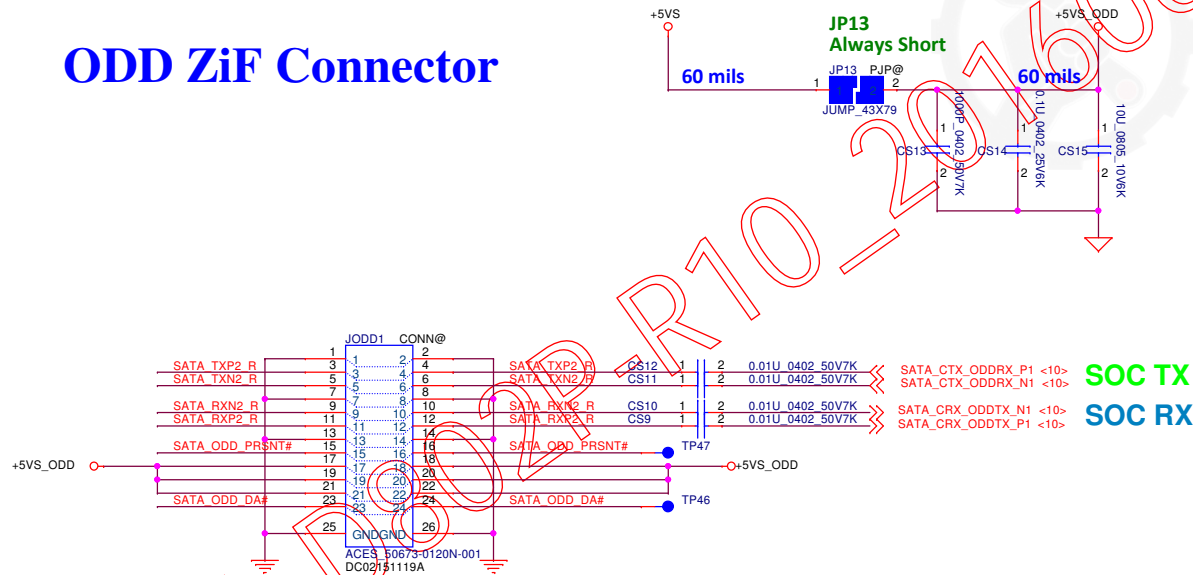


SOC TX
SOC RX



Main Func = ODD

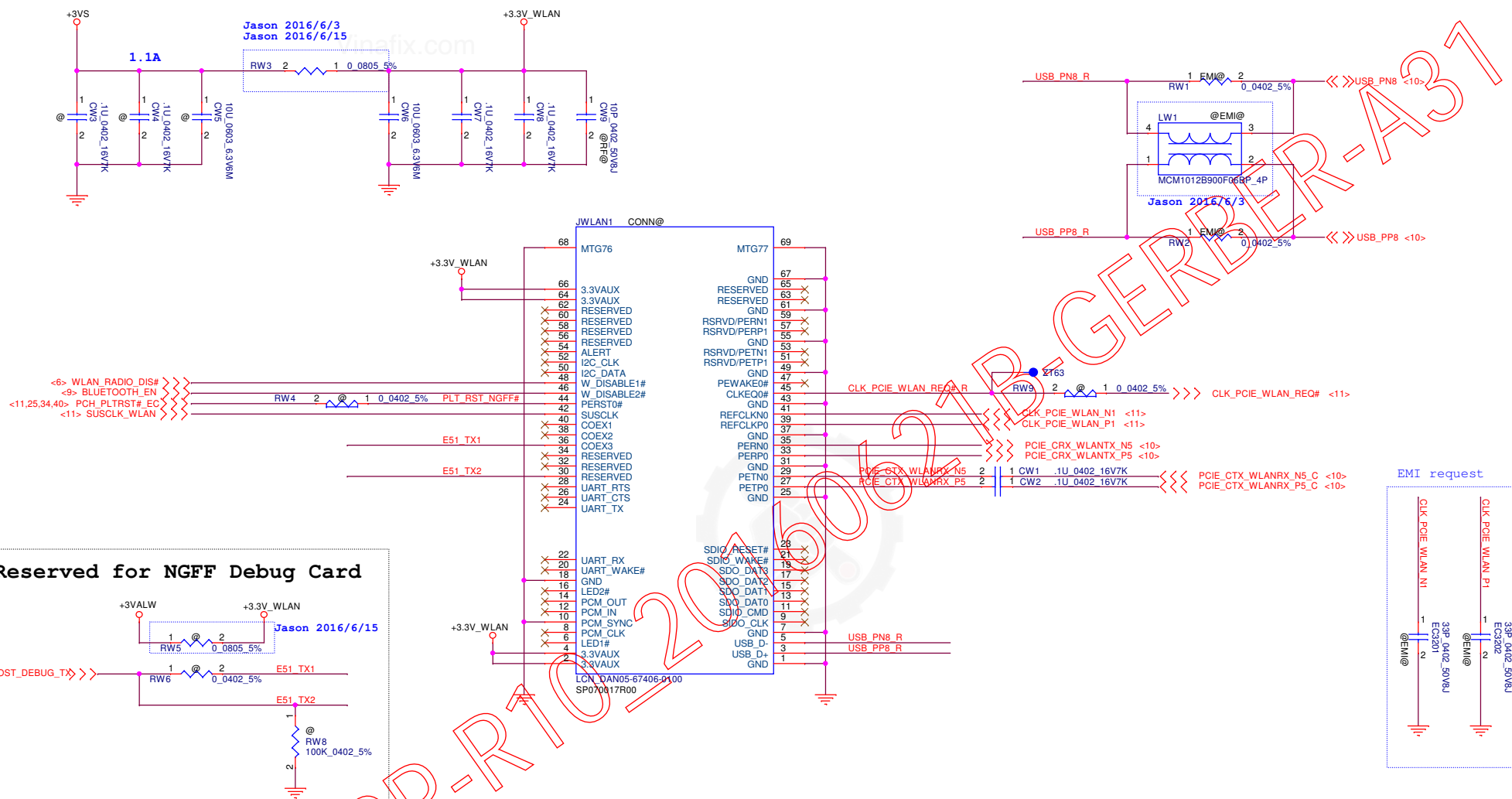
ODD ZiF Connector



| Pin | Signal |
|-----|--------|
| 1 | GND |
| 2 | A+ |
| 3 | A- |
| 4 | GND |
| 5 | B- |
| 6 | B+ |
| 7 | GND |
| 8 | DP |
| 9 | +5V |
| 10 | +5V |
| 11 | MD |
| 12 | GND |
| 13 | GND |

| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | | |
|---|------------|--------------------|------------|--------------------------|------------------------|----------------|
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | Title | HDD/ODD | |
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| | | | | | LA-D802P | A00 |
| | | | | Date: | Tuesday, June 21, 2016 | Sheet 31 of 51 |

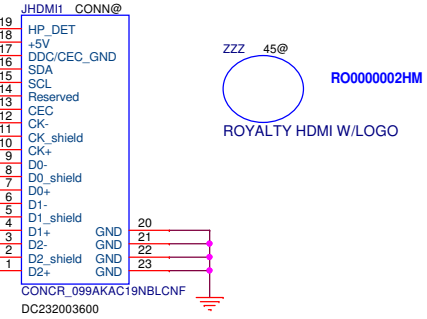
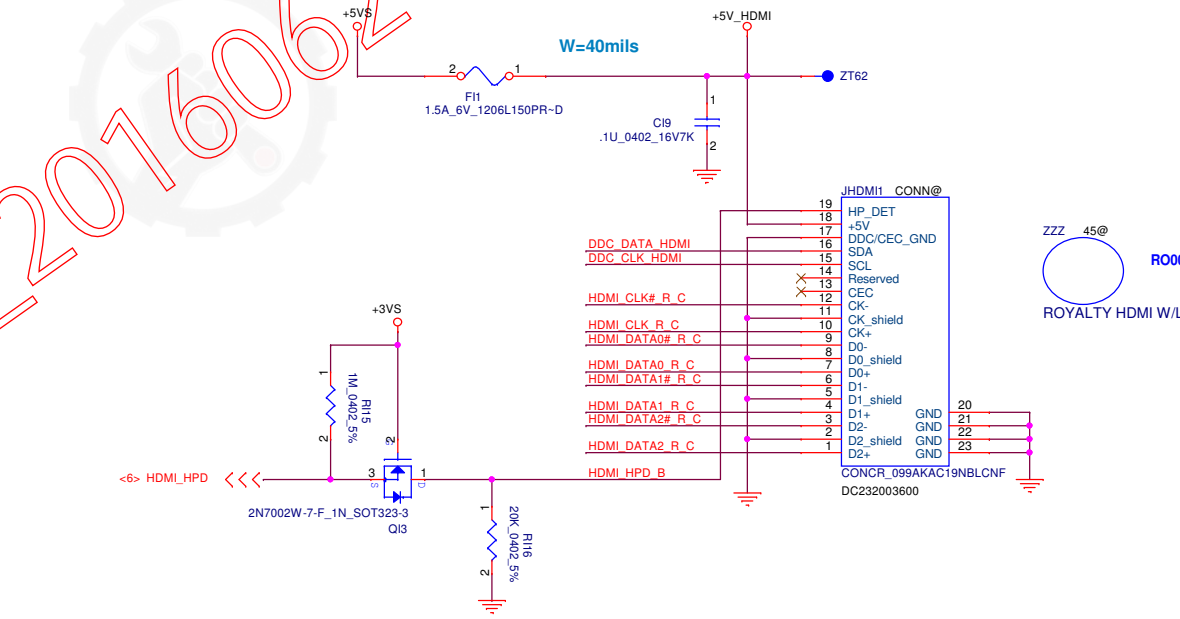
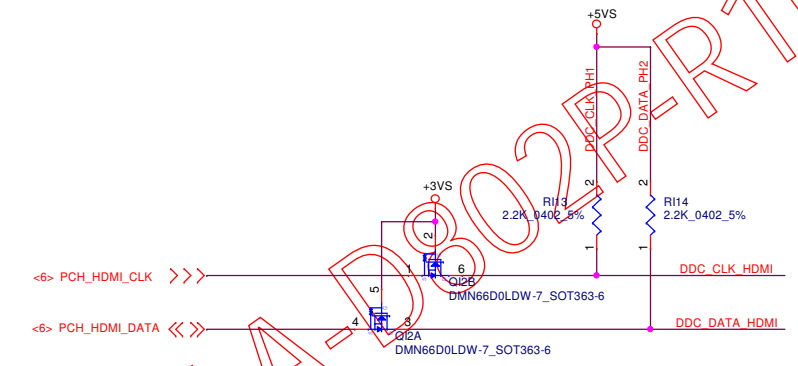
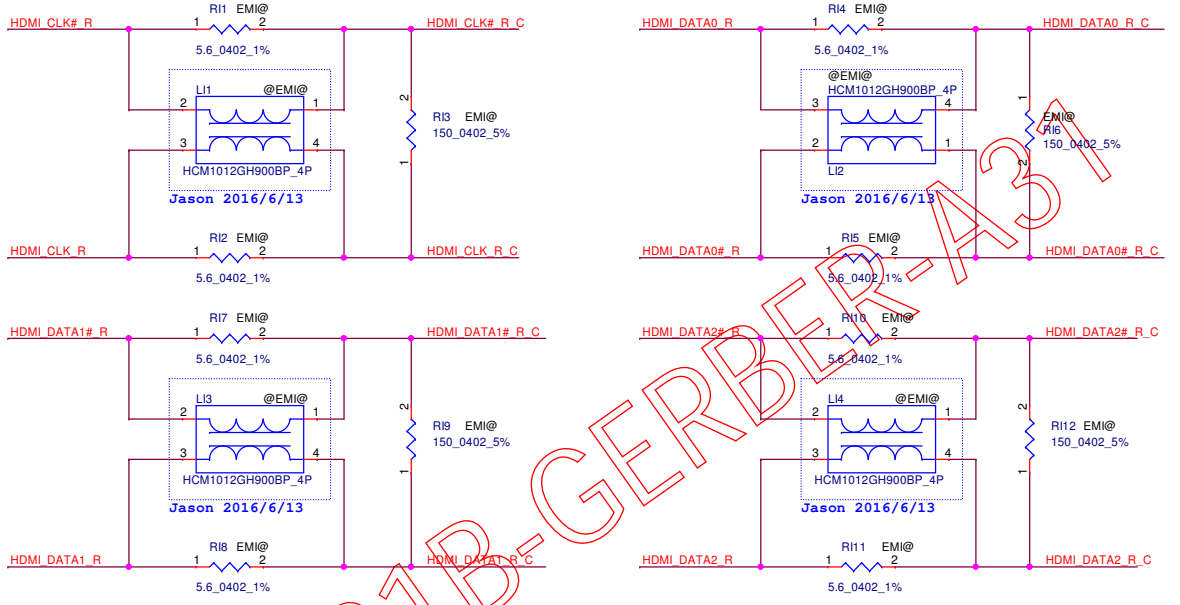
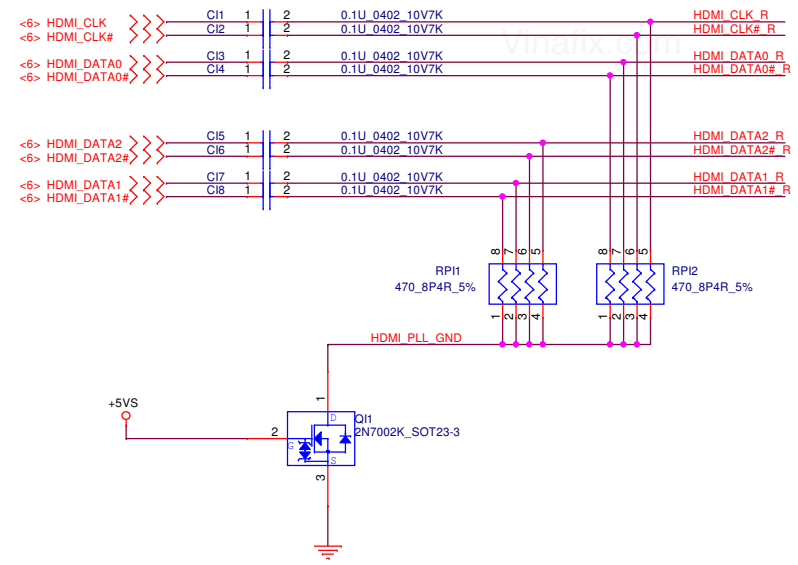
Main Func = WLAN A Key CONN



Support: Intel Dual Band Wireless-AC 3160

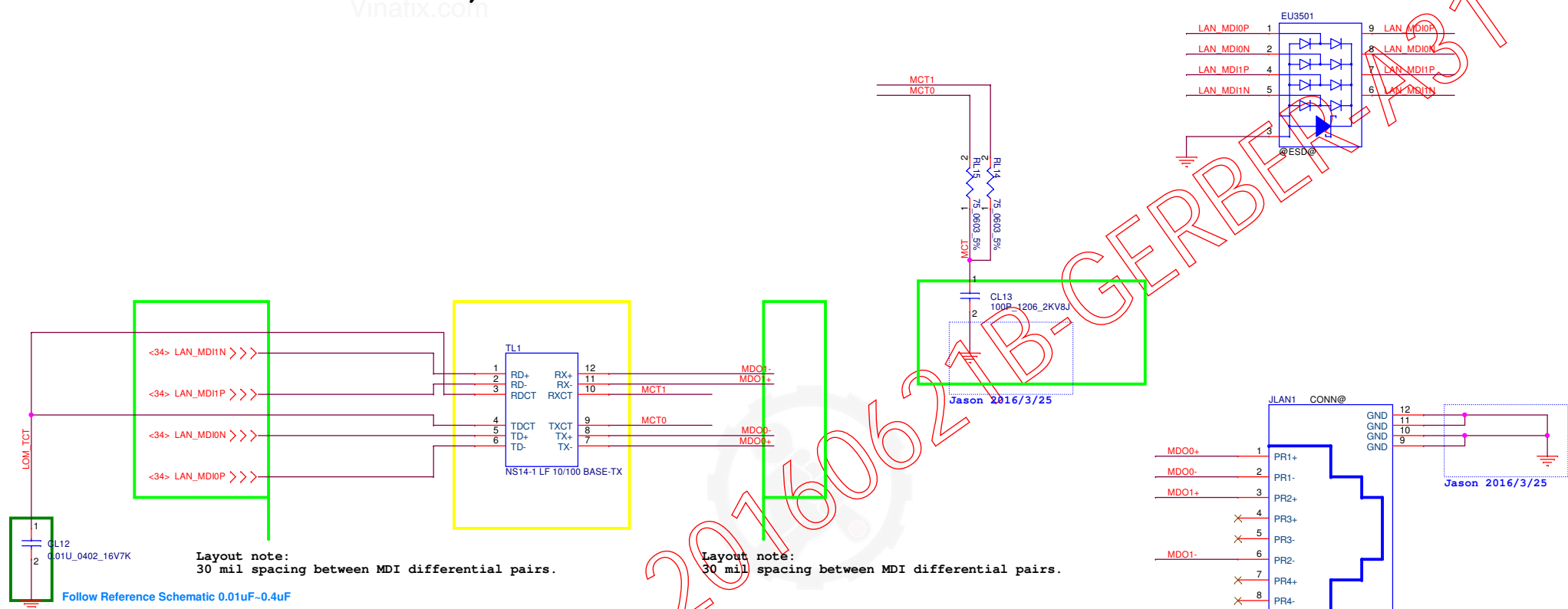
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| | | LA-D802P | | A00 | |
| Date | | Tuesdav, June 21, 2016 | | Sheet 32 of 51 | |

Main Func = HDMI



| | | | | | |
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| 2016/06/21 | | 2017/06/30 | | Document Number | |
| 2016/06/21 | | 2017/06/30 | | LA-D802P | |
| 2016/06/21 | | 2017/06/30 | | Date | |
| 2016/06/21 | | 2017/06/30 | | Tuesday, June 21, 2016 | |
| 2016/06/21 | | 2017/06/30 | | Sheet | |
| 2016/06/21 | | 2017/06/30 | | 33 of 51 | |
| 2016/06/21 | | 2017/06/30 | | Rev | |
| 2016/06/21 | | 2017/06/30 | | A00 | |

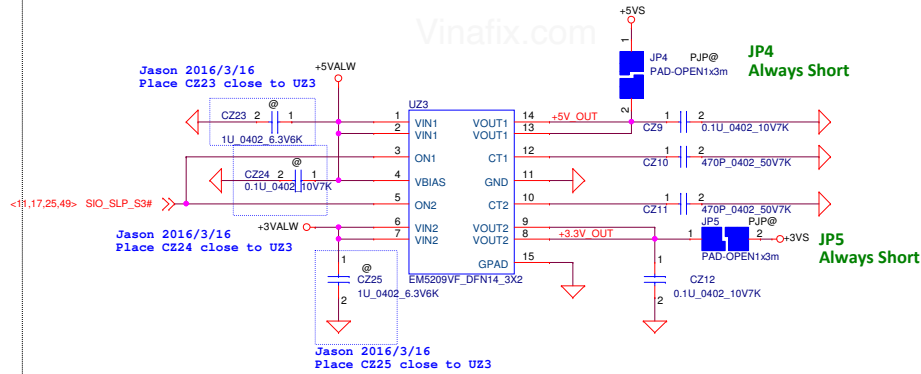
LAN TransFormer 10/100M



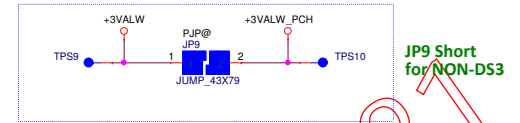
Main:
SP050007K00, S X'FORM, HD-081-A LAN
2nd:
SP050008L00, S X'FORM, NS681677 LAN
Jason 2015/04/27

| | | | | | |
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| | | | | LA-D802P | Rev A00 |
| | | | | Date: | Tuesday, June 21, 2016 |
| | | | | Sheet | 35 of 51 |

+5VS/+3VS for System



+3VALW_PCH for System



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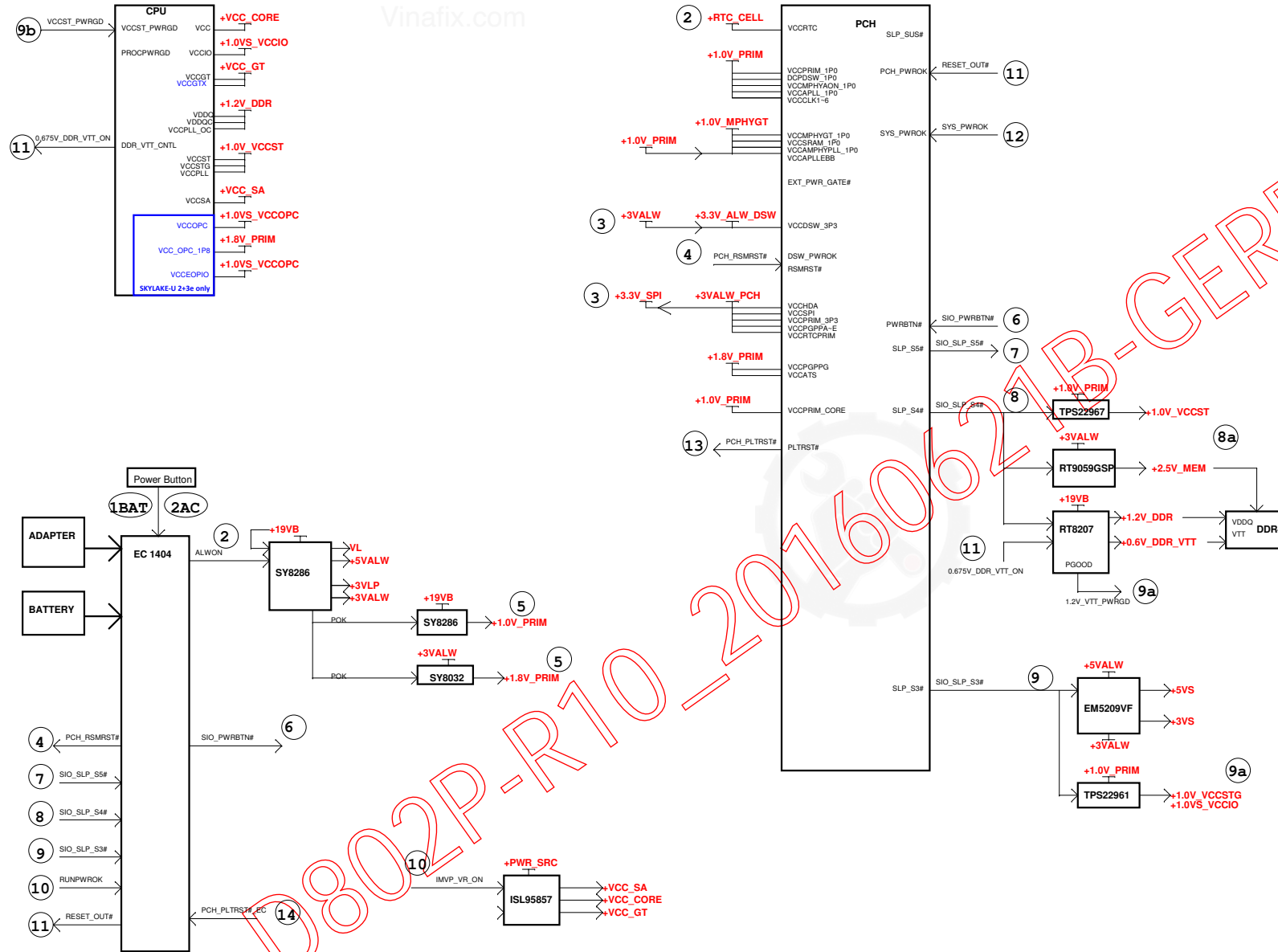
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Compal Electronics, Inc.



| Title | | | |
|----------|------------------------|-------|----------|
| DC to DC | | | |
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| | LA-D802P | A00 | |
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Timing Diagram for S5 to S0 mode



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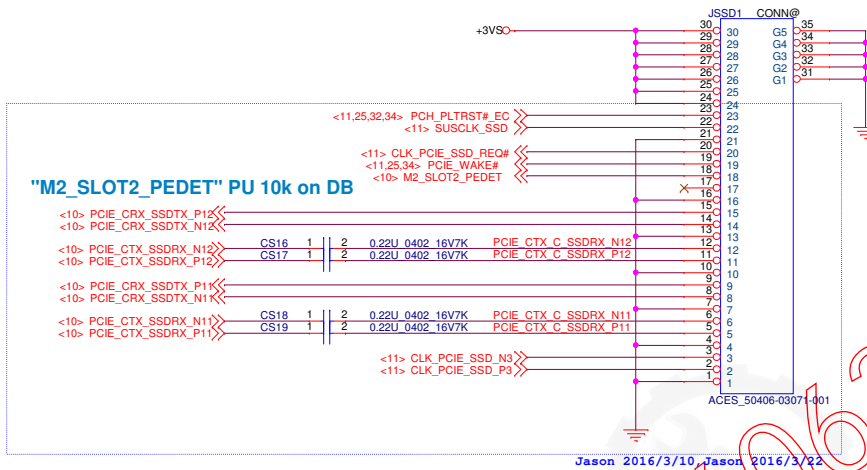
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|--|--------------------------|----------|-----------|
| | Compal Electronics, Inc. | | |
| | Power Sequence | | |
| | Document Number | LA-D802P | Rev. 1.00 |
| | Date | Issued | 30 of 31 |

| | | | | Design Change | Reason |
|-----------|------------|----------------|--------------------|---|---|
| Item Date | Page | Part reference | Change description | | |
| 1 | 2015-12-17 | - | Drawn | Drawn | Start URM schematic: modify |
| 2 | 2015-12-17 | 2 | None | Change Part Category for Gamma URM | Gamma URM function different with Gamma DGS |
| 3 | 2015-12-17 | 39-41 | None | Drawn DSIS "PUGB" Page (P 39-41) | No need for URM schematic: |
| 4 | 2015-12-17 | 50-51 | None | Drawn DSIS "PUGB" Page (P 50-51) | No need for URM schematic: |
| 5 | 2015-12 | 48, 39 | None | Change Page NO | Change Page sequence for page dates |
| 6 | 2015-12-17 | 48, 40 | None | Drawn DSIS "PUGB" Page (P 48-40) | Change Page sequence for page dates |
| 7 | 2015-12-17 | 20 | None | Drawn NET "PUGB_LVL" (AET 21) | Used for DSIS only [C] |
| 8 | 2015-12-17 | 20 | None | Drawn NET "TOLQ_PES_VGAP" (AET 26) | Used for DSIS only [C] |
| 9 | 2015-12-17 | 8 | None | Modify "DSIS" "BMS DATA" Description (Review) | Not connect to GPU |
| 10 | 2015-12-17 | 9 | RC68 | Drawn NET "TOLQ_HOLD_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 11 | 2015-12-17 | 9 | RC68/RC50 | Drawn DSIS "RC68_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 12 | 2015-12-17 | 11 | RC71 | Drawn NET "TOLQ_PES_VGA" (AET 24) | Used for DSIS only [PCH] |
| 13 | 2015-12-17 | 12 | RC116 | Drawn NET "TOLQ_PES_VGA" (AET 24) | Used for DSIS only [PCH] |
| 14 | 2015-12-17 | 13 | None | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 15 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 16 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 17 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 18 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 19 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 20 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 21 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 22 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 23 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 24 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 25 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 26 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 27 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 28 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 29 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 30 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 31 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 32 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 33 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 34 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 35 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 36 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 37 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 38 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 39 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 40 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 41 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 42 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 43 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 44 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 45 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 46 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 47 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 48 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 49 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 50 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| 51 | 2015-12-17 | 13 | RC116 | Drawn DSIS "RC116_RSTF" (AET 17) | Used for DSIS only [PCH] |
| | | | | | |

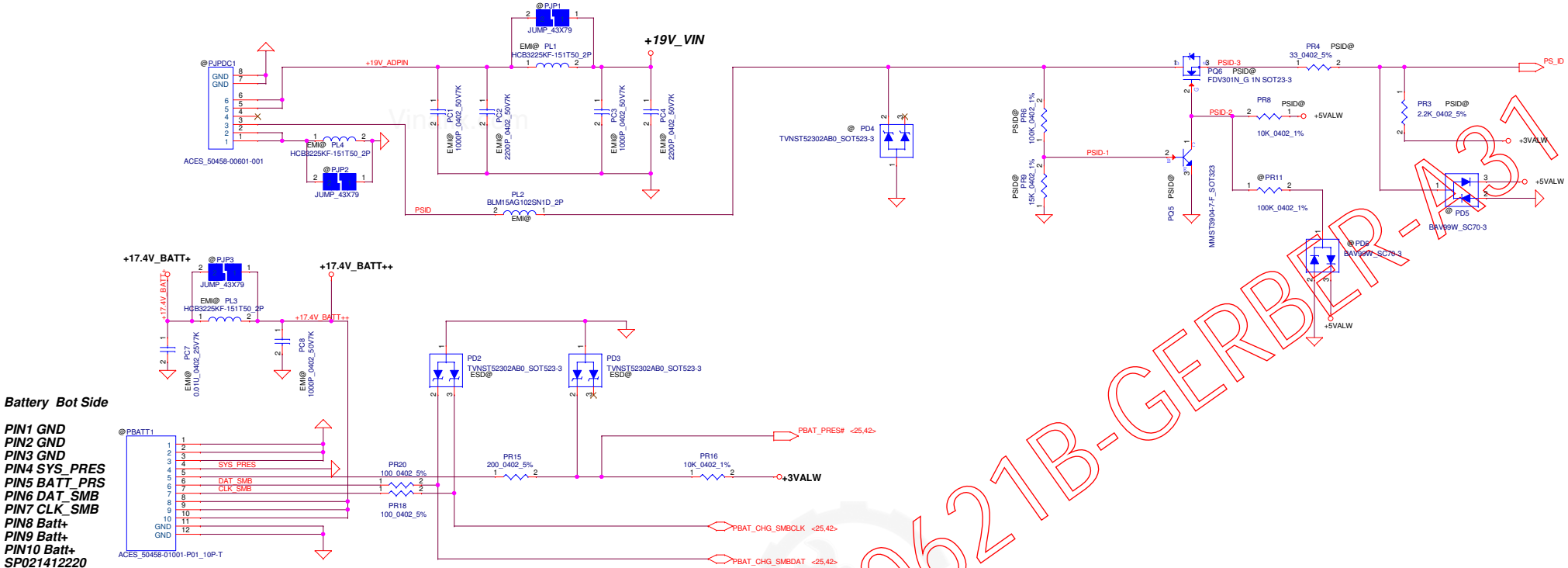
[illegible]

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|----------------|----|----|--|----------------------------|
| 102.2019/10/30 | 21 | HW | Change H2 connect from "G06" to "LAN0G0" | SWAP MEM PWR to reduce VAW |
| 109.2019/10/30 | 21 | HW | Modify DMA DMA0 DMA1 DMA2 DMA3 DMA4 DMA5 DMA6 DMA7 DMA8 DMA9 DMA10 DMA11 DMA12 DMA13 DMA14 DMA15 DMA16 DMA17 DMA18 DMA19 DMA20 DMA21 DMA22 DMA23 DMA24 DMA25 DMA26 DMA27 DMA28 DMA29 DMA30 DMA31 DMA32 DMA33 DMA34 DMA35 DMA36 DMA37 DMA38 DMA39 DMA40 DMA41 DMA42 DMA43 DMA44 DMA45 DMA46 DMA47 DMA48 DMA49 DMA50 DMA51 DMA52 DMA53 DMA54 DMA55 DMA56 DMA57 DMA58 DMA59 DMA60 DMA61 DMA62 DMA63 DMA64 DMA65 DMA66 DMA67 DMA68 DMA69 DMA70 DMA71 DMA72 DMA73 DMA74 DMA75 DMA76 DMA77 DMA78 DMA79 DMA80 DMA81 DMA82 DMA83 DMA84 DMA85 DMA86 DMA87 DMA88 DMA89 DMA90 DMA91 DMA92 DMA93 DMA94 DMA95 DMA96 DMA97 DMA98 DMA99 DMA100 DMA101 DMA102 DMA103 DMA104 DMA105 DMA106 DMA107 DMA108 DMA109 DMA110 DMA111 DMA112 DMA113 DMA114 DMA115 DMA116 DMA117 DMA118 DMA119 DMA120 DMA121 DMA122 DMA123 DMA124 DMA125 DMA126 DMA127 DMA128 DMA129 DMA130 DMA131 DMA132 DMA133 DMA134 DMA135 DMA136 DMA137 DMA138 DMA139 DMA140 DMA141 DMA142 DMA143 DMA144 DMA145 DMA146 DMA147 DMA148 DMA149 DMA150 DMA151 DMA152 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DMA2134 DMA2135 DMA2136 DMA2137 DMA2138 DMA2139 DMA2140 DMA2141 DMA2142 DMA2143 DMA2144 DMA2145 DMA2146 DMA2147 DMA2148 DMA2149 DMA2150 DMA2151 DMA2152 DMA2153 DMA2154 DMA2155 DMA2156 DMA2157 DMA2158 DMA2159 DMA2160 DMA2161 DMA2162 DMA2163 DMA2164 DMA2165 DMA2166 DMA2167 DMA2168 DMA2169 DMA2170 DMA2171 DMA2172 DMA2173 DMA2174 DMA2175 DMA2176 DMA2177 DMA2178 DMA2179 DMA2180 DMA2181 DMA2182 DMA2183 DMA2184 DMA2185 DMA2186 DMA2187 DMA2188 DMA2189 DMA2190 DMA2191 DMA2192 DMA2193 DMA2194 DMA2195 DMA2196 DMA2197 DMA2198 DMA2199 DMA2200 DMA2201 DMA2202 DMA2203 DMA2204 DMA2205 DMA2206 DMA2207 DMA2208 DMA2209 DMA2210 DMA2211 DMA2212 DMA2213 DMA2214 DMA2215 DMA2216 DMA2217 DMA2218 DMA2219 DMA2220 DMA2221 DMA2222 DMA2223 DMA2224 DMA2225 DMA2226 DMA2227 DMA2228 DMA2229 DMA2230 DMA2231 DMA2232 DMA2233 DMA2234 DMA2235 DMA2236 DMA2237 DMA2238 DMA2239 DMA2240 DMA2241 DMA2242 DMA2243 DMA2244 DMA2245 DMA2246 DMA2247 DMA2248 DMA2249 DMA2250 DMA2251 DMA2252 DMA2253 DMA2254 DMA2255 DMA2256 DMA2257 DMA2258 DMA2259 DMA2260 DMA2261 DMA2262 DMA2263 DMA2264 DMA2265 DMA2266 DMA2267 DMA2268 DMA2269 DMA2270 DMA2271 DMA2272 DMA2273 DMA2274 DMA2275 DMA2276 DMA2277 DMA2278 DMA2279 DMA2280 DMA2281 DMA2282 DMA2283 DMA2284 DMA2285 DMA2286 DMA2287 DMA2288 DMA2289 DMA2290 DMA2291 DMA2292 DMA2293 DMA2294 DMA2295 DMA2296 DMA2297 DMA2298 DMA2299 DMA2300 DMA2301 DMA2302 DMA2303 DMA2304 DMA2305 DMA2306 DMA2307 DMA2308 DMA2309 DMA2310 DMA2311 DMA2312 DMA2313 DMA2314 DMA2315 DMA2316 DMA2317 DMA2318 DMA2319 DMA2320 DMA2321 DMA2322 DMA2323 DMA2324 DMA2325 DMA2326 DMA2327 DMA2328 DMA2329 DMA2330 DMA2331 DMA2332 DMA2333 DMA2334 DMA2335 DMA2336 DMA2337 DMA2338 DMA2339 DMA2340 DMA2341 DMA2342 DMA2343 DMA2344 DMA2345 DMA2346 DMA2347 DMA2348 DMA2349 DMA2350 DMA2351 DMA2352 DMA2353 DMA2354 DMA2355 DMA2356 DMA2357 DMA2358 DMA2359 DMA2360 DMA2361 DMA2362 DMA2363 DMA2364 DMA2365 DMA2366 DMA2367 DMA2368 DMA2369 DMA2370 DMA2371 DMA2372 DMA2373 DMA2374 DMA2375 DMA2376 DMA2377 DMA2378 DMA2379 DMA2380 DMA2381 DMA2382 DMA2383 DMA2384 DMA2385 DMA2386 DMA2387 DMA2388 DMA2389 DMA2390 DMA2391 DMA2392 DMA2393 DMA2394 DMA2395 DMA2396 DMA2397 DMA2398 DMA2399 DMA2400 DMA2401 DMA2402 DMA2403 DMA2404 DMA2405 DMA2406 DMA2407 DMA2408 DMA2409 DMA2410 DMA2411 DMA2412 DMA2413 DMA2414 DMA2415 DMA2416 DMA2417 DMA2418 DMA2419 DMA2420 DMA2421 DMA2422 DMA2423 DMA2424 DMA2425 DMA2426 DMA2427 DMA2428 DMA2429 DMA2430 DMA2431 DMA2432 DMA2433 DMA2434 DMA2435 DMA2436 DMA2437 DMA2438 DMA2439 DMA2440 DMA2441 DMA2442 DMA2443 DMA2444 DMA2445 DMA2446 DMA2447 DMA2448 DMA2449 DMA2450 DMA2451 DMA2452 DMA2453 DMA2454 DMA2455 DMA2456 DMA2457 DMA2458 DMA2459 DMA2460 DMA2461 DMA2462 DMA2463 DMA2464 DMA2465 DMA2466 DMA2467 DMA2468 DMA2469 DMA2470 DMA2471 DMA2472 DMA2473 DMA2474 DMA2475 DMA2476 DMA2477 DMA2478 DMA2479 DMA2480 DMA2481 DMA2482 DMA2483 DMA2484 DMA2485 DMA2486 DMA2487 DMA2488 DMA2489 DMA2490 DMA2491 DMA2492 DMA2493 DMA2494 DMA2495 DMA2496 DMA2497 DMA2498 DMA2499 DMA2500 DMA2501 DMA2502 DMA2503 DMA2504 DMA2505 DMA2506 DMA2507 DMA2508 DMA2509 DMA2510 DMA2511 DMA2512 DMA2513 DMA2514 DMA2515 DMA2516 DMA2517 DMA2518 DMA2519 DMA2520 DMA2521 DMA2522 DMA2523 DMA2524 DMA2525 DMA2526 DMA2527 DMA2528 DMA2529 DMA2530 DMA2531 DMA2532 DMA2533 DMA2534 DMA2535 DMA2536 DMA2537 DMA2538 DMA2539 DMA2540 DMA2541 DMA2542 DMA2543 DMA2544 DMA2545 DMA2546 DMA2547 DMA2548 DMA2549 DMA2550 DMA2551 DMA2552 DMA2553 DMA2554 DMA2555 DMA2556 DMA2557 DMA2558 DMA2559 DMA2560 DMA2561 DMA2562 DMA2563 DMA2564 DMA2565 DMA2566 DMA2567 DMA2568 DMA2569 DMA2570 DMA2571 DMA2572 DMA2573 DMA2574 DMA2575 DMA2576 DMA2577 DMA2578 DMA2579 DMA2580 DMA2581 DMA2582 DMA2583 DMA2584 DMA2585 DMA2586 DMA2587 DMA2588 DMA2589 DMA2590 DMA2591 DMA2592 DMA2593 DMA2594 DMA2595 DMA2596 DMA2597 DMA2598 DMA2599 DMA2600 DMA2601 DMA2602 DMA2603 DMA2604 DMA2605 DMA2606 DMA2607 DMA2608 DMA2609 DMA2610 DMA2611 DMA2612 DMA2613 DMA2614 DMA2615 DMA2616 DMA2617 DMA2618 DMA2619 DMA2620 DMA2621 DMA2622 DMA2623 DMA2624 DMA2625 DMA2626 DMA2627 DMA2628 DMA2629 DMA2630 DMA2631 DMA2632 DMA2633 DMA2634 DMA2635 DMA2636 DMA2637 DMA2638 DMA2639 DMA2640 DMA2641 DMA2642 DMA2643 DMA2644 DMA2645 DMA2646 DMA2647 DMA2648 DMA2649 DMA2650 DMA2651 DMA2652 DMA2653 DMA2654 DMA2655 DMA2656 DMA2657 DMA2658 DMA2659 DMA2660 DMA2661 DMA2662 DMA2663 DMA2664 DMA2665 DMA2666 DMA2667 DMA2668 DMA2669 DMA2670 DMA2671 DMA2672 DMA2673 DMA2674 DMA2675 DMA26 | |

[illegible]



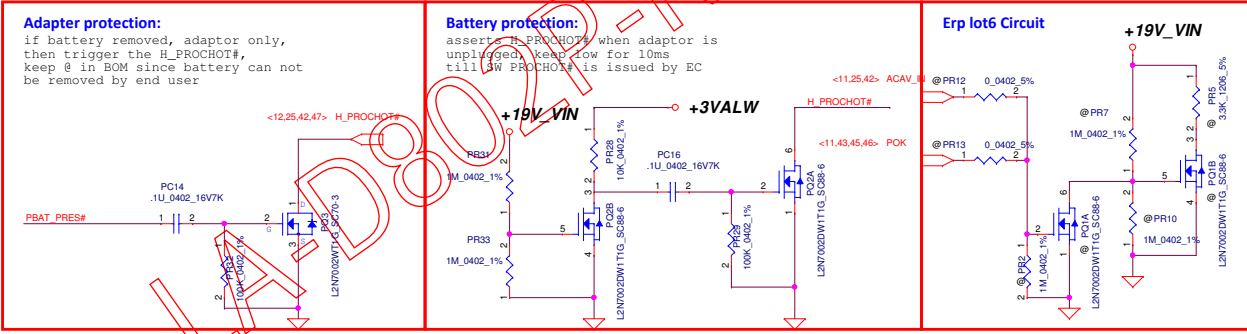
| Security Classification | | Compal Secret Data | | Compal Electronics, Inc. | |
|---|------------|--------------------|------------|--------------------------|------------------------|
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | Title | SSD |
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| | | | | Date | Tuesday, June 21, 2016 |
| | | | | Sheet | 40 of 51 |



Battery Bot Side

- PIN1 GND
- PIN2 GND
- PIN3 GND
- PIN4 SYS_PRES
- PIN5 BATT_PRS
- PIN6 DAT_SMB
- PIN7 CLK_SMB
- PIN8 Batt+
- PIN9 Batt+
- PIN10 Batt+
- SP021412220

Other component (37-T)
ACES_50458-01001-P01_10P-T



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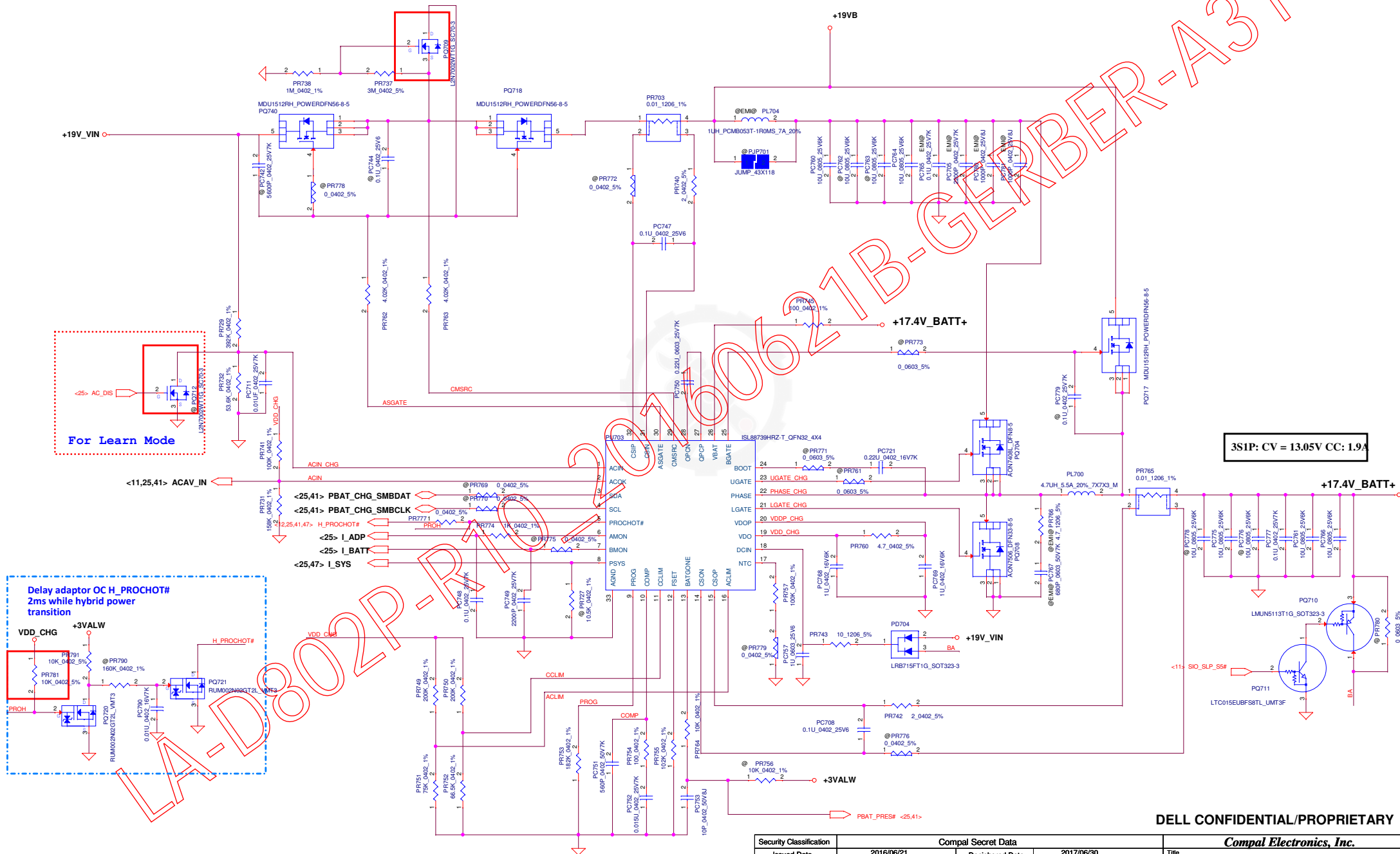
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|---|------------|-----------------|--------------------|-------------------------|-----------------|-----|
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | | Document Number | Rev |
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| Date: Tuesday, June 21, 2016 | | | | Sheet 41 of 51 | | |

Iada=0~3.33A (65W)

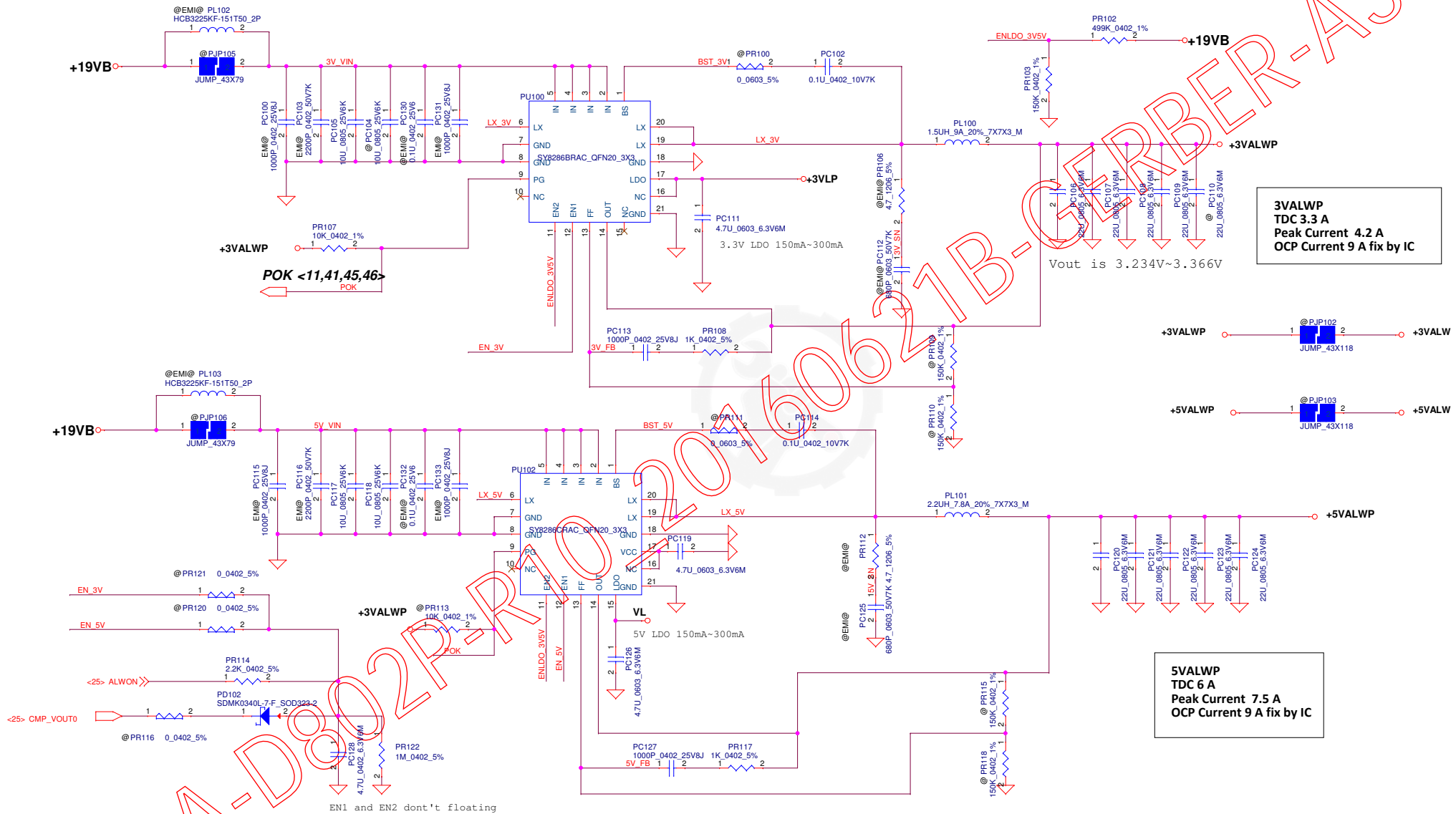
Iada=0~2.30A (45W)

ADP_I = 32*Iadapter*Rsense

Vinafix.com



| Security Classification | | Compal Secret Data | | Title | |
|--|------------|--------------------|------------|------------------------|----------------|
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | PWR CHARGER | |
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| Date | | | | Tuesday, June 21, 2016 | Sheet 42 of 51 |



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PWR 3.3VALWP/5VALWP

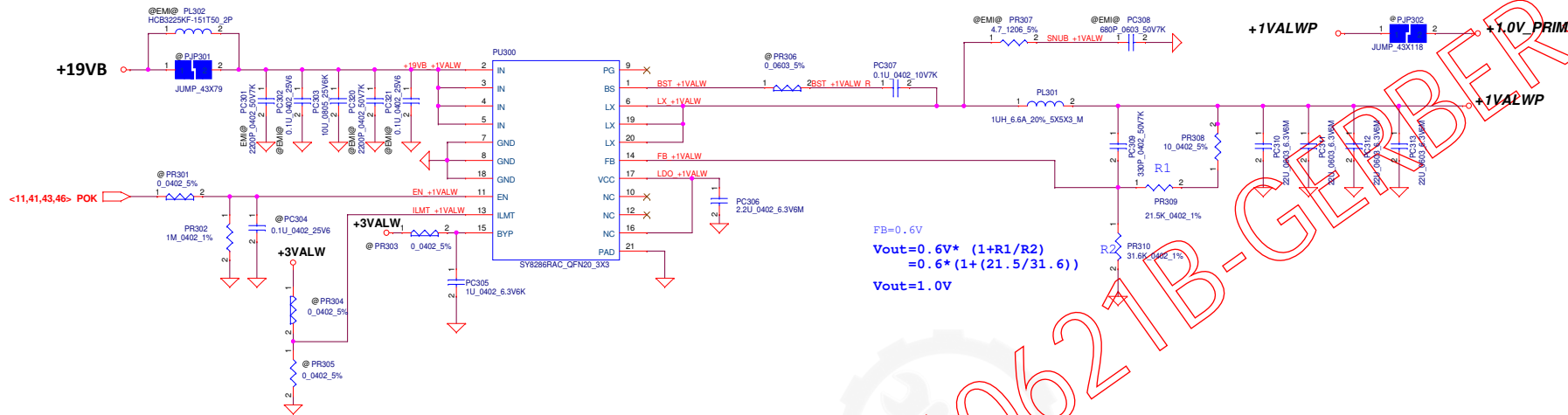
LA-D802P

Rev A00

Date: Tuesday, June 21, 2016

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The current limit is set to 6A, 9A or 12A when this pin is pull low, floating or pull high

| OCP setting | ILMT(pin3) |
|-------------|------------|
| 6A | Pull low |
| 9A | Floating |
| 12A | Pull high |

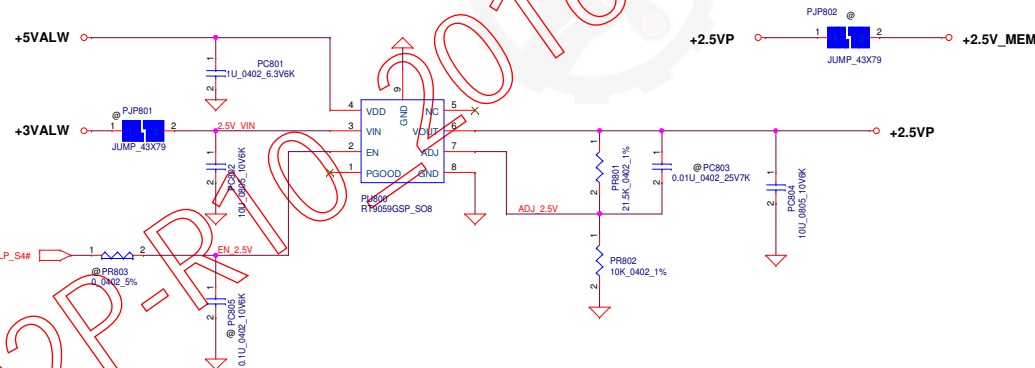
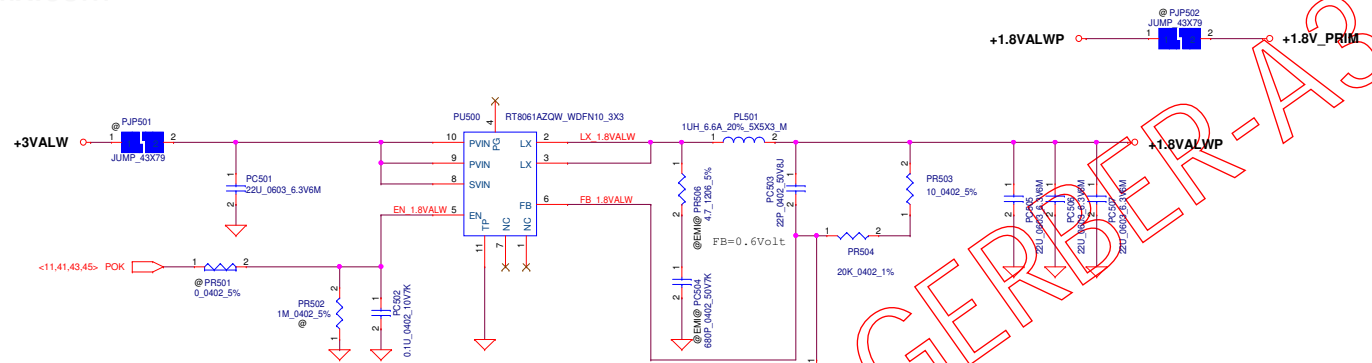
$$V_{out} = 0.6V \cdot \left(1 + \frac{R1}{R2}\right)$$

$$= 0.6V \cdot \left(1 + \frac{21.5}{31.6}\right)$$

$$V_{out} = 1.0V$$

+1.0V PRIM
TDC 6 A
Peak Current 8.6 A
OCP Current 12 A Fix by IC
TYP MAX
Choke DCR 11.0mohm, 12.0mohm

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|---|------------------------|-----------------|--------------------------|--------------------------|
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| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | Title |
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| Size | C | Document Number | | Rev |
| Date | Tuesday, June 21, 2016 | Sheet | 46 of 51 | A00 |

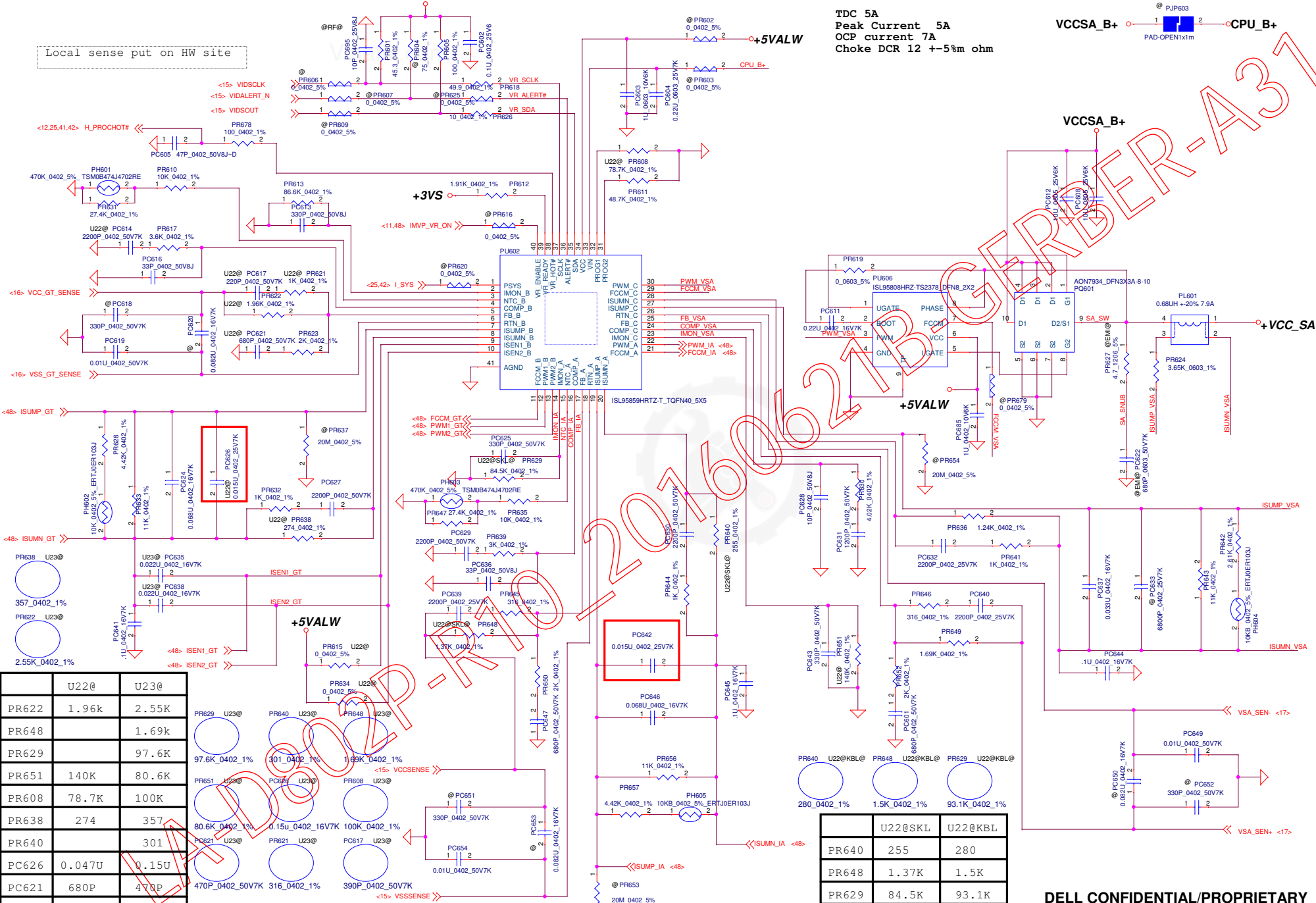
Local sense put on HW site

+1.0V_VCCST

VCC_SA
Loadline : 10.3m-ohm

TDC 5A
Peak Current 5A
OCP current 7A
Choke DCR 12 +-5% m ohm

VCCSA_B+ CPU_B+
PAD-OPEN1x1m



| | U22@ | U23@ |
|-------|--------|-------|
| PR622 | 1.96k | 2.55K |
| PR648 | | 1.69k |
| PR629 | | 97.6K |
| PR651 | 140K | 80.6K |
| PR608 | 78.7K | 100K |
| PR638 | 274 | 357 |
| PR640 | | 301 |
| PC626 | 0.047U | 0.15U |
| PC621 | 680P | 470P |
| PR621 | 1K | 316 |
| PC617 | 220P | 390P |
| PC614 | 2200P | 6800P |

| | U22@SKL | U22@KBL |
|-------|---------|---------|
| PR640 | 255 | 280 |
| PR648 | 1.37K | 1.5K |
| PR629 | 84.5K | 93.1K |

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| | | | | | |
|--|------------|--------------------|------------|-----------------|------------------------|
| Security Classification | | Compal Secret Data | | Title | |
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | PWR_VCC_SA | |
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| | | | | Date | Tuesday, June 21, 2016 |
| | | | | Sheet | 47 of 51 |

```
VCC_GT
U22 - 15W
Loadline : 3.1m-ohm
U23e - 15W
Loadline : 2m-ohm
```

U22-15W
TDC 18A
Peak Current 31A
OCP current 37A
Choke DCR 0.66 +-7% m ohm

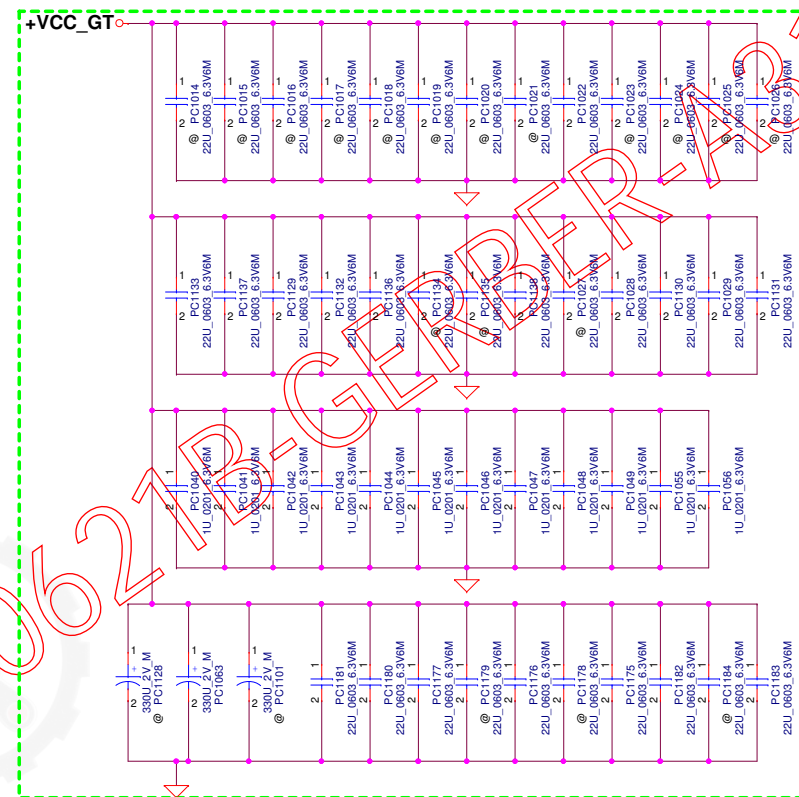
U23e-15W
TDC 43A
Peak Current 64A
OCP current 77A
Choke DCR 0.66 +-7% ohm



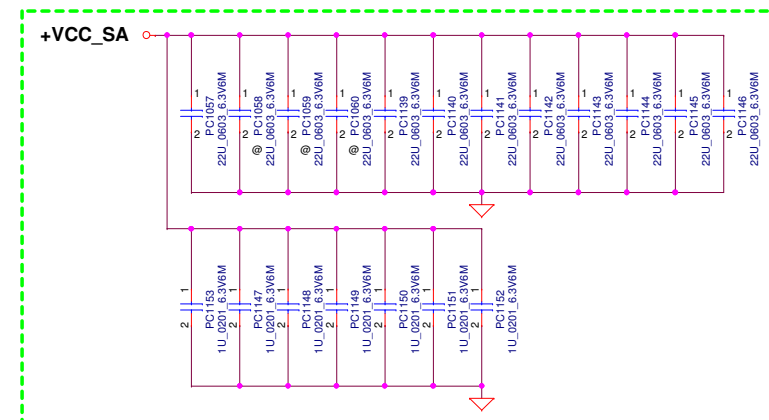
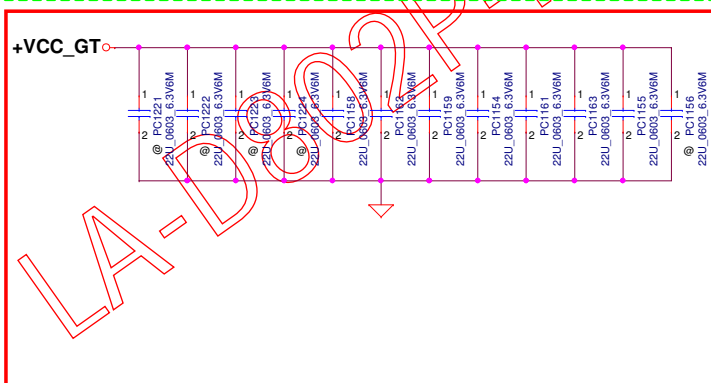
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|---|--------------------|-----------------|------------|---------------------------------|---|----------|
| Security Classification | Compal Secret Data | | | Compal Electronics, Inc. | | |
| Issued Date | 2016/06/21 | Deciphered Date | 2017/06/30 | Title | <i>PWR +VCC_core and +VCC_GT</i> | |
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| | | | | Date: Tuesday, June 21, 2016 | ISheet | 48 of 51 |

KBL :
VCC_CORE Place on CPU
Back Side.
22U_0603 * 15 pcs +1U_0201 *35 pcs
Primary Side.
22U_0603 * 5 pcs+330u *2 pcs

```
VCC_GT Place on CPU
Back Side.
22U_0603 * 19 pcs +1U_0201*12 pcs
Primary Side.
22U_0603 * 6 pcs +330u*1 pcs
```



VCC_SA Place on CPU
Back Side.
22U_0603 * 6 pcs + 1U_0201*7 pcs
Primary Side.
22U_0603 * 3 pcs



Compal Electronics, Inc.

PWR_CPU&VGA bulk and MLCC

| | | | | | | |
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| | | | | | | Document Number |
| Date: Tuesday, June 21, 2016 | | | | | | Sheet 50 of 51 |

Version Change List (P. I. R. List)

| Item | Page# | Title | Date | Request Owner | Issue Description | Solution Description | Rev. |
|------|---------|-------|----------|------------------|--------------------------------------|---|-----------|
| 1 | P42 | PWR | 20150422 | COMPAL | design change charger IC | PU706 change to ISL88739 PR732 change to 53.6K PR774 change to 1K PC748 change to 0.1U delete PR727 | 0.1 (X00) |
| 2 | P47 | PWR | 20150422 | COMPAL | design change for IA_Core Iccmax 32A | Change the PR640 to 280 Ohm Change the PR648 to 1.5k Change the PR629 to 93.1k Change the PC642 to 0.01uF Change the PC646 to 0.068uF Change the PC626 to 0.01uF Change the PC624 to 0.068uF | 0.1 (X00) |
| 3 | P50 | PWR | 20150422 | COMPAL | design change | delete PC1002,PC1003,PC1004,PC1006,PC1012,PC1013,PC1014,PC1015,PC1016, PC1017,PC1018,PC1019,PC1020,PC1021,PC1023,PC1024,PC1025,PC1026,PC1027, PC1058,PC1059,PC1060,PC1068,PC1069,PC1071,PC1072,PC1073,PC1074,PC1075, PC1078,PC1080,PC1081,PC1134,PC1135,PC1156,PC1206,PC1207,PC1208,PC1221, PC1222,PC1223,PC1224 add PC1170,PC1171,PC1172,PC1175,PC1176,PC1177,PC1180,PC1181,PC1182, PC1183 | 0.1 (X00) |
| 4 | P41 | PWR | 20160504 | COMPAL | Reserve Exp lot6 | Reserve PR2,PR5 ,PR7,PR10,PQ1 | 0.3 (X02) |
| 5 | P42 | PWR | 20160504 | COMPAL | PQ740 damage issue | Change PQ740 to SB00000SY00 (MDU1512R) | 0.3 (X02) |
| 6 | P42~P49 | PWR | 20160504 | COMPAL | EMI solution | Change to SE068102J80 (1000P) Location : PC780,PC781,PC100,PC131,PC115,PC133,PC230,PC231,PC694,PC691, PC692,PC693,PC1420,PC1421 | 0.3 (X02) |
| 7 | P42 | PWR | 20160614 | COMPAL | Change SOT23-6P to SOT23-3P | change PQ709 to SB00000ST00 (PQ709,PQ712) | 1.0 (A00) |
| 8 | P42 | PWR | 20160614 | COMPAL | Add pull high resistance | Add PR781 | 1.0 (A00) |

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| | | | | Date: Tuesday, June 21, 2016 | Sheet 51 of 51 |