

**Alba UMA Schematics**  
**uFCPGA Mobile Penryn**  
**Intel Cantiga-GM + ICH9M**

**2009-04-06**

**REV : -1**

*DY : Nopop Component*

Alba UMA



**Wistron Corporation**  
21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,  
Taipei Hsien 221, Taiwan, R.O.C.

Title

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**-1**

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# ALBA UMA Block Diagram

Clock Generator  
**SLG8SP513VTR** 7

Intel Mobile CPU  
**Penryn**  
Socket P 8,9

Project code : 91.4BK01.001  
Part Number : 48.4BK04.0SA  
PCB P/N : 08243  
Revision : SA

## PCB LAYER

L1: Top  
L2: GND  
L3: Signal  
L4: Signal  
L5: VCC  
L6: Signal  
L7: GND  
L8: Bottom

| ISL6266A/CPU_CORE 34,35 |           |
|-------------------------|-----------|
| INPUTS                  | OUTPUTS   |
| +PWR_SRC                | +VCC_CORE |

| TPS51117/1.05V 36 |             |
|-------------------|-------------|
| INPUTS            | OUTPUTS     |
| +PWR_SRC          | +1.05V_VCCP |

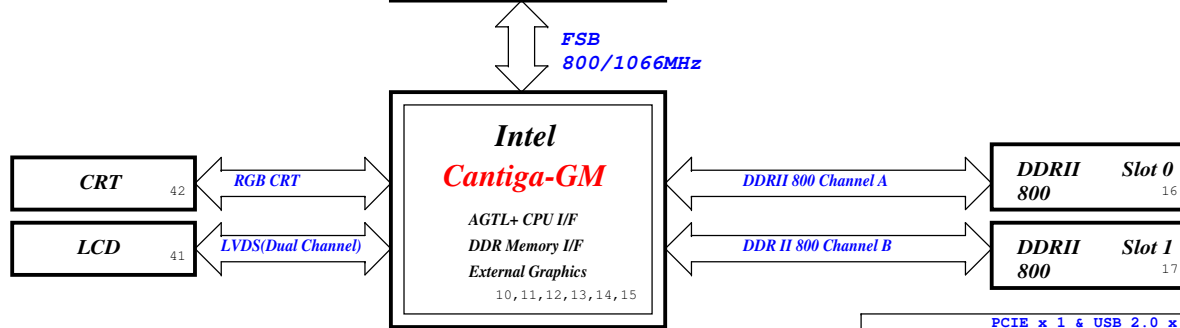
| TPS51125/3V, 5V 33 |                                                   |
|--------------------|---------------------------------------------------|
| INPUTS             | OUTPUTS                                           |
| +PWR_SRC           | +5V_ALW2<br>+3.3V_RTC_LDO<br>+5V_ALW<br>+3.3V_ALW |

| TPS51116/1.8V, 0.9V 38 |                                              |
|------------------------|----------------------------------------------|
| INPUTS                 | OUTPUTS                                      |
| +PWR_SRC               | +1.8V_SUS<br>+0.9V_DDR_VTT<br>+V_DDR_MCH_REF |

| L6935TR/1.5V 37 |           |
|-----------------|-----------|
| INPUTS          | OUTPUTS   |
| +1.8V_SUS       | +1.5V_RUN |

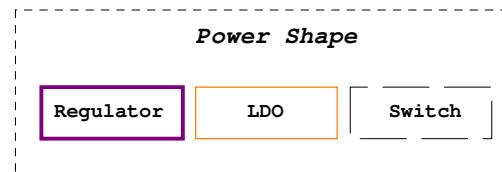
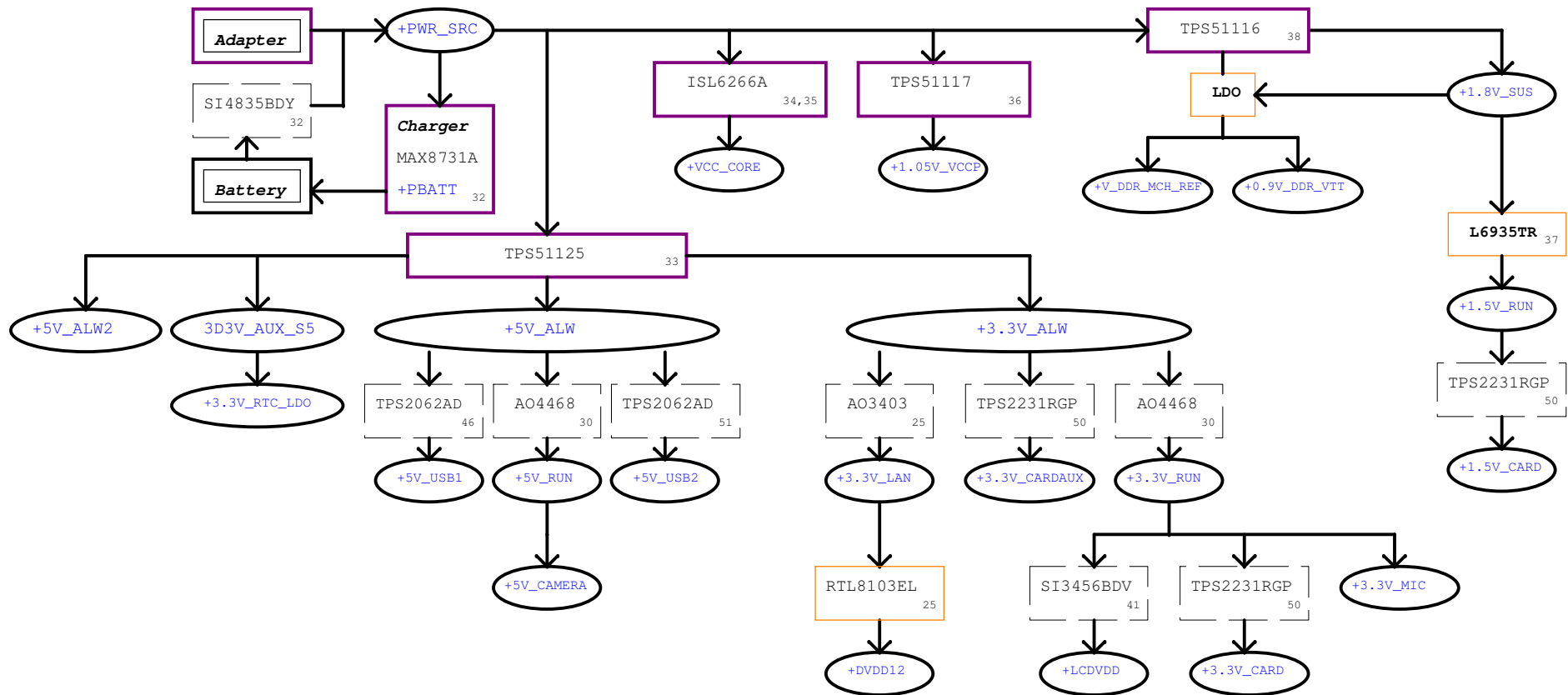
| MAX8731A/CHARGER 32 |          |
|---------------------|----------|
| INPUTS              | OUTPUTS  |
| +DC_IN<br>+PBATT    | +PWR_SRC |

| RUN PWR/3V, 5V 30    |                      |
|----------------------|----------------------|
| INPUTS               | OUTPUTS              |
| +5V_ALW<br>+3.3V_ALW | +5V_RUN<br>+3.3V_RUN |

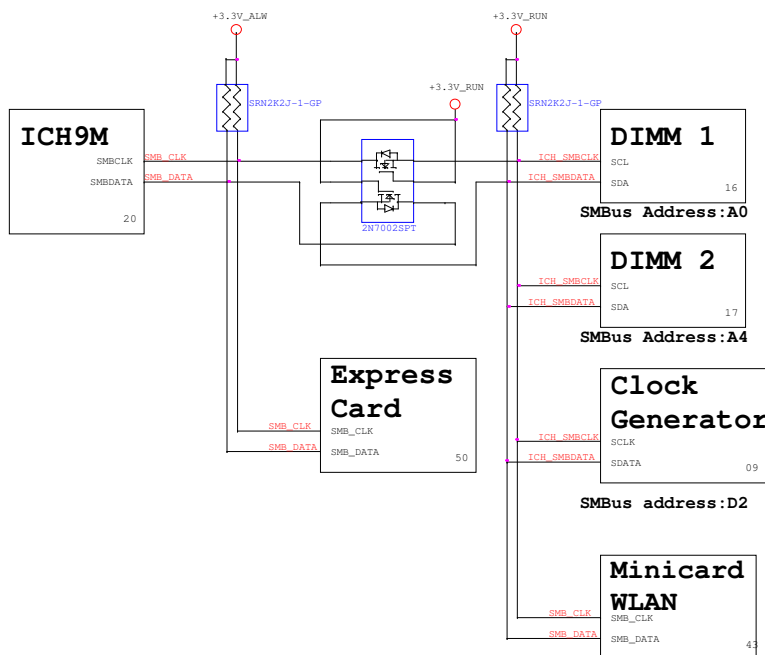


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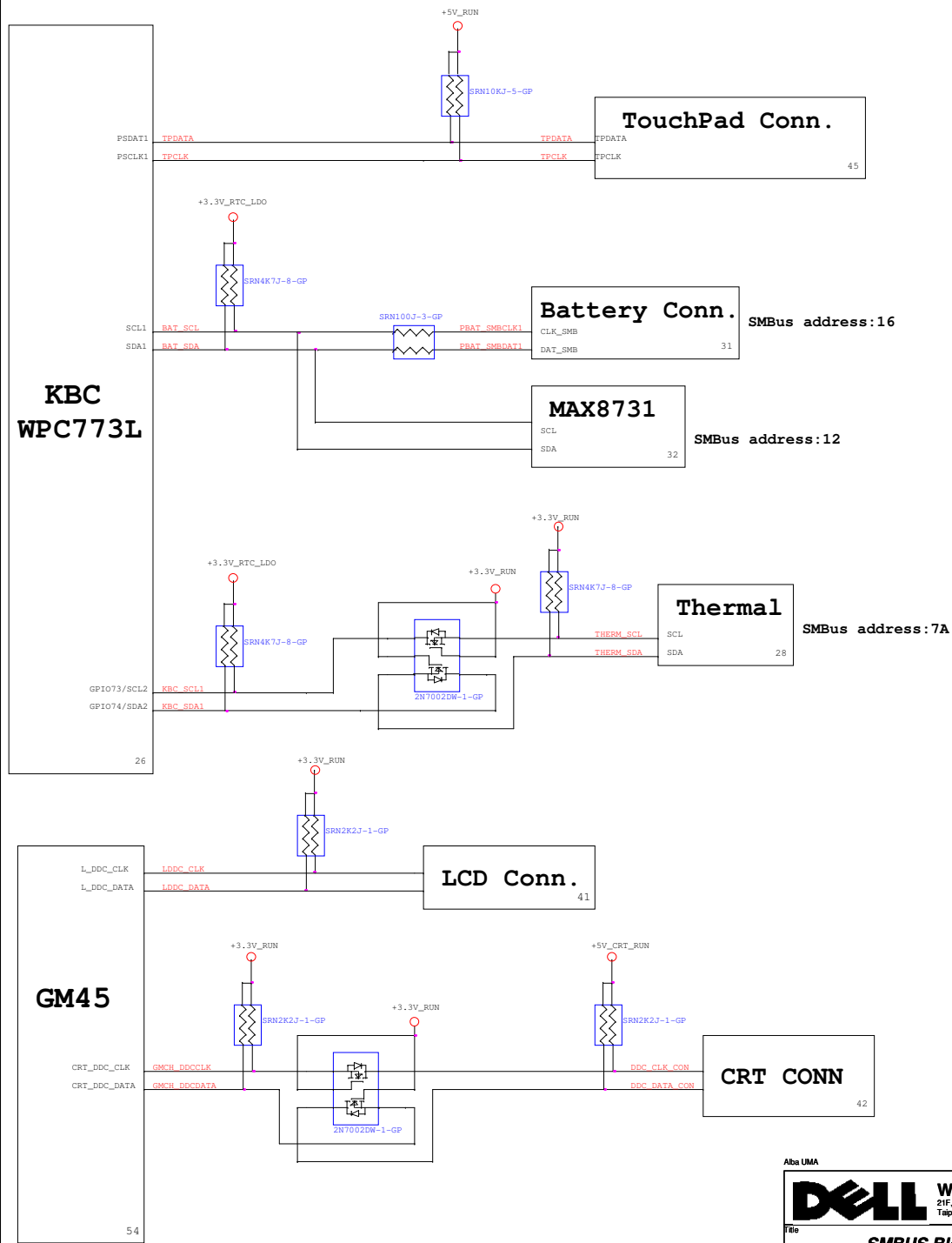
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| Title: <b>Block Diagram</b>  |                 |               |                                                                                                             |  |    |
| Size                         | Document Number | Rev           |                                                                                                             |  |    |
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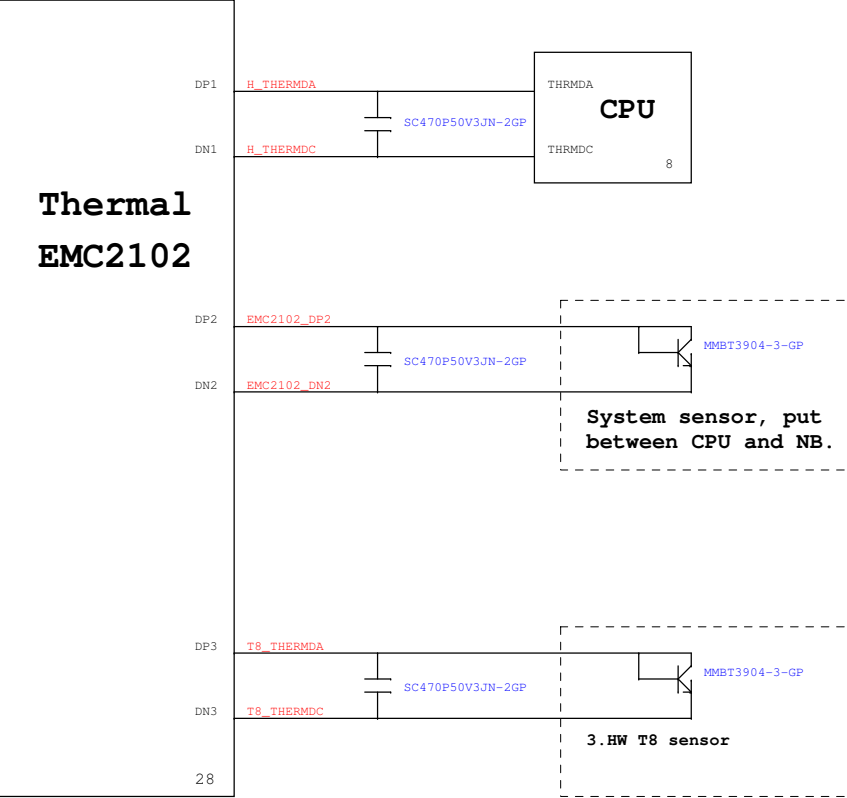
# ICH9M SMBus Block Diagram



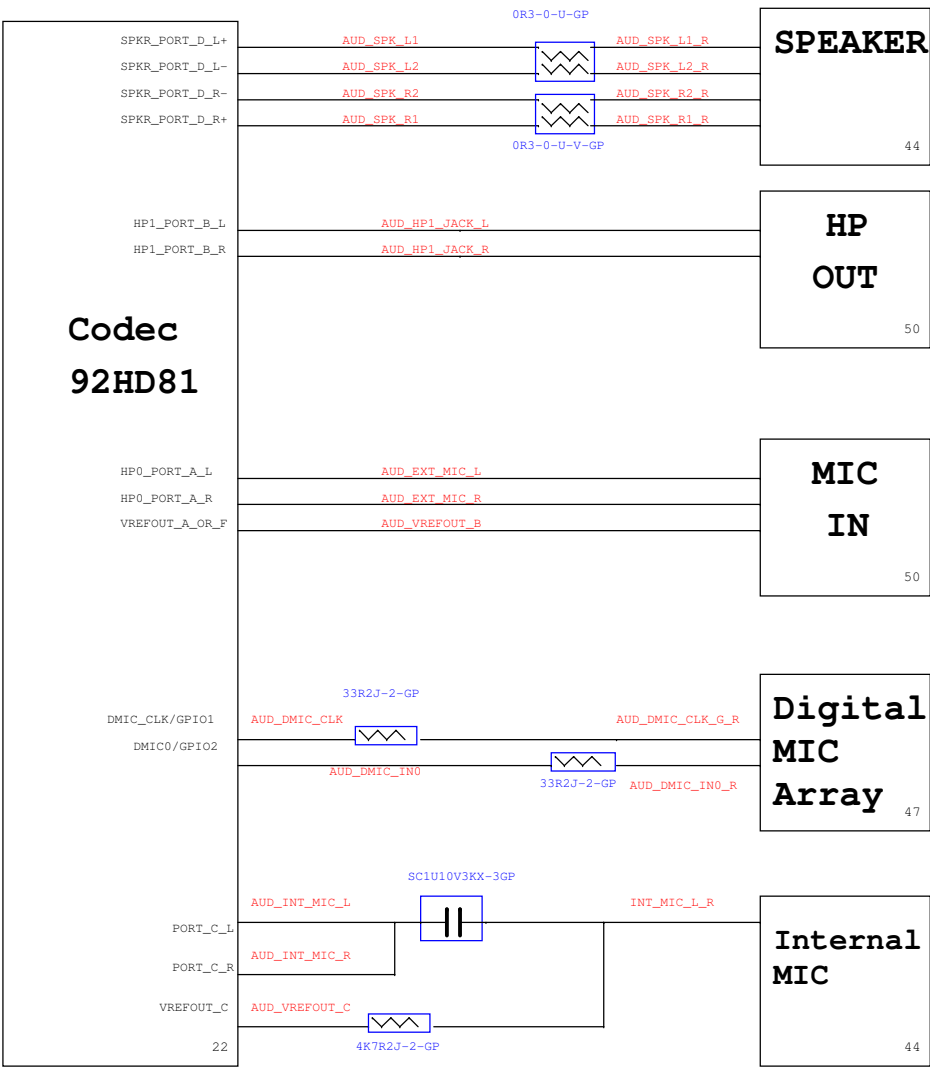
# KBC SMBus Block Diagram



# Thermal Block Diagram



# Audio Block Diagram



# ICH9M Functional Strap Definitions

ICH9 EDS 642879 Rev.1.5

| Signal                        | Usage/When Sampled                                                       | Comment                                                                                                                                                                                                            |
|-------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HDA_SDOUT                     | XOR Chain Entrance/<br>PCIE Port Config1 bit1<br>Rising Edge of PWROK.   | Allows entrance to XOR Chain testing when TP3 pulled low. When TP3 not pulled low at rising edge of PWROK, sets bit1 of RPC.PC (Config Registers: offset 224h). This signal has weak internal pull-down.           |
| HDA_SYNC                      | PCIE config1 bit0,<br>Rising Edge of PWROK.                              | This signal has a weak internal pull-down. Sets bit0 of PRC.PC (Config Registers: Offset 224h).                                                                                                                    |
| GNT2#/<br>GPIO53              | PCIE config2 bit2,<br>Rising Edge of PWROK.                              | This signal has a weak internal pull-up. Sets bit2 of PRC.PC2 (Config Registers: Offset 224h).                                                                                                                     |
| GPIO20                        | Reserved.                                                                | This signal should not be pulled high.                                                                                                                                                                             |
| GNT1#/<br>GPIO51              | ESI Strap (Server Only)<br>Rising Edge of PWROK.                         | ESI compatible mode is for server platforms only. This signal should not be pulled low for desktop and mobile.                                                                                                     |
| GNT3#/<br>GPIO55              | Top-Block Swap<br>override. Rising Edge<br>of PWROK.                     | Sampled low: Top-Block Swap mode (inverts A16 for all cycles targeting FWH BIOS space).<br>Note: Software will not be able to clear the Top-Swap bit until the system is rebooted without GNT3# being pulled down. |
| GNT0#:<br>SPI_CS1#/<br>GPIO58 | Boot BIOS Destination<br>Selection 0:1.<br>Rising Edge of PWROK.         | Controllable via Boot BIOS Destination bit (Config Registers: Offset 3410h:bit 11:10).<br>GNT0# is MSB, 01-SPI, 10-PCI, 11-LPC                                                                                     |
| SPI_MOSI                      | Integrated TPM Enable,<br>Rising Edge of CLPWROK                         | Sample low: the Integrated TPM will be disable. Sample high: the MCH TPM enable strap is sampled low and the TPM Disable bit is clear, the Integrated TPM will be enable.                                          |
| GPIO49                        | DMI Termination<br>Voltage. Rising Edge<br>of CLPWROK.                   | The signal is required to be low for desktop applications and required to be high for mobile applications.                                                                                                         |
| SATALED#                      | PCI Express Lane<br>Reversal. Rising Edge<br>of PWROK.                   | Signal has weak internal pull-up. Sets bit 27 of MPC.LR (Device 28: Function 0:Offset D8).                                                                                                                         |
| SPKR                          | No Reboot.<br>Rising Edge of PWROK.                                      | If sampled high, the system is strapped to the "No Reboot" mode (ICH9 will disable the TCO Timer system reboot feature). The status is readable via the NO REBOOT bit.                                             |
| TP3                           | XOR Chain Entrance.<br>Rising Edge of PWROK.                             | This signal should not be pull low unless using XOR Chain testing.                                                                                                                                                 |
| GPIO33/<br>HDA_DOCK<br>_EN#   | Flash Descriptor<br>Security Override<br>Strap. Rising Edge of<br>PWROK. | Sampled low: the Flash Descriptor Security will be overridden. If high, the security measures will be in effect. This should only be enabled in manufacturing environments using an external pull-up resistor.     |

# ICH9 Integrated pull-up and pull-down Resistors

ICH9 EDS 642879 Rev.1.5

| SIGNAL                   | Resistor Type/Value                                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------|
| CL_CLK[1:0]              | PULL-UP 20K                                                                                                           |
| CL_DATA[1:0]             | PULL-UP 20K                                                                                                           |
| CL_RST0#                 | PULL-UP 20K                                                                                                           |
| DPRSLEPVR/GPIO16         | PULL-DOWN 20K                                                                                                         |
| ENERGY_DETECT            | PULL-UP 20K                                                                                                           |
| HDA_BIT_CLK              | PULL-DOWN 20K                                                                                                         |
| HDA_DOCK_EN#/GPIO33      | PULL-UP 20K                                                                                                           |
| HDA_RST#                 | PULL-DOWN 20K                                                                                                         |
| HDA_SDIN[3:0]            | PULL-DOWN 20K                                                                                                         |
| HDA_SDOUT                | PULL-DOWN 20K                                                                                                         |
| HDA_SYNC                 | PULL-DOWN 20K                                                                                                         |
| GLAN_DOCK#               | The pull-up or pull-down active when configured for native GLAN_DOCK# functionality and determined by LAN controller. |
| GNT[3:0]#/GPIO[55,53,51] | PULL-UP 20K                                                                                                           |
| GPIO20                   | PULL-DOWN 20K                                                                                                         |
| GPIO49                   | PULL-UP 20K                                                                                                           |
| LDA[3:0]#/FWH[3:0]#      | PULL-UP 20K                                                                                                           |
| LAN_RXD[2:0]             | PULL-UP 20K                                                                                                           |
| LDRQ[0]                  | PULL-UP 20K                                                                                                           |
| LDRQ[1]/GPIO23           | PULL-UP 20K                                                                                                           |
| PME#                     | PULL-UP 20K                                                                                                           |
| PWRBTN#                  | PULL-UP 20K                                                                                                           |
| SATALED#                 | PULL-UP 15K                                                                                                           |
| SPI_CS1#/GPIO58/CLGPIO6  | PULL-UP 20K                                                                                                           |
| SPI_MOSI                 | PULL-DOWN 20K                                                                                                         |
| SPI_MISO                 | PULL-UP 20K                                                                                                           |
| SPKR                     | PULL-DOWN 20K                                                                                                         |
| TACH_[3:0]               | PULL-UP 20K                                                                                                           |
| TP[3]                    | PULL-UP 20K                                                                                                           |
| USB[11:0][P,N]           | PULL-DOWN 15K                                                                                                         |

# Cantiga chipset and ICH9M I/O controller Hub strapping configuration

Montevina Platform Design guide 22339 Rev.0.5

| Pin Name                                     | Strap Description                                               | Configuration                                                                                                                                                              |
|----------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CFG[2:0]                                     | FSB Frequency Select                                            | 000 = FSB1067<br>011 = FSB667<br>010 = FSB800<br>others = Reserved                                                                                                         |
| CFG[4:3]<br>CFG8<br>CFG[15:14]<br>CFG[18:17] | Reserved                                                        |                                                                                                                                                                            |
| CFG5                                         | DMI x2 Select                                                   | 0 = DMI x2<br>1 = DMI x4 (Default)                                                                                                                                         |
| CFG6                                         | iTPM Host Interface                                             | 0 = The iTPM Host Interface is enabled (Note 2)<br>1 = The iTPM Host Interface is disabled (default)                                                                       |
| CFG7                                         | Intel Management<br>engine crypto strap                         | 0 = Transport Layer Security (TLS) cipher suite with no confidentiality<br>1 = TLS cipher suite with confidentiality(Default)                                              |
| CFG9                                         | PCIE Graphics Lane                                              | 0 = Reserved Lanes, 15->0, 14->1 ect..<br>1 = Normal operation (Default): Lane Numbered in Order                                                                           |
| CFG10                                        | PCIE Loopback enable                                            | 0 = Enable (Note 3)<br>1 = Disable (Default)                                                                                                                               |
| CFG[13:12]                                   | XOR/ALL                                                         | 00 = Reserve<br>10 = XOR mode Enabled<br>01 = ALLZ mode Enable (Note 3)<br>11 = Disabled (Default)                                                                         |
| CFG16                                        | FSB Dynamic ODT                                                 | 0 = Dynamic ODT Disabled<br>1 = Dynamic ODT Enabled (Default)                                                                                                              |
| CFG19                                        | DMI Lane Reversal                                               | 0 = Normal operation (Default): Lane Numbered in Order<br>1 = Reverse Lanes<br>DMI x4 mode [MCH->ICH]: (3->0, 2->1, 1->2 and 0->3)<br>DMI x2 mode [MCH->ICH]: (3->0, 2->1) |
| CFG20                                        | Digital Display Port<br>(SDVO/DP/iHDMI)<br>Concurrent with PCIE | 0 = Only Digital Display Port or PCIE is operational (Default)<br>1 = Digital display Port and PCIE are operating simultaneously via the PEG port                          |
| SDVO<br>_CTRLDATA                            | SDVO Present                                                    | 0 = No SDVO Card Present (Default)<br>1 = SDVO Card Present                                                                                                                |
| L_DDC_DATA                                   | Local Flat Panel<br>(LFP) Present                               | 0 = LFP Disabled (Default)<br>1 = LFP Card Present; PCIE disabled                                                                                                          |

## NOTE:

- All strap signals are sampled with respect to the leading edge of the (G)MCH Power OK (PWROK) signal.
- iTPM can be disabled by a 'Soft-Strap' option in the Flash-decriptor section of the Firmware. This 'Soft-Strap' is activated only after enabling iTPM via CFG6. Only one of the CFG10/CFG12/CFG13 straps can be enabled at any time.

## PCIE Routing

|       |               |
|-------|---------------|
| LANE2 | MiniCard WLAN |
| LANE3 | LAN           |
| LANE5 | New Card      |

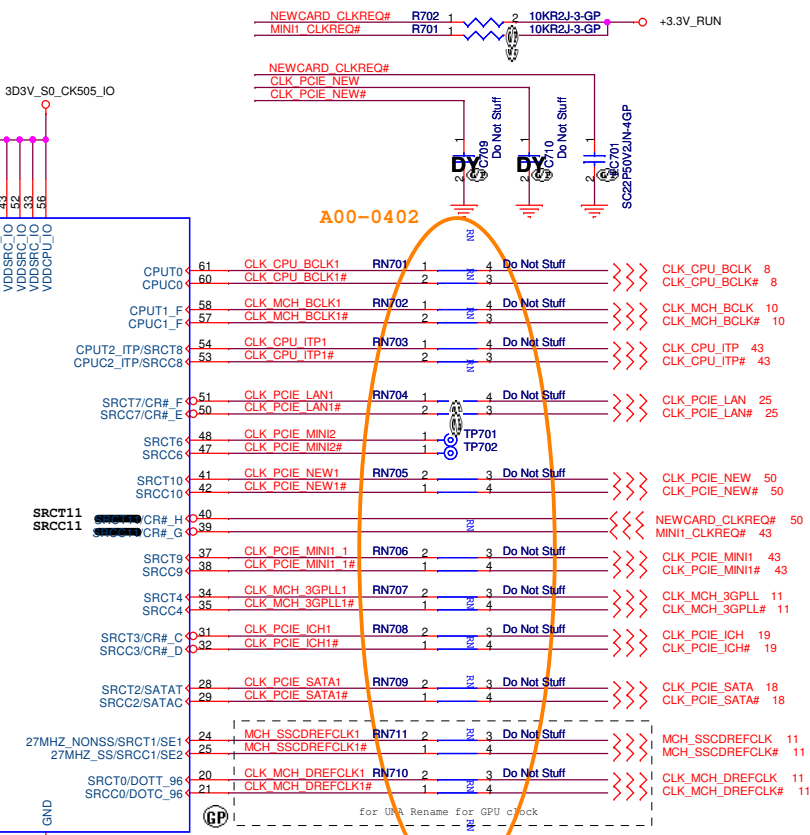
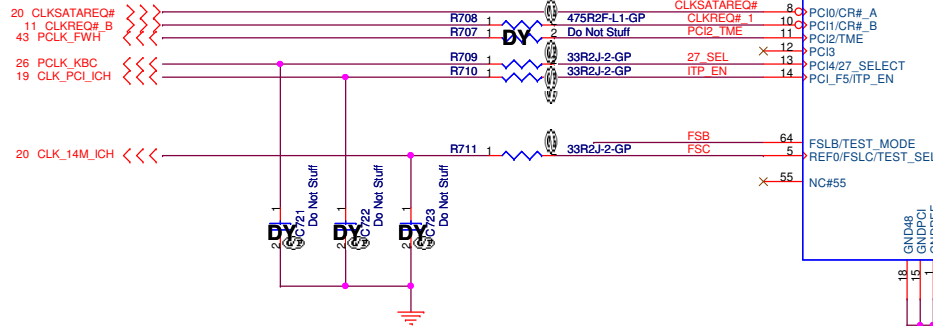
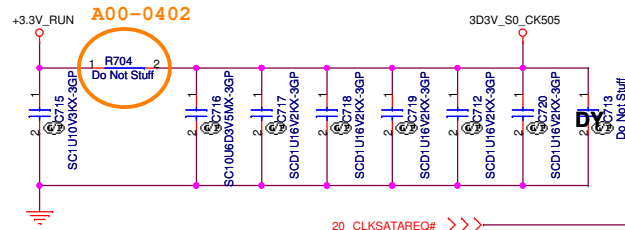
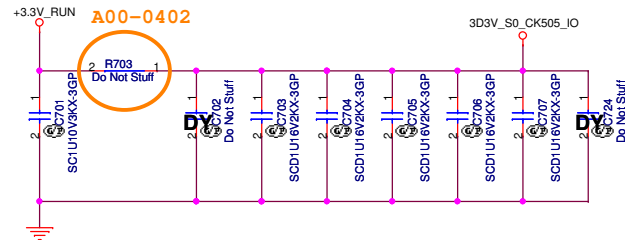
## USB Table

| USB  |             |
|------|-------------|
| Pair | Device      |
| 0    | USB1        |
| 1    | USB2        |
| 2    | USB3        |
| 3    | RESERVED    |
| 4    | MINI CARD   |
| 5    | RESERVED    |
| 6    | BLUETOOTH   |
| 7    | NEW CARD    |
| 8    | RESERVED    |
| 9    | RESERVED    |
| 10   | Card Reader |
| 11   | CAMERA      |

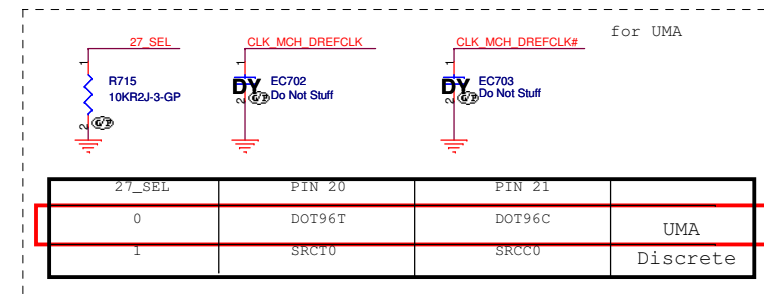
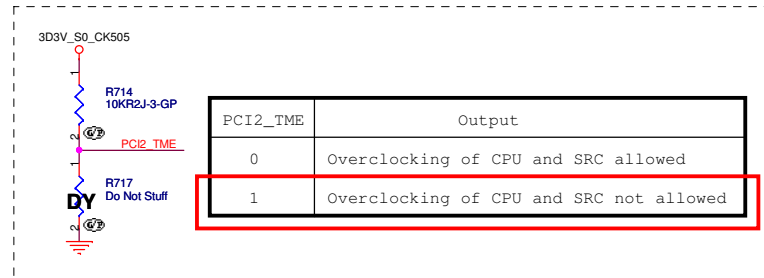
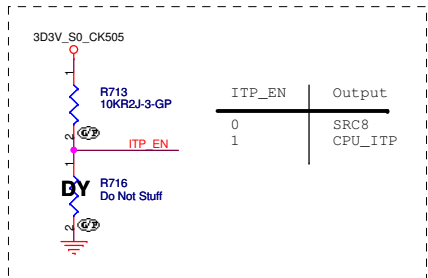
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|                                                                                       |                        |                                                                                                             |         |
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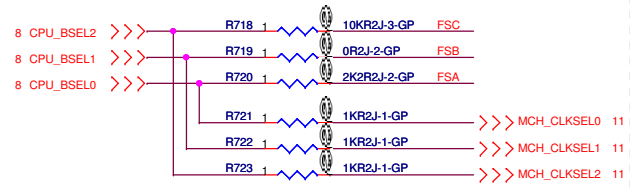
# SSID = CLOCK



Main source: 71.08513.003 (SLG8SP513VTR)  
Second source: 71.00875.C03 (RTM875N-606-VD-GRT)



| SEL2 | SEL1 | SEL0 | CPU  | FSB   |
|------|------|------|------|-------|
| FSC  | FSB  | FSA  |      |       |
| 1    | 0    | 1    | 100M | X     |
| 0    | 0    | 1    | 133M | 533M  |
| 0    | 1    | 1    | 166M | 667M  |
| 0    | 1    | 0    | 200M | 800M  |
| 0    | 0    | 0    | 266M | 1067M |



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**DELL** Wistron Corporation

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Title: **Clock Generator SLG8SP513VTR**

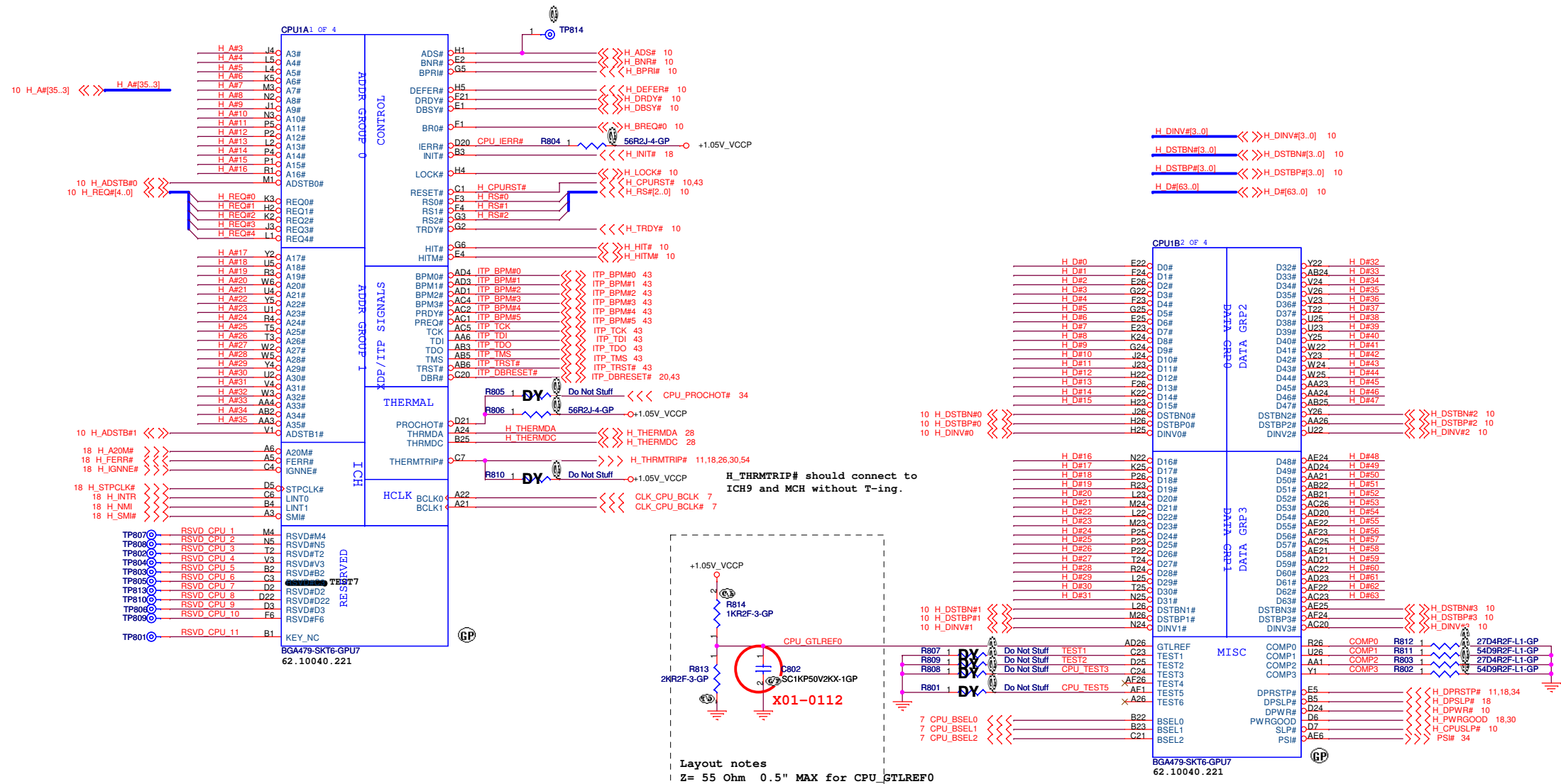
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SSID = CPU



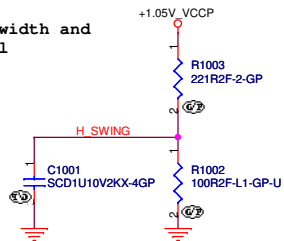
Layout Note:  
Comp0, 2 connect with Zo=27.4 ohm, make trace length shorter than 0.5".  
Comp1, 3 connect with Zo=55 ohm, make trace length shorter than 0.5".



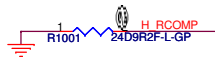
SSID = MCH

H\_SWING routing Trace width and Spacing use 10 / 20 mil

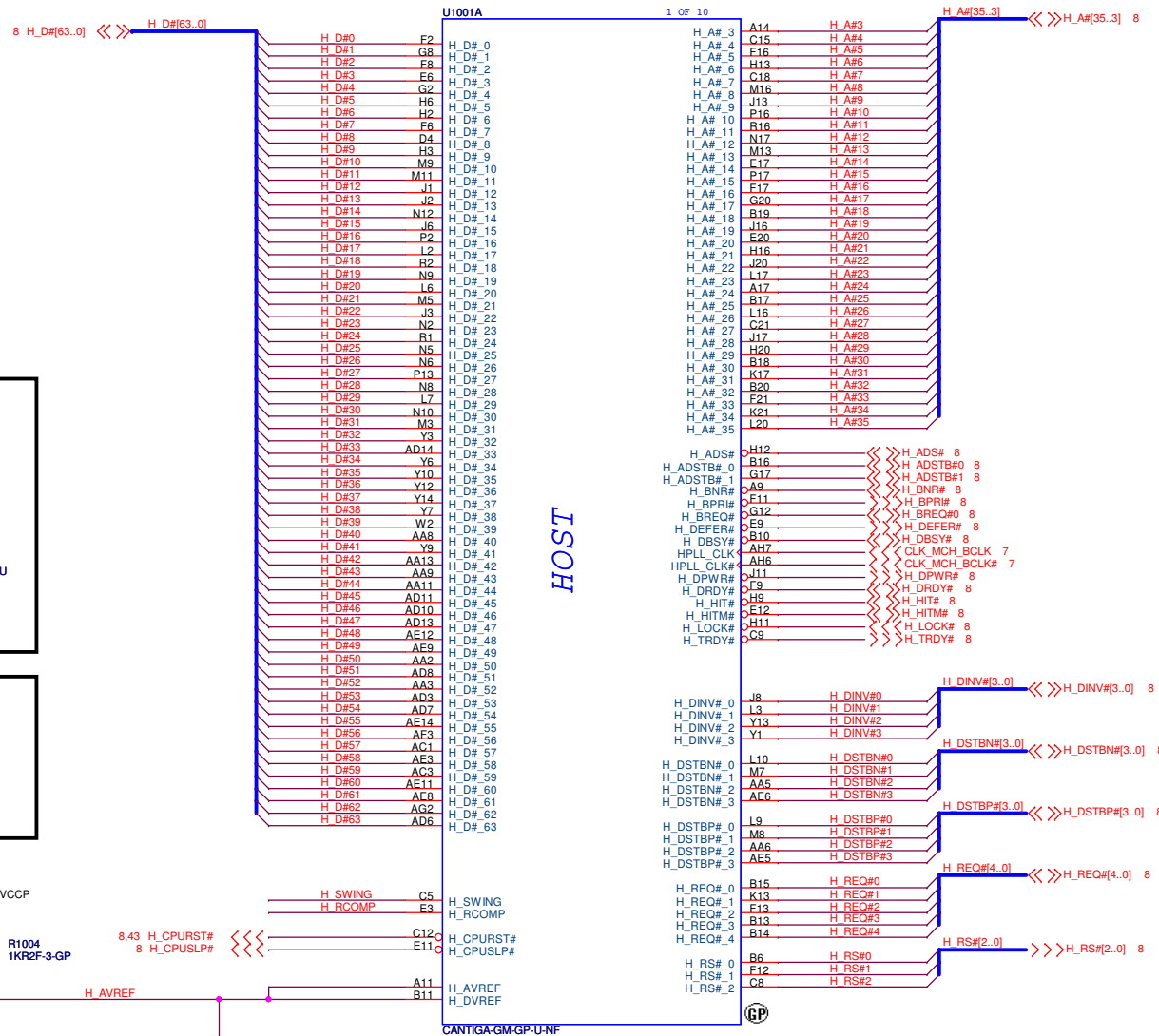
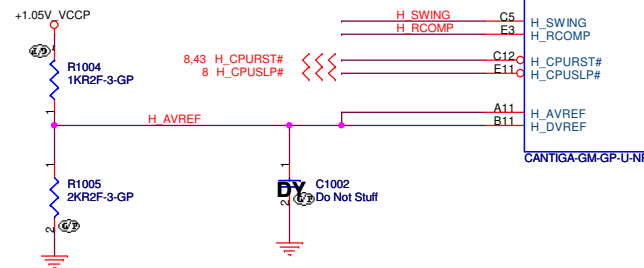
H\_SWING Resistors and Capacitors close MCH  
500 mil ( MAX )



H\_RCOMP routing Trace width and Spacing use 10 / 20 mil



Place R1001 near to the chip ( < 0.5")

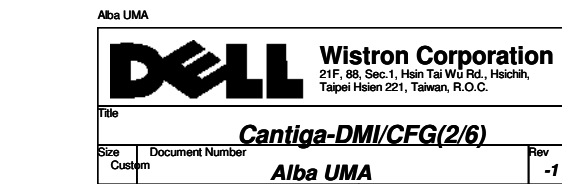
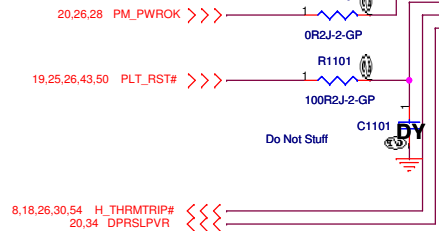


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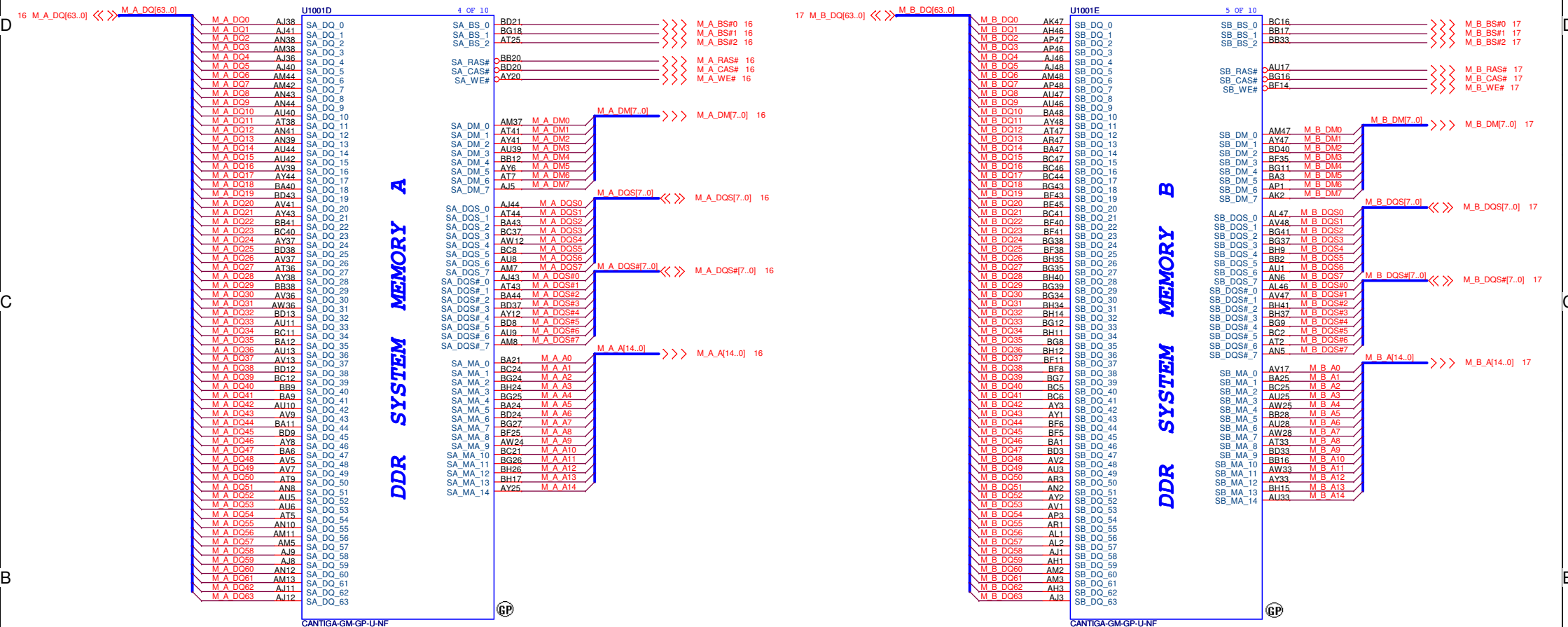


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\* is current setting



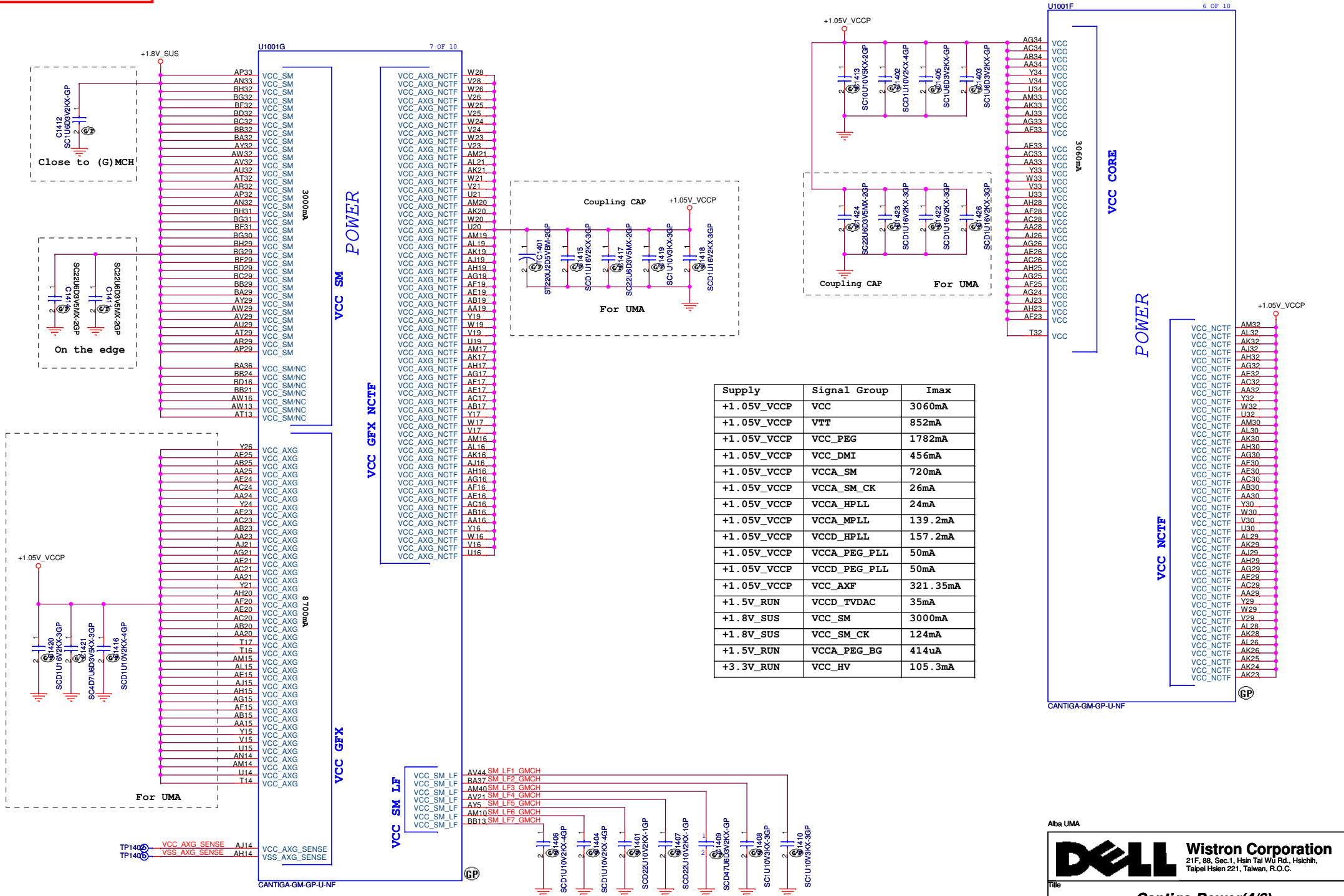
SSID = MCH



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SSID = MCH



| Supply      | Signal Group | Imax     |
|-------------|--------------|----------|
| +1.05V_VCCP | VCC          | 3060mA   |
| +1.05V_VCCP | VTT          | 852mA    |
| +1.05V_VCCP | VCC_PEG      | 1782mA   |
| +1.05V_VCCP | VCC_DMI      | 456mA    |
| +1.05V_VCCP | VCCA_SM      | 720mA    |
| +1.05V_VCCP | VCCA_SM_CK   | 26mA     |
| +1.05V_VCCP | VCCA_HPLL    | 24mA     |
| +1.05V_VCCP | VCCA_MPLL    | 139.2mA  |
| +1.05V_VCCP | VCCD_HPLL    | 157.2mA  |
| +1.05V_VCCP | VCCA_PEG_PLL | 50mA     |
| +1.05V_VCCP | VCCD_PEG_PLL | 50mA     |
| +1.05V_VCCP | VCC_AXF      | 321.35mA |
| +1.5V_RUN   | VCCD_TVDD    | 35mA     |
| +1.8V_SUS   | VCC_SM_CK    | 124mA    |
| +1.5V_RUN   | VCCA_PEG_BG  | 414uA    |
| +3.3V_RUN   | VCC_HV       | 105.3mA  |

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Title

Cantiga-Power(4/6)

Size

Document Number

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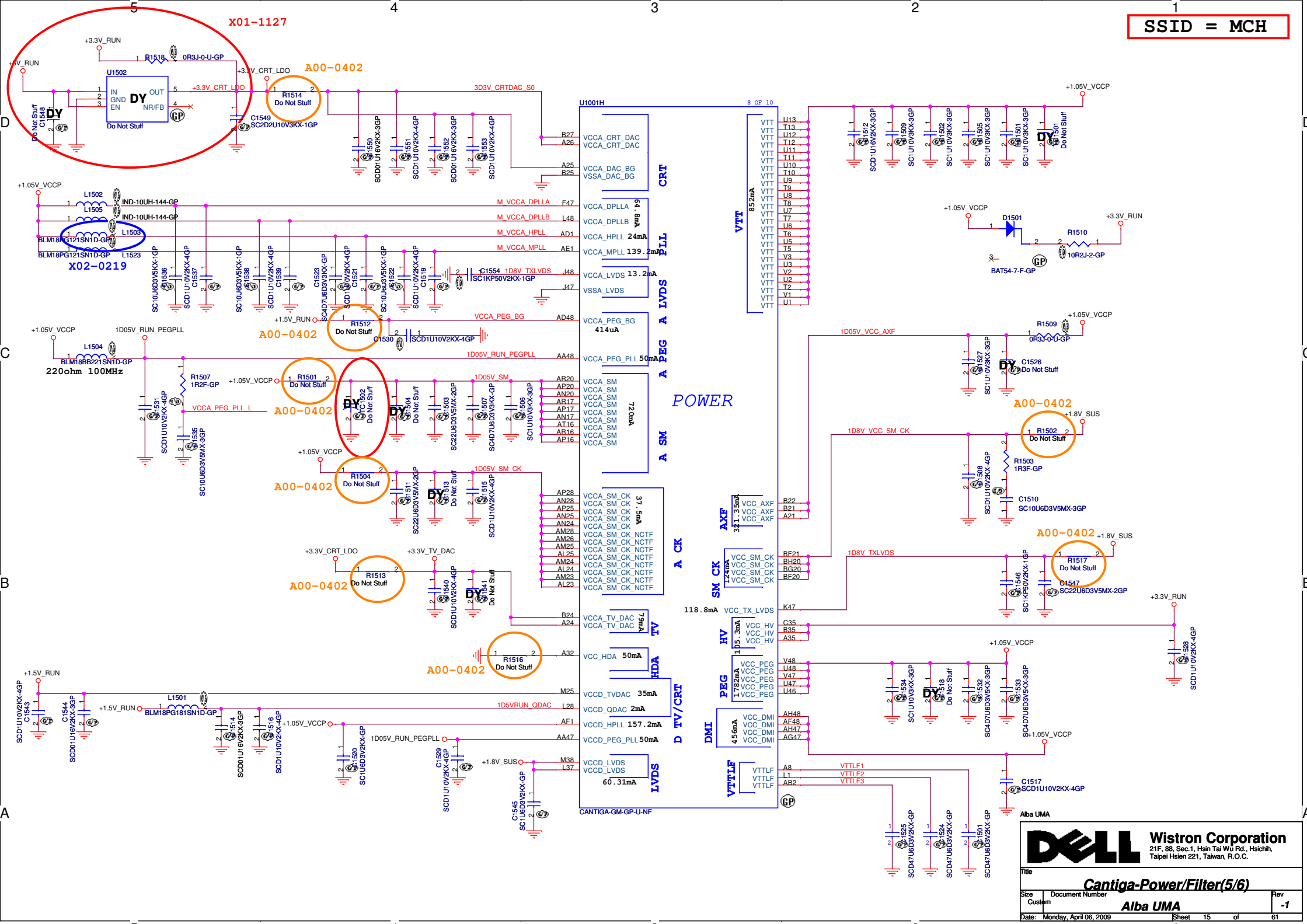
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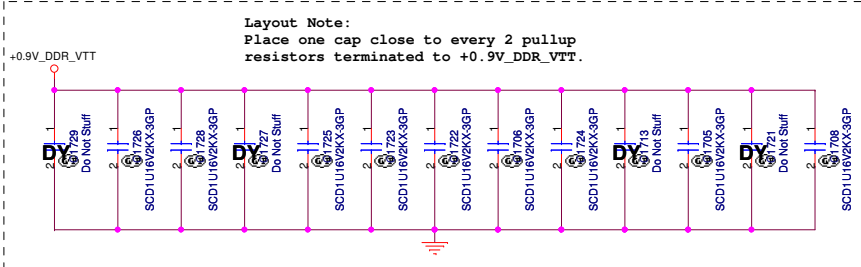
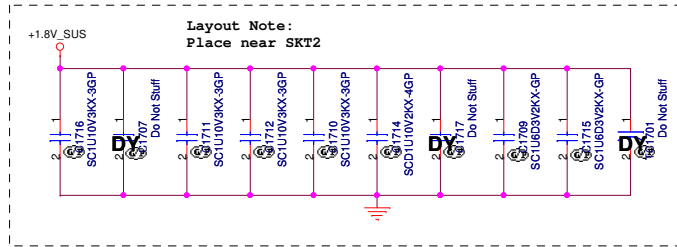
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# SSID = MEMORY

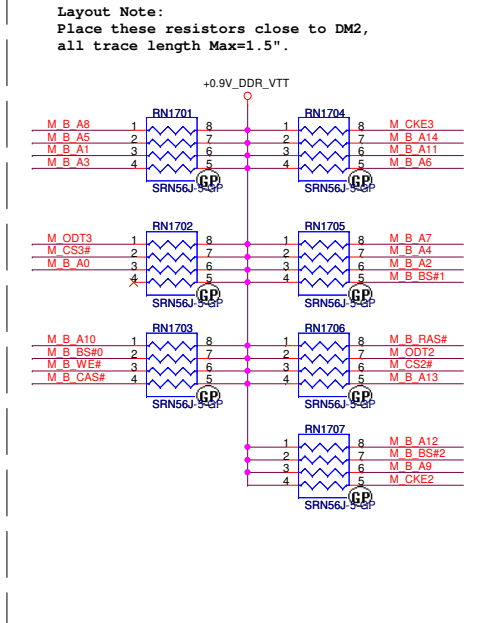
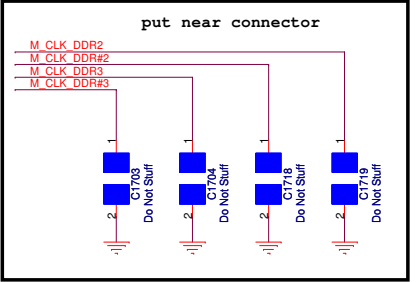
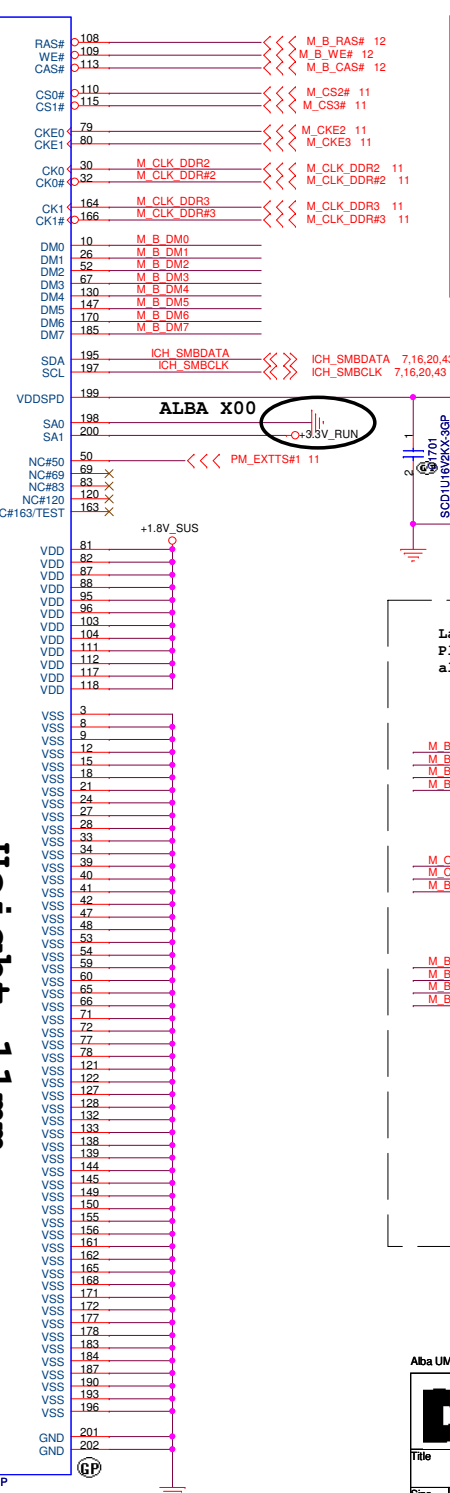
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 12 M\_B\_DQ[63..0] <<< <<<  
 12 M\_B\_DM[7..0] <<< <<<  
 12 M\_B\_DQS[7..0] <<< <<<  
 12 M\_B\_A[14..0] <<< <<<



12 M\_B\_BS#2 >>> M\_B\_BS#2  
 12 M\_B\_BS#0 >>> M\_B\_BS#0  
 12 M\_B\_BS#1 >>> M\_B\_BS#1

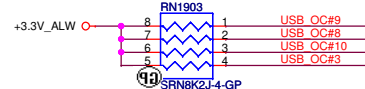
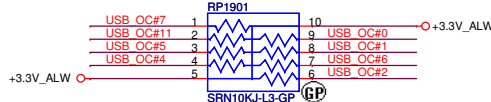
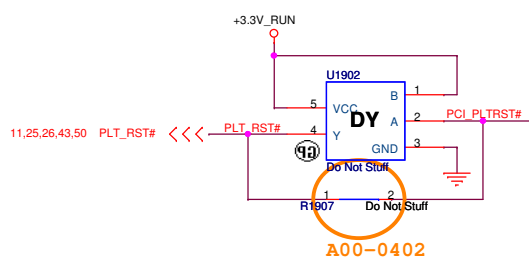
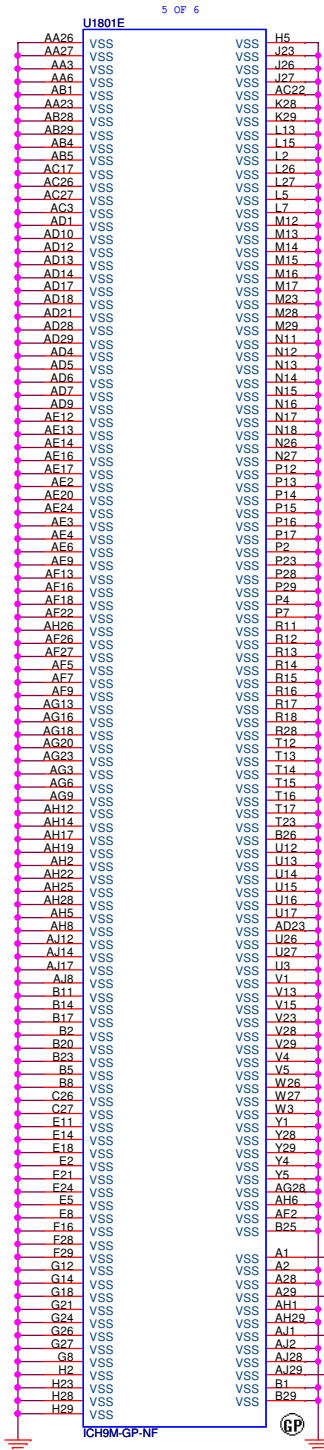
|                 |     |         |
|-----------------|-----|---------|
| M_B A0          | 102 | A0      |
| M_B A1          | 101 | A1      |
| M_B A2          | 100 | A2      |
| M_B A3          | 99  | A3      |
| M_B A4          | 98  | A4      |
| M_B A5          | 97  | A5      |
| M_B A6          | 96  | A6      |
| M_B A7          | 95  | A7      |
| M_B A8          | 94  | A8      |
| M_B A9          | 93  | A9      |
| M_B A10         | 92  | A10/AP  |
| M_B A11         | 91  | A11     |
| M_B A12         | 90  | A12     |
| M_B A13         | 89  | A13     |
| M_B A14         | 88  | A14     |
| M_B BS#2        | 85  | A15/BA2 |
| M_B BS#0        | 107 | BA0     |
| M_B BS#1        | 106 | BA1     |
| M_B DQ0         | 5   | DQ0     |
| M_B DQ1         | 7   | DQ1     |
| M_B DQ2         | 17  | DQ2     |
| M_B DQ3         | 19  | DQ3     |
| M_B DQ4         | 4   | DQ4     |
| M_B DQ5         | 6   | DQ5     |
| M_B DQ6         | 14  | DQ6     |
| M_B DQ7         | 16  | DQ7     |
| M_B DQ8         | 23  | DQ8     |
| M_B DQ9         | 25  | DQ9     |
| M_B DQ10        | 35  | DQ10    |
| M_B DQ11        | 37  | DQ11    |
| M_B DQ12        | 20  | DQ12    |
| M_B DQ13        | 22  | DQ13    |
| M_B DQ14        | 36  | DQ14    |
| M_B DQ15        | 38  | DQ15    |
| M_B DQ16        | 43  | DQ16    |
| M_B DQ17        | 45  | DQ17    |
| M_B DQ18        | 55  | DQ18    |
| M_B DQ19        | 57  | DQ19    |
| M_B DQ20        | 44  | DQ20    |
| M_B DQ21        | 46  | DQ21    |
| M_B DQ22        | 58  | DQ22    |
| M_B DQ23        | 61  | DQ23    |
| M_B DQ24        | 63  | DQ24    |
| M_B DQ25        | 73  | DQ25    |
| M_B DQ26        | 75  | DQ26    |
| M_B DQ27        | 62  | DQ27    |
| M_B DQ28        | 64  | DQ28    |
| M_B DQ29        | 74  | DQ29    |
| M_B DQ30        | 76  | DQ30    |
| M_B DQ31        | 123 | DQ31    |
| M_B DQ32        | 125 | DQ32    |
| M_B DQ33        | 135 | DQ33    |
| M_B DQ34        | 137 | DQ34    |
| M_B DQ35        | 124 | DQ35    |
| M_B DQ36        | 126 | DQ36    |
| M_B DQ37        | 134 | DQ37    |
| M_B DQ38        | 136 | DQ38    |
| M_B DQ39        | 141 | DQ39    |
| M_B DQ40        | 143 | DQ40    |
| M_B DQ41        | 151 | DQ41    |
| M_B DQ42        | 153 | DQ42    |
| M_B DQ43        | 140 | DQ43    |
| M_B DQ44        | 142 | DQ44    |
| M_B DQ45        | 152 | DQ45    |
| M_B DQ46        | 154 | DQ46    |
| M_B DQ47        | 157 | DQ47    |
| M_B DQ48        | 159 | DQ48    |
| M_B DQ49        | 173 | DQ49    |
| M_B DQ50        | 175 | DQ50    |
| M_B DQ51        | 158 | DQ51    |
| M_B DQ52        | 160 | DQ52    |
| M_B DQ53        | 174 | DQ53    |
| M_B DQ54        | 176 | DQ54    |
| M_B DQ55        | 179 | DQ55    |
| M_B DQ56        | 181 | DQ56    |
| M_B DQ57        | 183 | DQ57    |
| M_B DQ58        | 185 | DQ58    |
| M_B DQ59        | 187 | DQ59    |
| M_B DQ60        | 189 | DQ60    |
| M_B DQ61        | 191 | DQ61    |
| M_B DQ62        | 193 | DQ62    |
| M_B DQ63        | 194 | DQ63    |
| M_B DQS#0       | 110 | DQS0#   |
| M_B DQS#1       | 290 | DQS1#   |
| M_B DQS#2       | 49  | DQS2#   |
| M_B DQS#3       | 68  | DQS3#   |
| M_B DQS#4       | 129 | DQS4#   |
| M_B DQS#5       | 140 | DQS5#   |
| M_B DQS#6       | 167 | DQS6#   |
| M_B DQS#7       | 160 | DQS7#   |
| M_B DQS0        | 13  | DQS0    |
| M_B DQS1        | 31  | DQS1    |
| M_B DQS2        | 51  | DQS2    |
| M_B DQS3        | 70  | DQS3    |
| M_B DQS4        | 131 | DQS4    |
| M_B DQS5        | 148 | DQS5    |
| M_B DQS6        | 169 | DQS6    |
| M_B DQS7        | 188 | DQS7    |
| M_ODT2          | 114 | ODT0    |
| M_ODT3          | 119 | ODT1    |
| VREF            | 1   | VREF    |
| VSS             | 2   | VSS     |
| NP1             | NP1 | NP1     |
| NP2             | NP2 | NP2     |
| DDR2-200P-33-GP |     |         |

Height 11mm





SSID = ICH



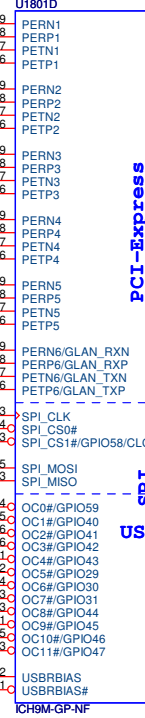
Mini Card

LAN

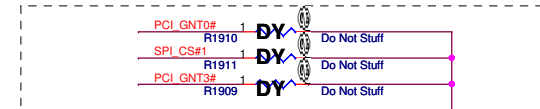
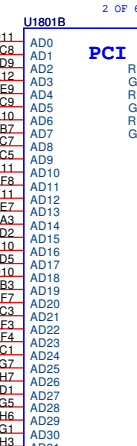
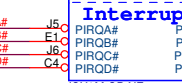
New Card

NCTF PIN

U1801D 4 OF 6



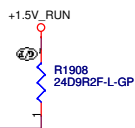
Interrupt I/F



| BOOT BIOS Strap |          |                    |
|-----------------|----------|--------------------|
| PCI_GNT#0       | SPI_CS#1 | BOOT BIOS Location |
| 0               | 1        | SPI                |
| 1               | 0        | PCI                |
| 1               | 1        | LPC (Default)      |

A16 swap override strap

|                                |
|--------------------------------|
| low = A16 swap override enable |
| high = default                 |



| USB Pair | Device      |
|----------|-------------|
| 0        | USB1        |
| 1        | USB2        |
| 2        | USB3        |
| 3        | RESERVED    |
| 4        | MINI CARD   |
| 5        | RESERVED    |
| 6        | BLUETOOTH   |
| 7        | NEW CARD    |
| 8        | RESERVED    |
| 9        | RESERVED    |
| 10       | Card Reader |
| 11       | CAMERA      |

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ICH9-PCI/PCIE/DMI/USB/GND(2/4)

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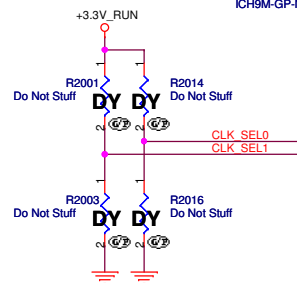
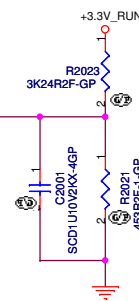
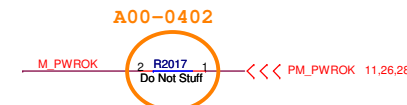
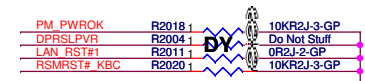
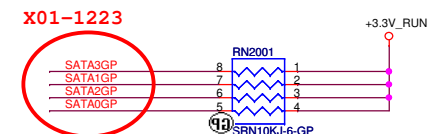
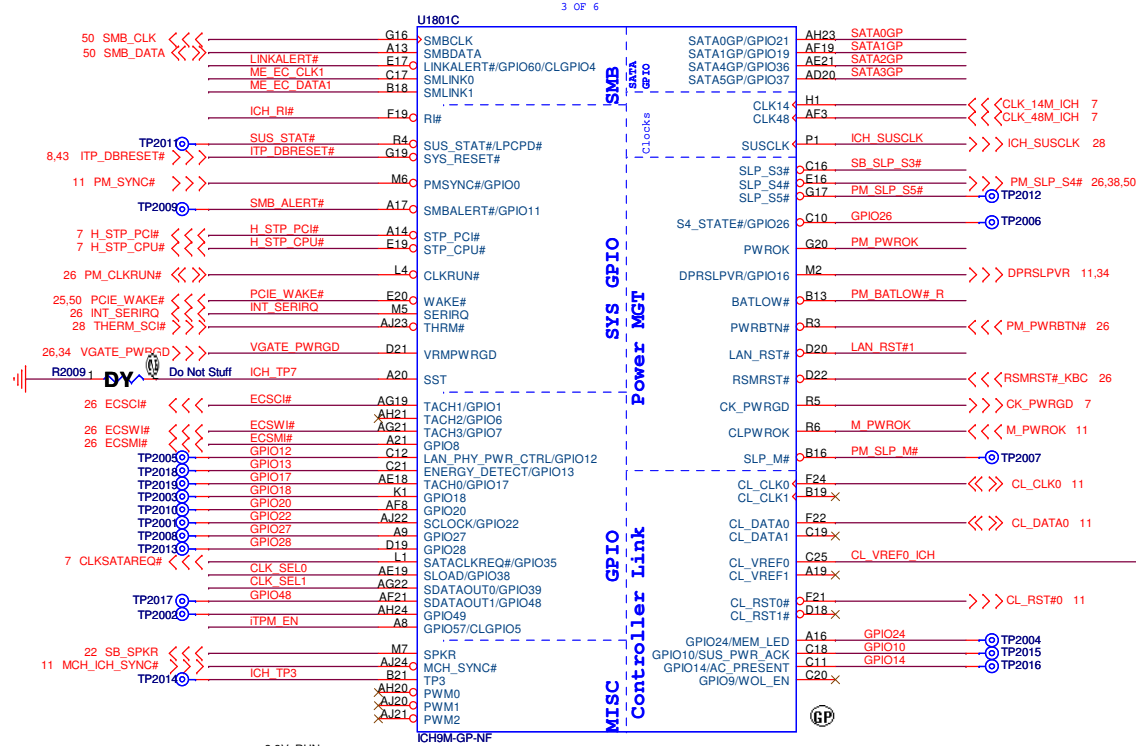
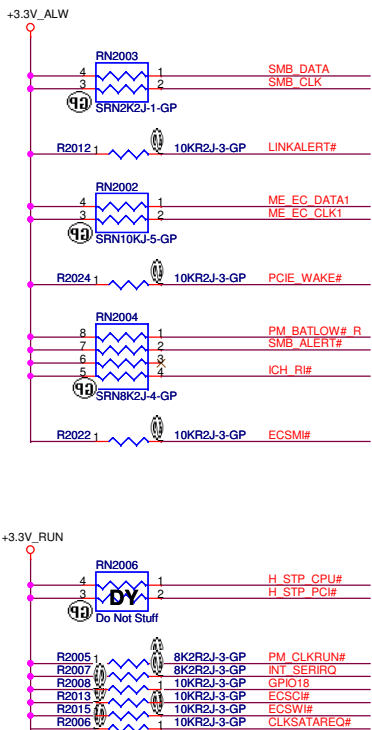
Document Number

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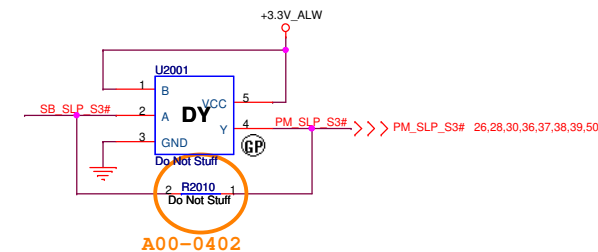
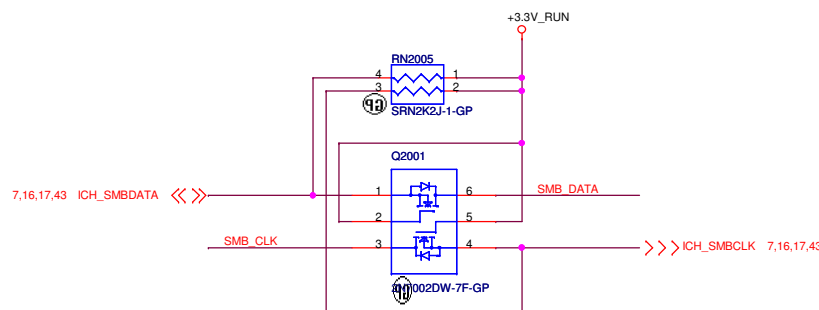
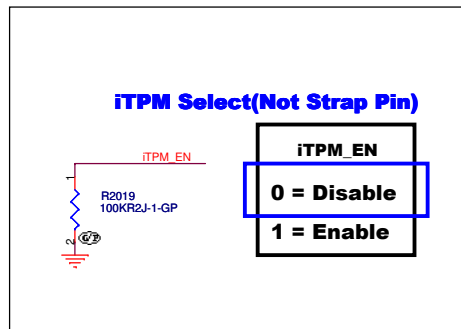
Rev -1

SSID = ICH



### CLK Gen Select(Not Strap Pin)

| CLK Gen select |          |          |
|----------------|----------|----------|
|                | CLK_SEL0 | CLK_SEL1 |
| Disable        | X        | X        |
| Seligo         | 1        | 1        |
| Realtek        | 1        | 0        |
| ICS            | 0        | 1        |







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Title

Size

Document Number

Rev

Custom

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Title

(Reserve)

Size  
Custom

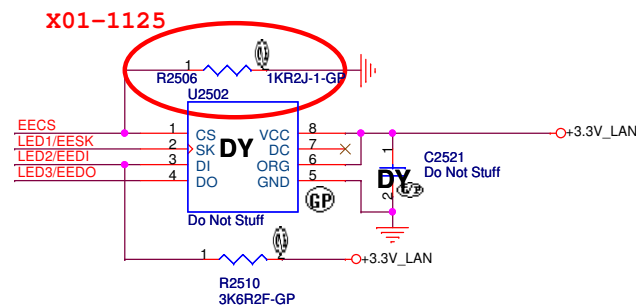
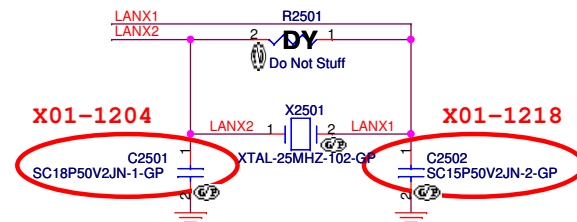
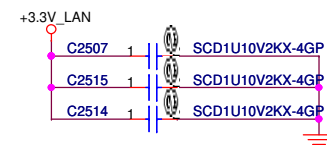
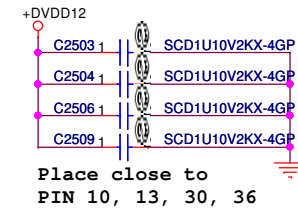
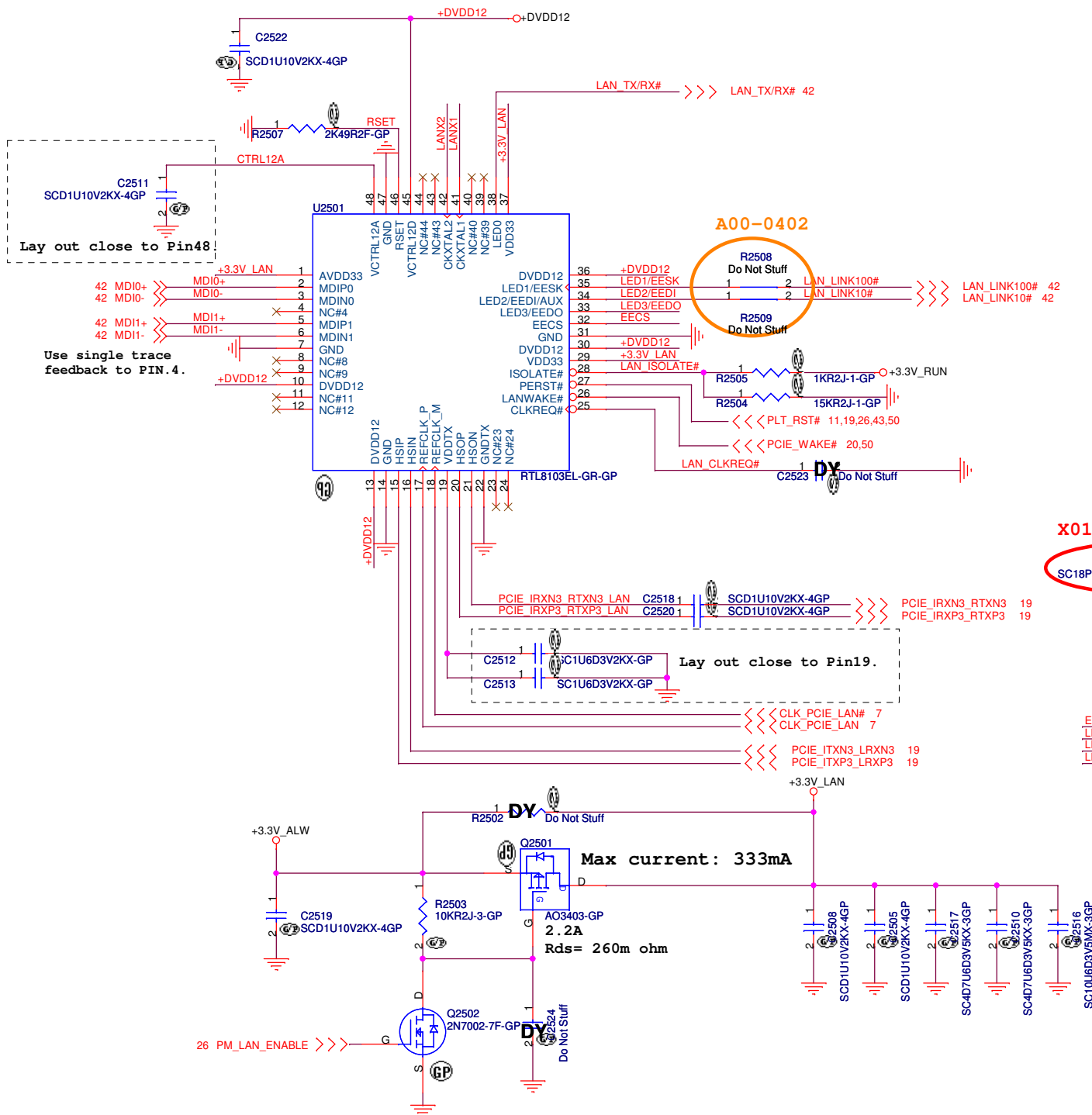
Document Number  
**Alba UMA**

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**SSID = LOM**

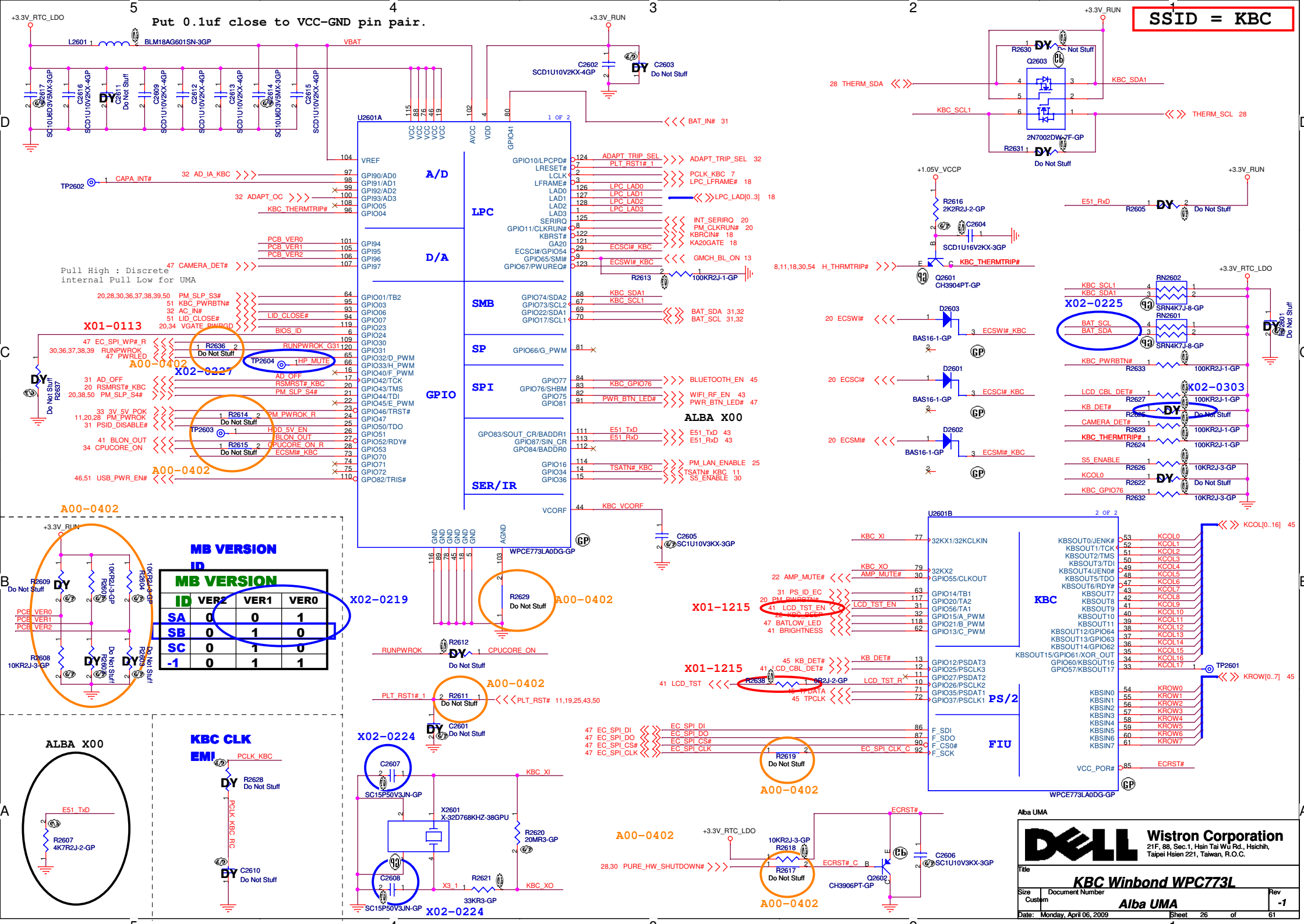


Alba UMA



## LAN Realtek-RTL8102EL

|                              |                                    |                  |
|------------------------------|------------------------------------|------------------|
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| Date: Monday, April 06, 2009 | Sheet 25 of 61                     |                  |



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Title

**(Reserve)**

Size  
Custom

Document Number  
**Alba UMA**

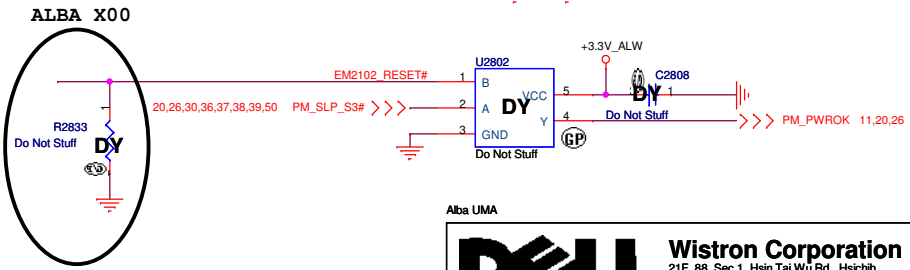
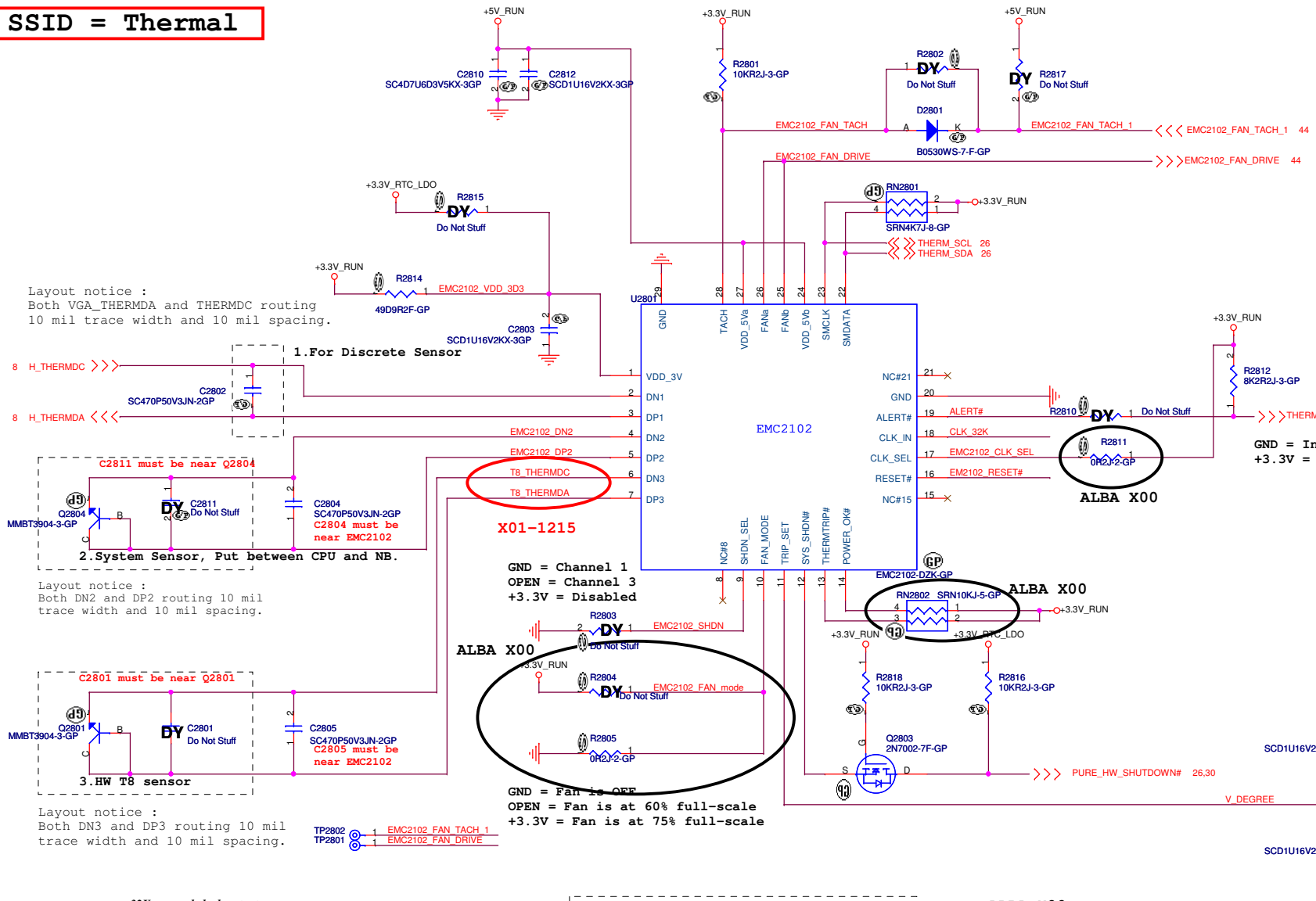
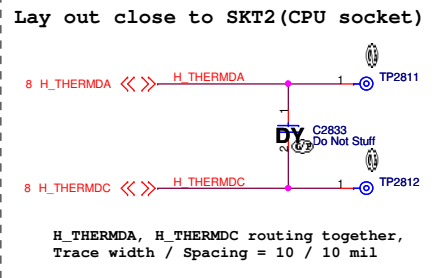
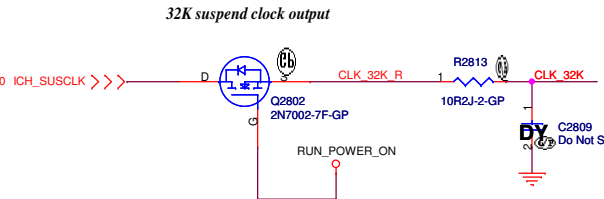
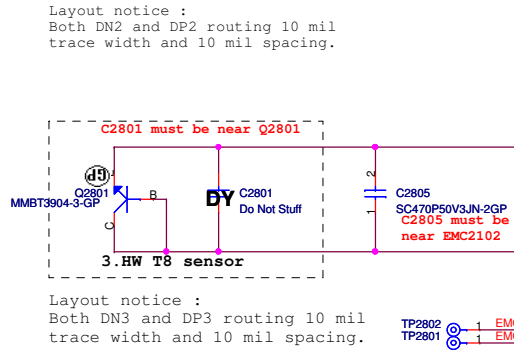
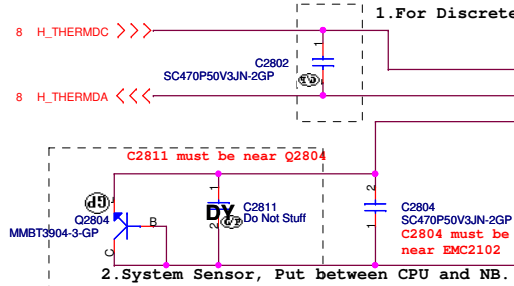
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# SSID = Thermal

Layout notice :  
Both VGA\_THERMDA and THERMDC routing  
10 mil trace width and 10 mil spacing.



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Title

**(Reserve)**

Size  
Custom

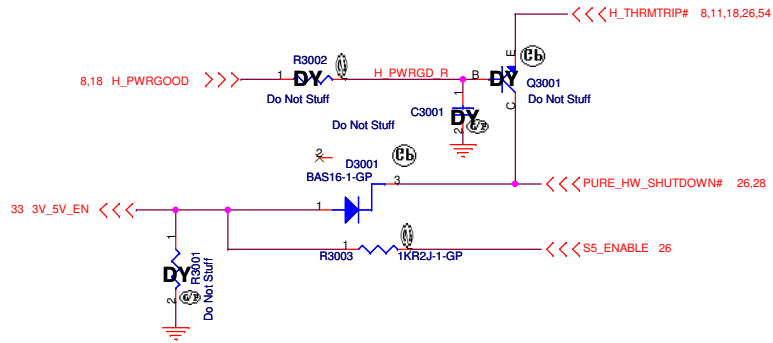
Document Number  
**Alba UMA**

Rev  
**-1**

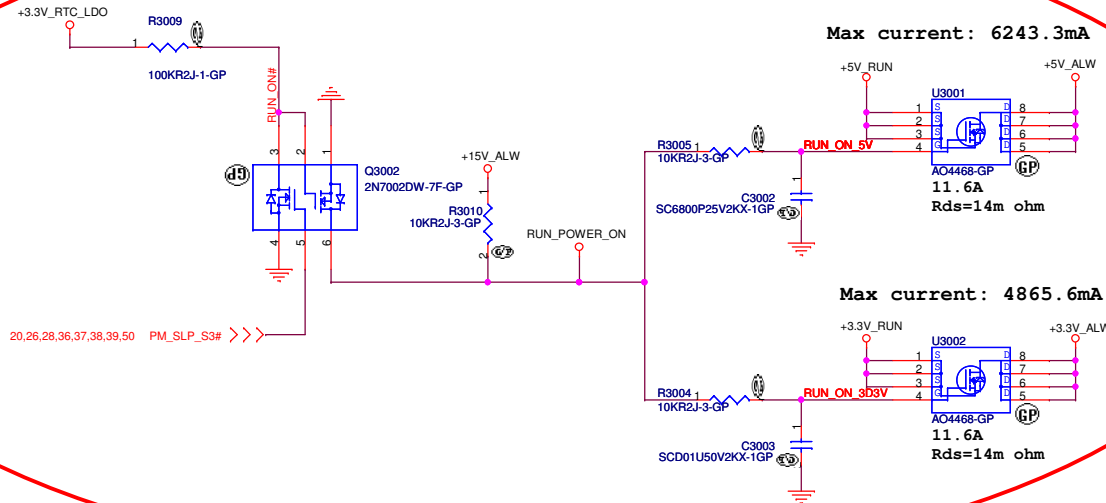
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SSID = Reset.Suspend



X01-1215



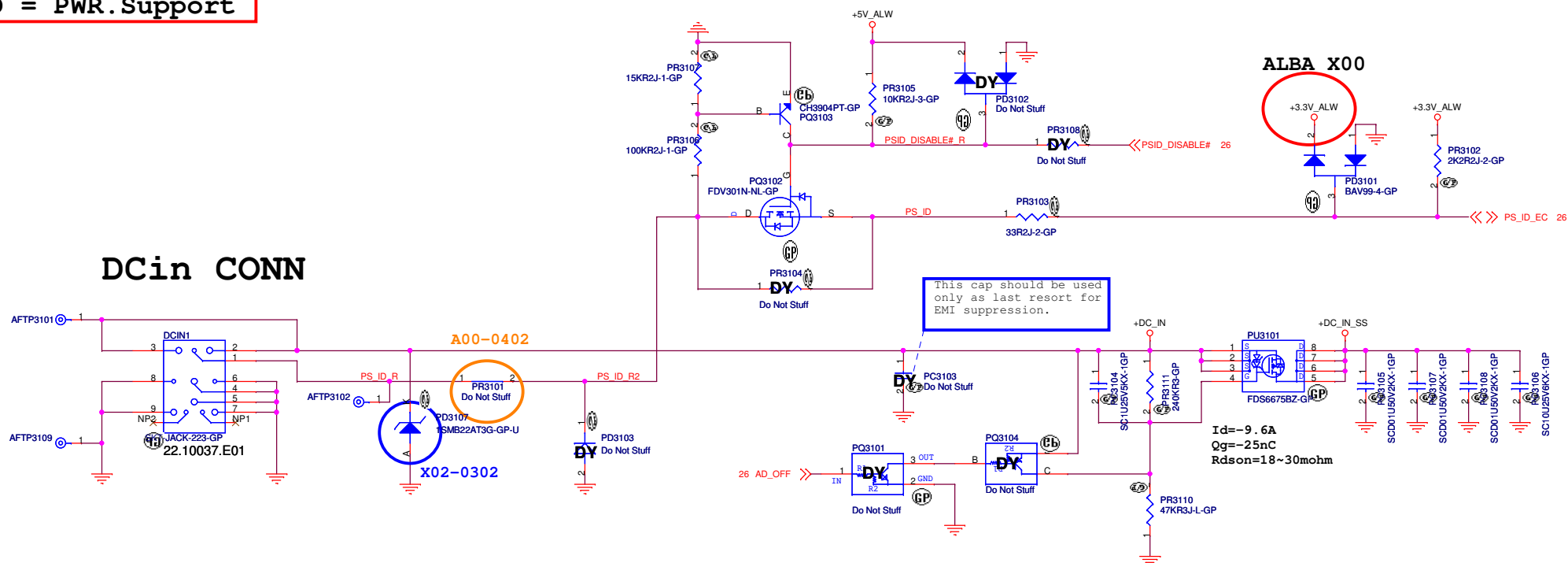
Alba UMA



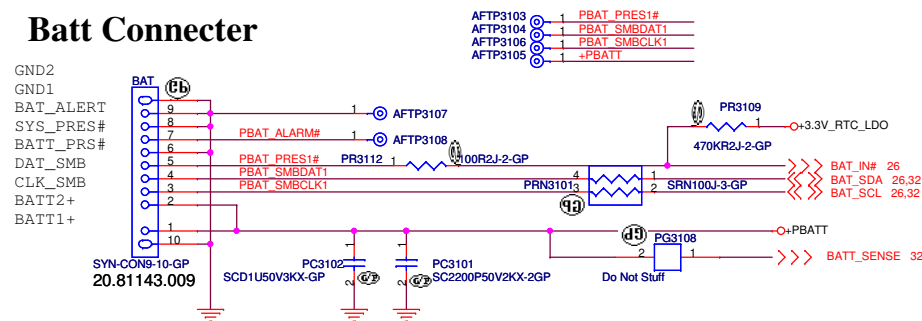
|                    |                        |       |          |
|--------------------|------------------------|-------|----------|
| Title              |                        |       |          |
| Power Plane Enable |                        |       |          |
| Size               | Document Number        | Rev   |          |
| Custom             | Alba UMA               | -1    |          |
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SSID = PWR.Support

## DCin CONN



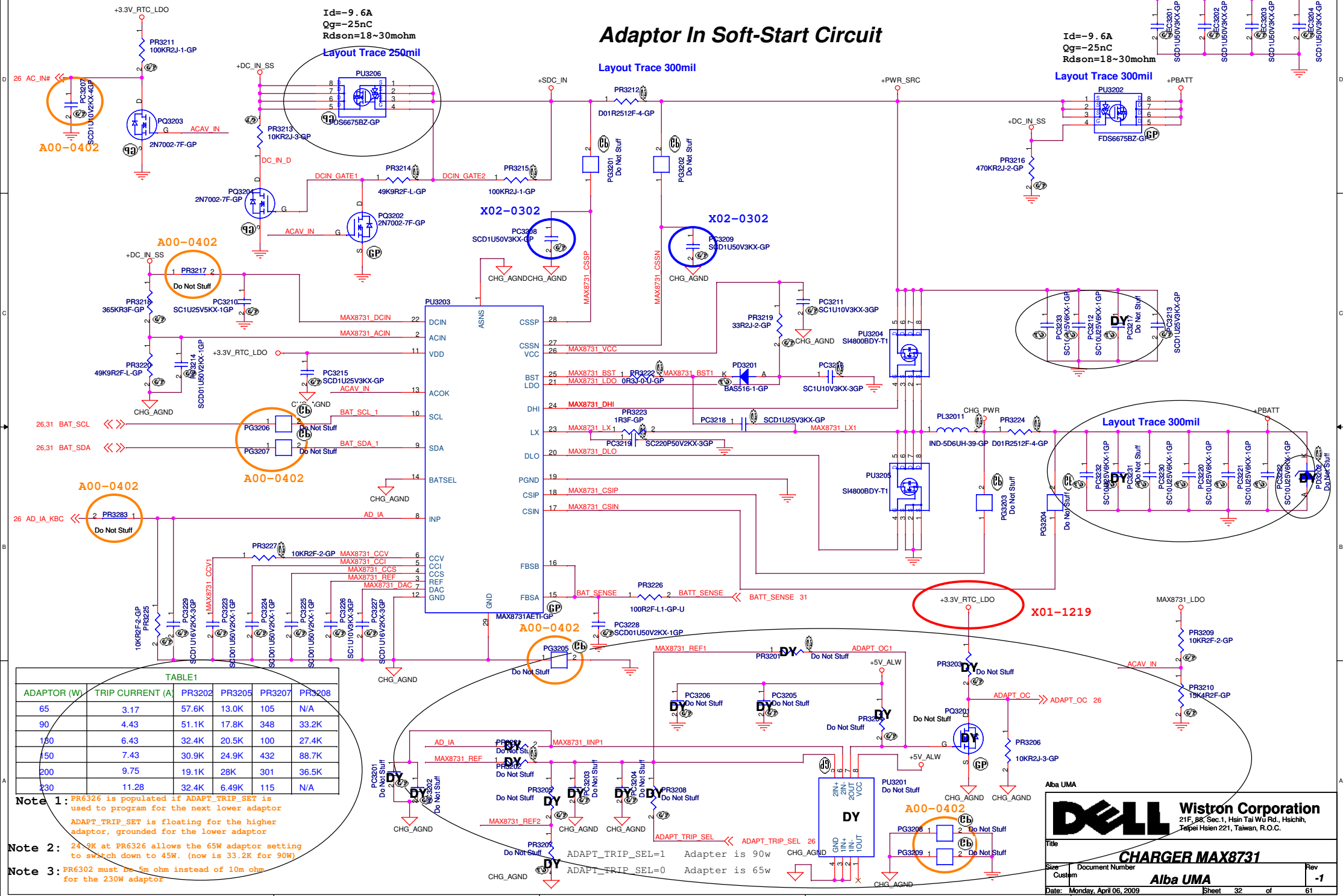
## Batt Connector

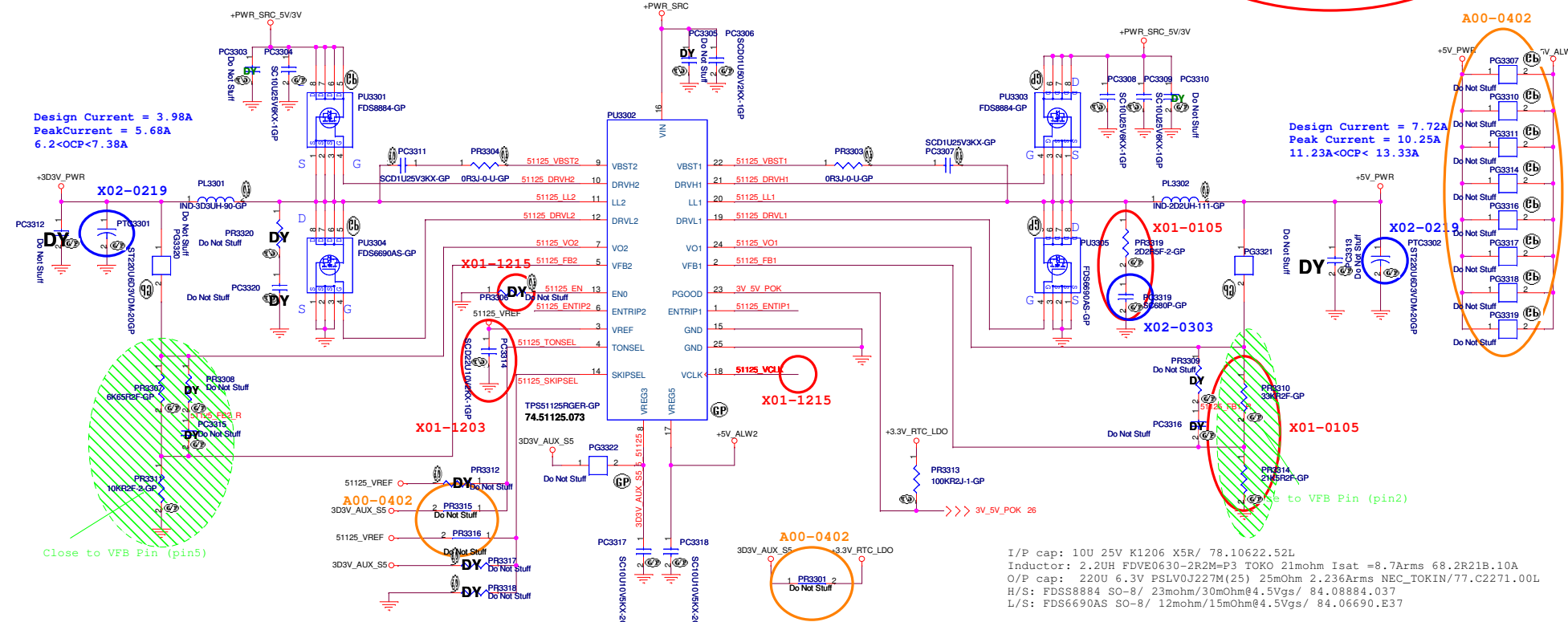
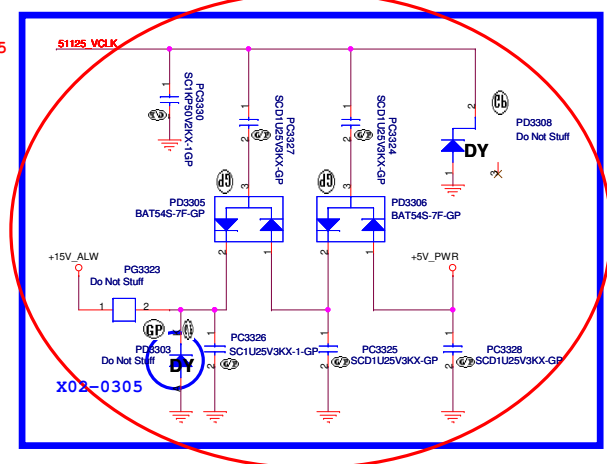
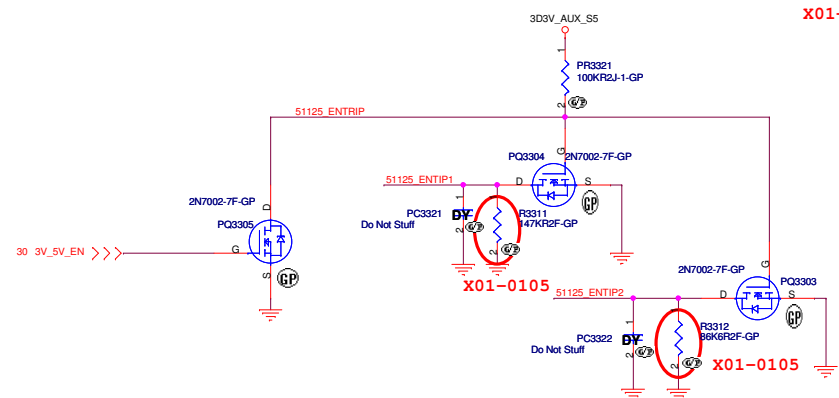
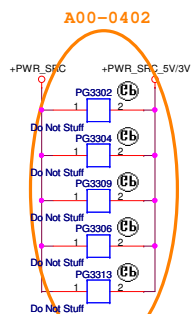


Alba UMA

# SSID = Charger

## Adaptor In Soft-Start Circuit





```
I/P cap: 10U 25V K1206 X5R/ 78.10622.52L
Inductor: 3.3UH FVDV030-3R3M=3P TOKO 31mohm Isat =6.9Arms 68.3R31A.10E
O/P cap: 220U 6.3V PSLV0J227M(25) 25mOhm 2.236Arms NEC_TOKIN/77.C2271
L/S: FDS8889A SO-8/ 23mohm/30mOhm@4.5Vgs/ 84.08884.037
L/S: FDS6690AS SO-8/ 12mohm/15mOhm@4.5Vgs/ 84.06690.E37
```

|     |        |        |        |                |                |           |          |
|-----|--------|--------|--------|----------------|----------------|-----------|----------|
| 000 | TONSEL | CH1    | CH2    | SKIPSEL        | VREG3 or VREG5 | VREF(2V)  | GND      |
|     | GND    | 200kHz | 265kHz | Operating Mode | OOA Auto Skip  | Auto Skip | PWM only |
|     | VREF   | 245kHz | 305kHz |                |                |           |          |
|     | VREG3  | 300kHz | 375kHz |                |                |           |          |
|     | VREG5  | 365kHz | 460kHz |                |                |           |          |

```
I/P cap: 10U 25V K1206 X5R/ 78.10622.52L
Inductor: 2.2UH FVDE0320-2R2M=P3 250 21mohm Isat =8.7Arms 68.2R21B.10A
O/P cap: 220U 6.3V PSLV03J27M7 (25) 20mOhm 2.236Arms NEC_TOKIN/77.C2271.00L
H/S: FDS58884 SO-8 / 23mohm/30mOhm@4.5Vgs/ 84.08884.037
L/S: FDS6690AS SO-8 / 12mohm/13mOhm@4.5Vgs/ 84.06690.E37
```

Alba UMA

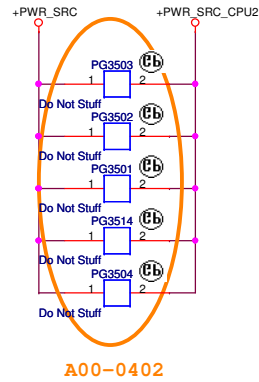
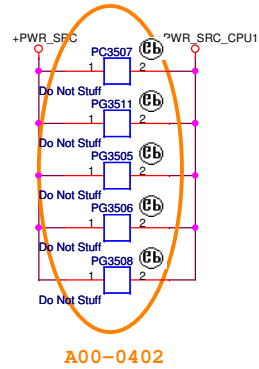
**緯創資通** **Wistron Corporation**  
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|       |                                |
|-------|--------------------------------|
| Title | <b>DCDC 5V/3D3V (TPS51125)</b> |
|-------|--------------------------------|

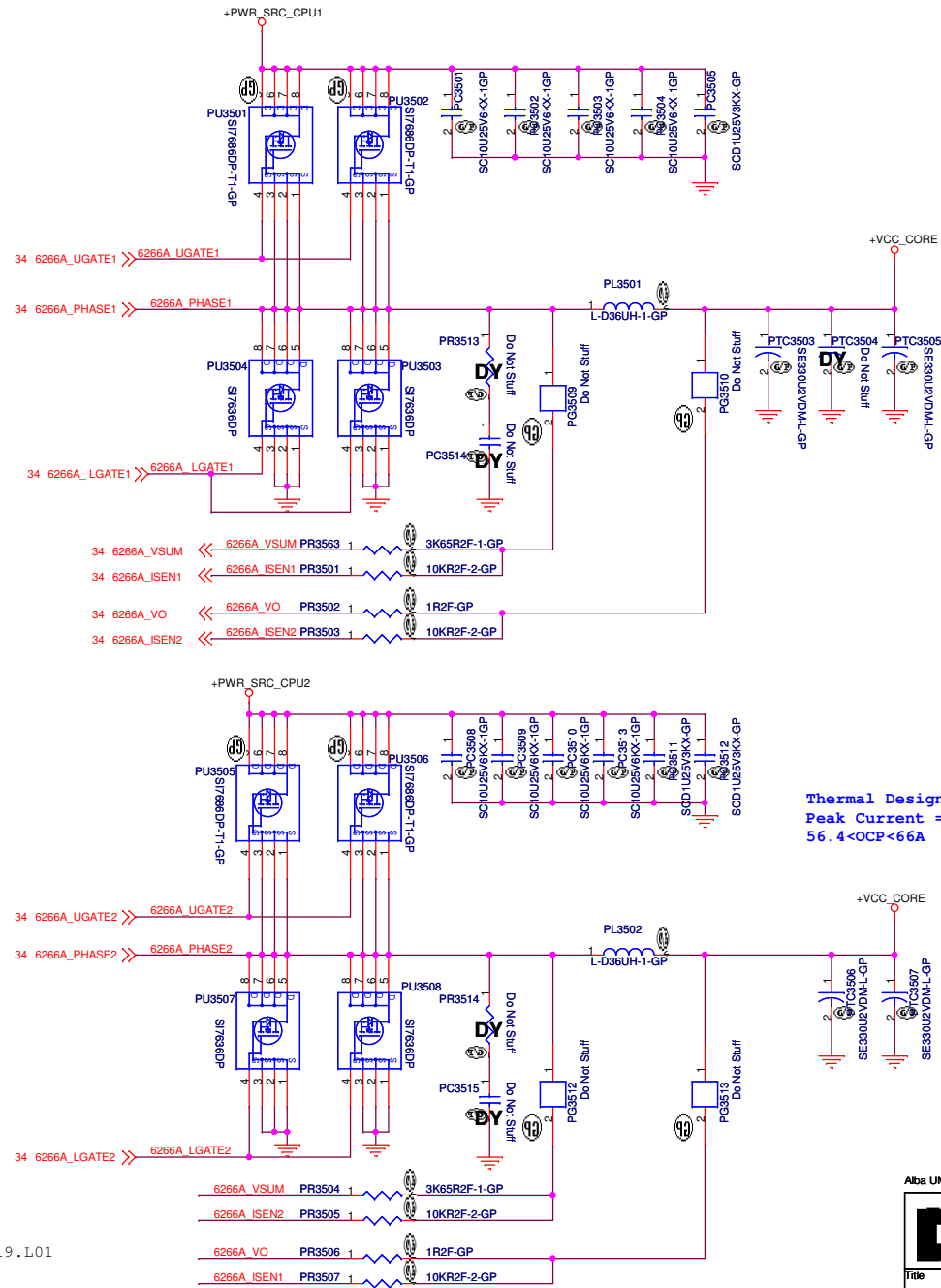
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|------------------------------|------------------------------------|------------------|
| Size<br>Custom               | Document Number<br><b>Alba UMA</b> | Rev<br><b>-1</b> |
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# SSID = CPU.Regulator

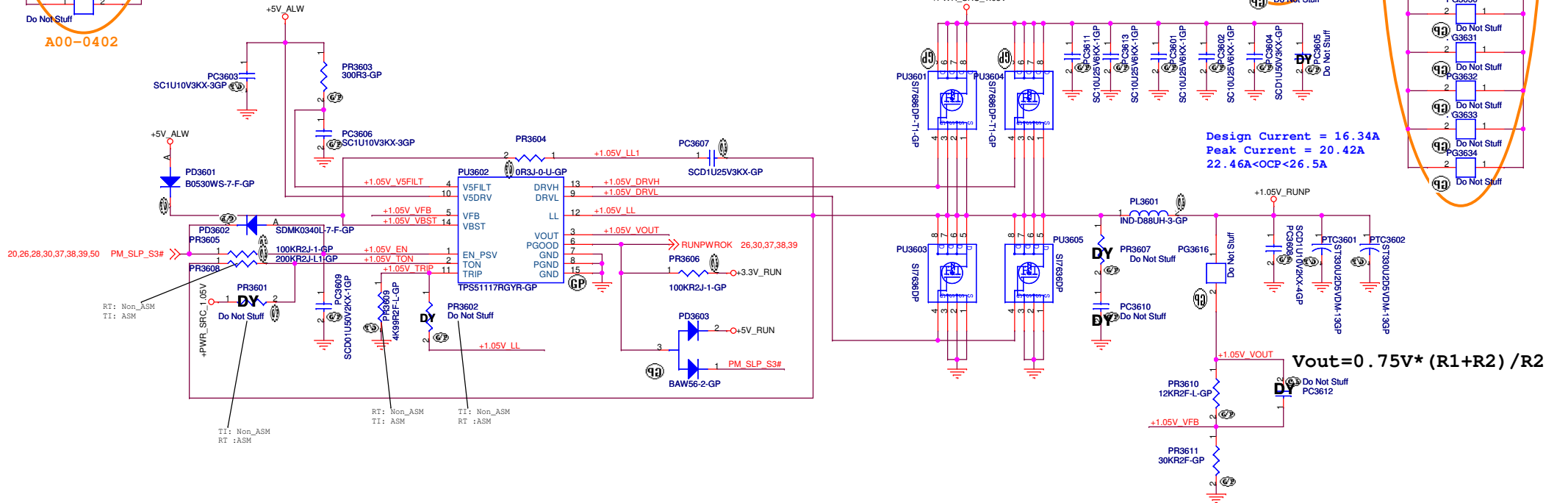
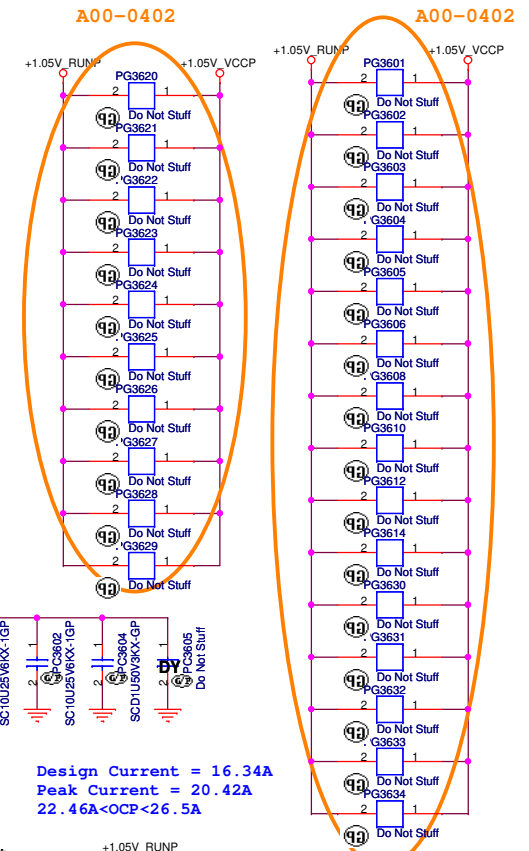
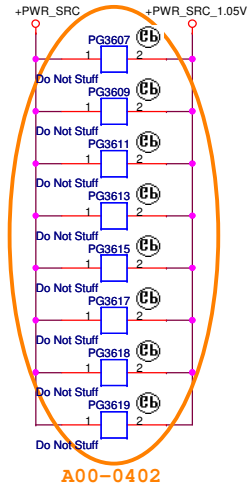


I/P cap: 10U 25V K1206 X5R/ 78.10622.52L  
 Inductor: 0.36UH ETQP4LR36WFC PANASONIC 1.1mohm  
 O/P cap: 330U 2V EEF5X0D331ER 9mOhm 3.0Arms Panasonic/79.33719.L01  
 H/S: SI7686DP/ POWERPAK-8/ 14mOhm/ 4.5Vgs/ 84.07686.037  
 L/S: SI7636ADP/ POWERPAK-8/ 4.8mOhm/ 4.5Vgs/ 84.07636.037



Thermal Design Current = 36A(IMVP6+ Rev:1.35 )  
 Peak Current = 47A  
 56.4<OCP<66A

SSID = PWR.Plane.Regulator\_1p05v



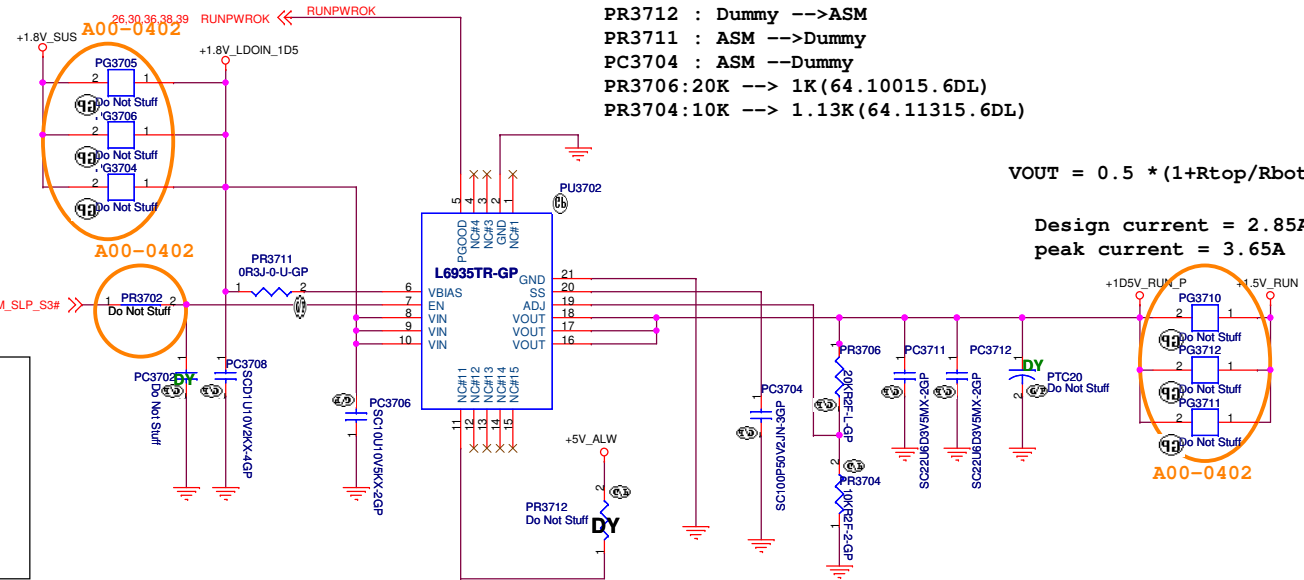
I/P cap: 10U 25V K1206 X5R/ 78.10622.52L  
Inductor: 0.88UH FDU1040D-R88M=P3 TOKO DCR:2.3mohm Isat =22.2Arms 68.R8810.10B  
O/P cap: 330U 2.5V PSLV0B337M(15) 15mOhm 2.886Arms NEC\_TOKIN/ 77.C3371.10L  
H/S: SI7686DP/ POWERPAK-8/ 14mOhm/ 4.5Vgs/ 84.07686.037  
L/S: SI7636ADP/ POWERPAK-8/ 4.8mOhm/ 4.5Vgs/ 84.07636.037  
Switching freq-->350KHz

SSID = PWR.Plane.Regulator\_1p5v/1p1v

| Vendor | PIN6  | PIN11 | PIN20 |
|--------|-------|-------|-------|
| L6935  | VBIAS | N.C.  | SS    |
| RTXX35 | N.C.  | VBIAS | N.C.  |

| Vendor | PR3712 | PR3711 | PR3706 | PR3704 |
|--------|--------|--------|--------|--------|
| L6935  | DY     | ASM    | 20K    | 10K    |
| RTXX35 | ASM    | DY     | 1K     | 1.13K  |
|        |        |        | 1.5V   |        |

20,26,28,30,36,38,39,50 PM\_SLP\_S3# >>



2nd Source BOM Control:

PR3712 : Dummy -->ASM  
 PR3711 : ASM -->Dummy  
 PC3704 : ASM -->Dummy  
 PR3706:20K --> 1K(64.10015.6DL)  
 PR3704:10K --> 1.13K(64.11315.6DL)

$$V_{OUT} = 0.5 * (1 + R_{top}/R_{bot})$$

Design current = 2.85A  
 peak current = 3.65A

Alba UMA

|        |                        |                                                                                                             |          |
|--------|------------------------|-------------------------------------------------------------------------------------------------------------|----------|
|        |                        | <b>Wistron Corporation</b><br>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,<br>Taipei Hsien 221, Taiwan, R.O.C. |          |
|        |                        | Title<br><b>DC to DC L6935 1.5V / L6935 1.1V</b>                                                            |          |
| Size   | Document Number        | Rev                                                                                                         |          |
| Custom |                        | Alba UMA                                                                                                    |          |
| Date:  | Monday, April 06, 2009 | Sheet                                                                                                       | 37 of 61 |



SSID = PWR.Plane.Regulator\_gfx

Altair Design

|                                                                                       |                                    |                                                                                                              |                  |
|---------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------|
|  |                                    | <b>Wistron Corporation</b><br>21F, 88, Sec. 1, Hsin Tai Wu Rd., Hsichih,<br>Taipei Hsien 221, Taiwan, R.O.C. |                  |
| Title <b>VGA_CORE</b>                                                                 |                                    |                                                                                                              |                  |
| Size<br>A3                                                                            | Document Number<br><b>Alba UMA</b> |                                                                                                              | Rev<br><b>-1</b> |
| Date: Monday, April 06, 2009                                                          | Sheet 39                           | of 61                                                                                                        |                  |

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Taipei Hsien 221, Taiwan, R.O.C.

Title

**(Reserve)**

Size  
Custom

Document Number  
**Alba UMA**

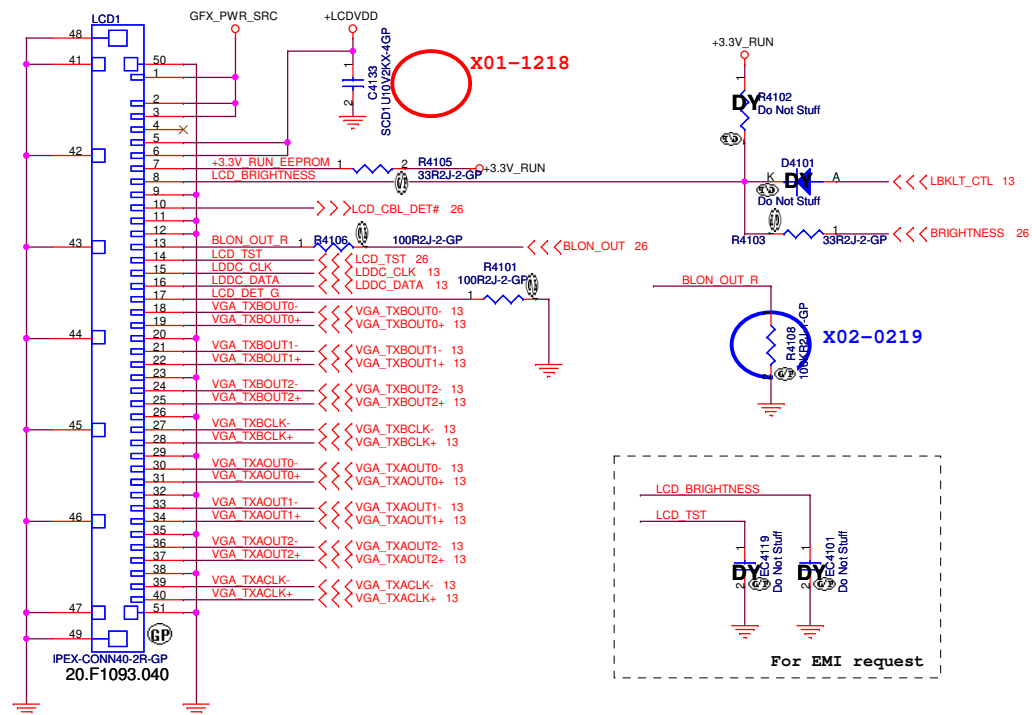
Rev  
**-1**

Date: Monday, April 06, 2009

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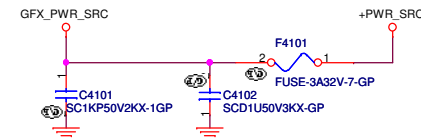
SSID = VIDEO

## LVDS CONNECTOR

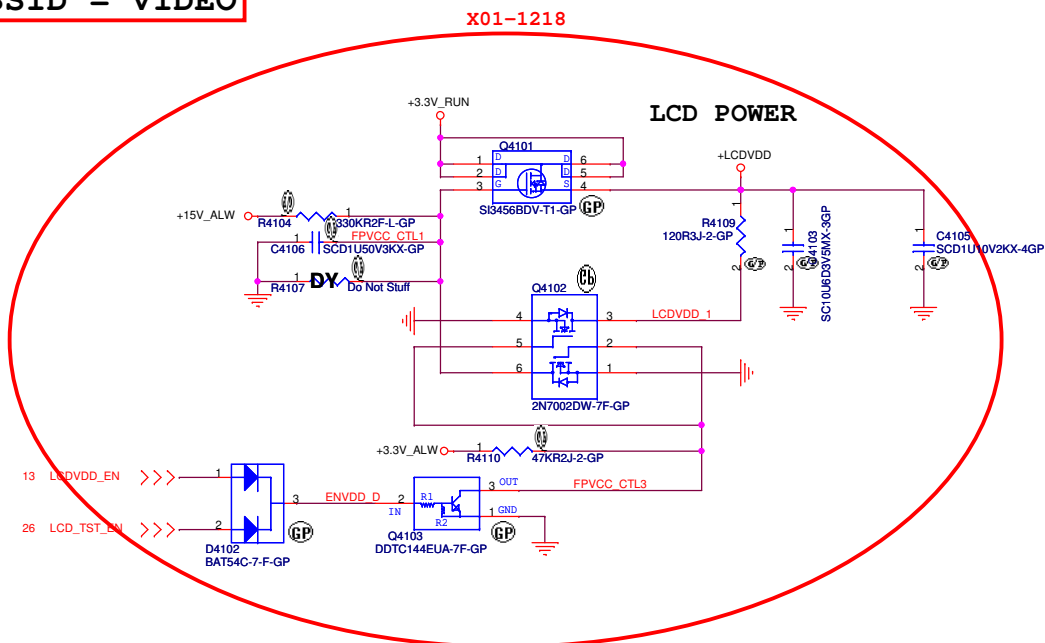


SSID = Inverter

## INVERTER POWER



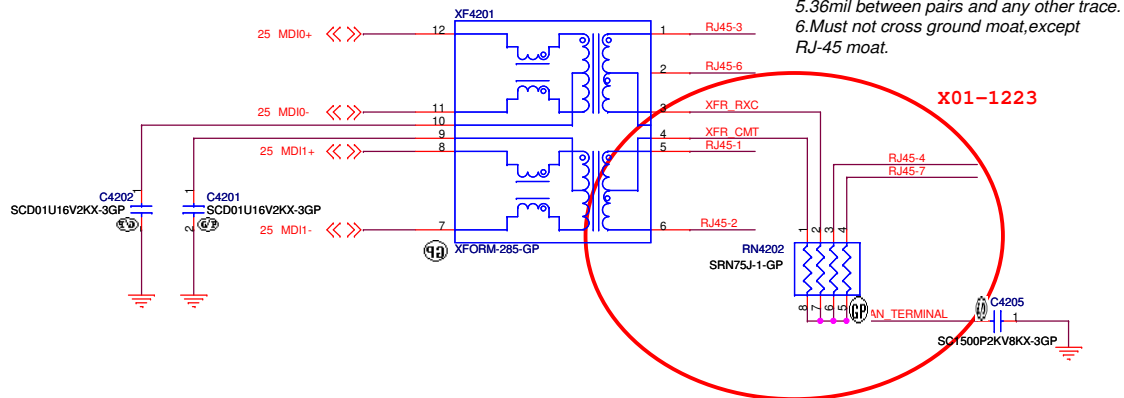
SSID = VIDEO



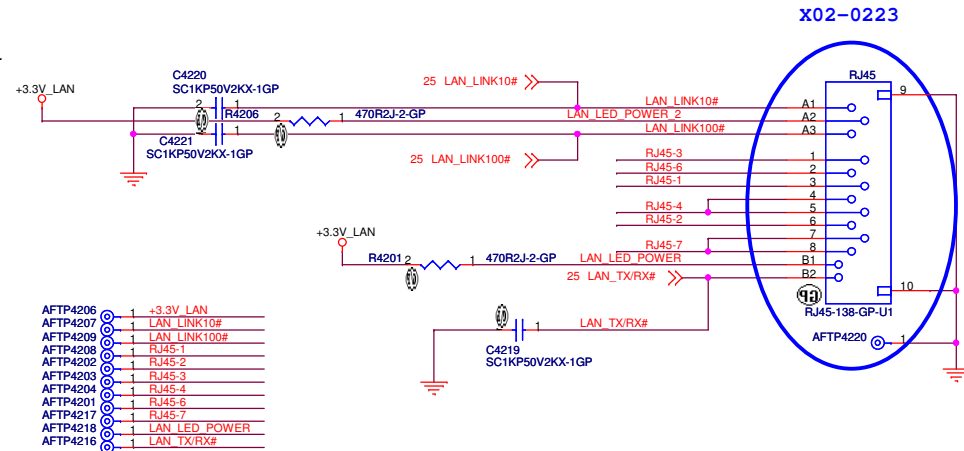
Alba UMA

## SSID = LOM

### 10/100M Lan Transformer



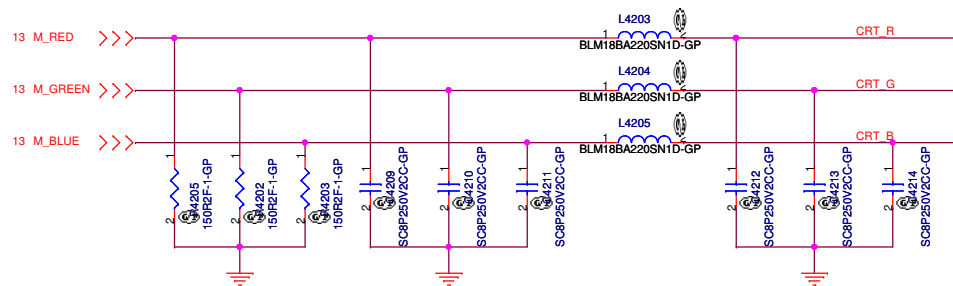
## RJ45 Connector



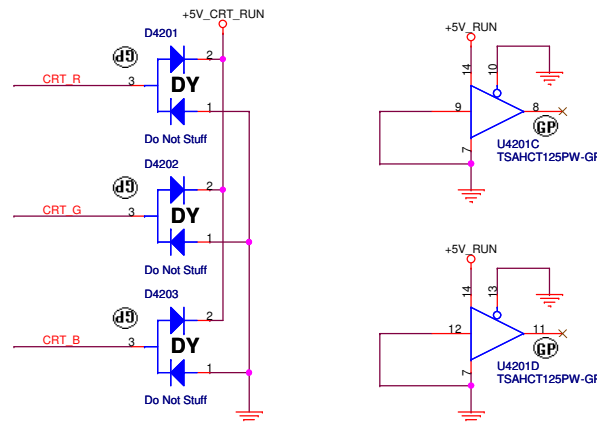
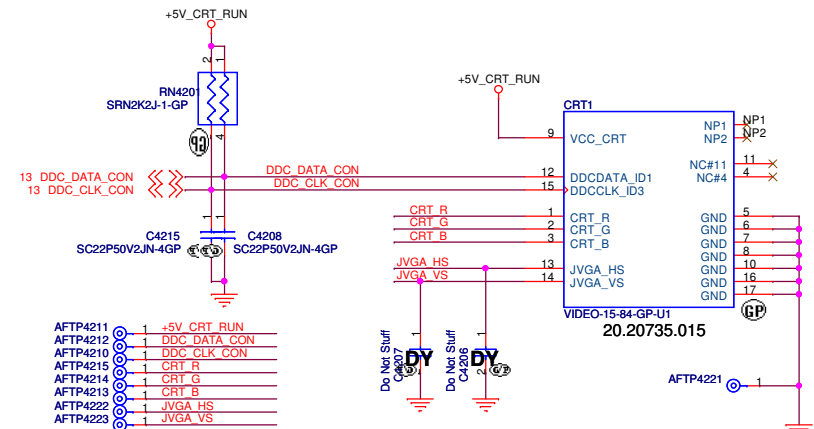
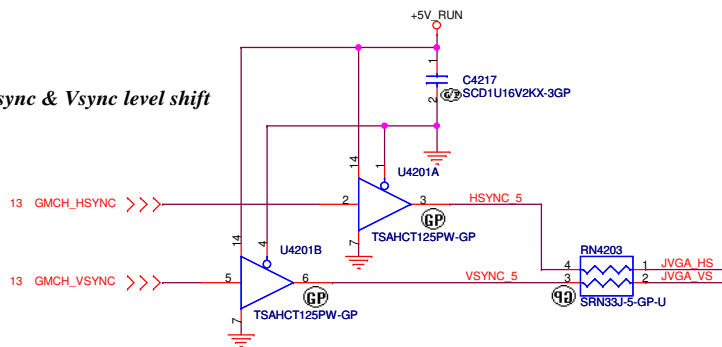
## SSID = VIDEO

Layout Note:

- \*Pi-filter & 150 Ohm pull-down resistors should be as close as to CRT CONN.
- \* RGB signal will hit 75 Ohm first, then pi-filter, finally CRT CONN.

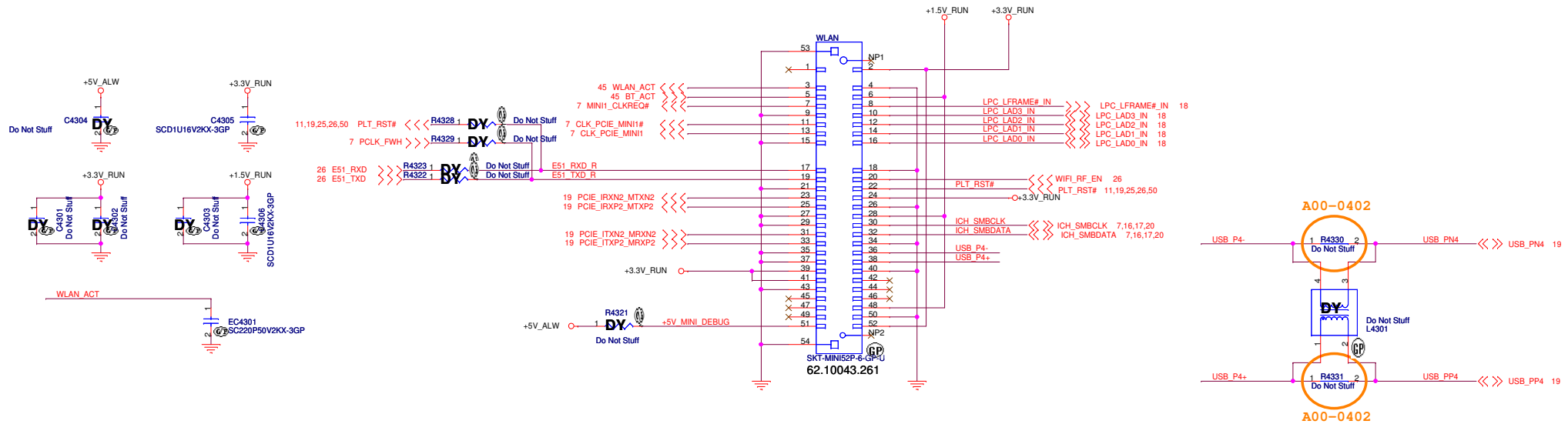


### Hsync & Vsync level shift



SSID = Wireless

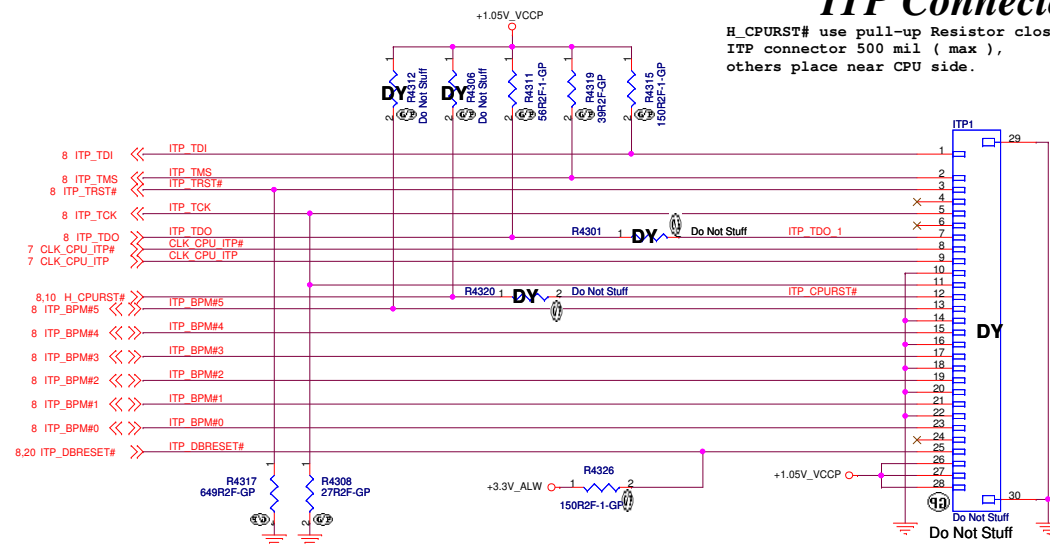
## Mini Card Connector(802.11a/b/g/n)



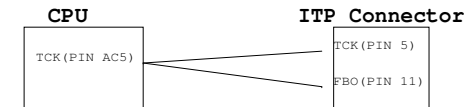
SSID = User.Interface

## ITP Connector

H\_CPURST# use pull-up Resistor close  
ITP connector 500 mil ( max ),  
others place near CPU side.



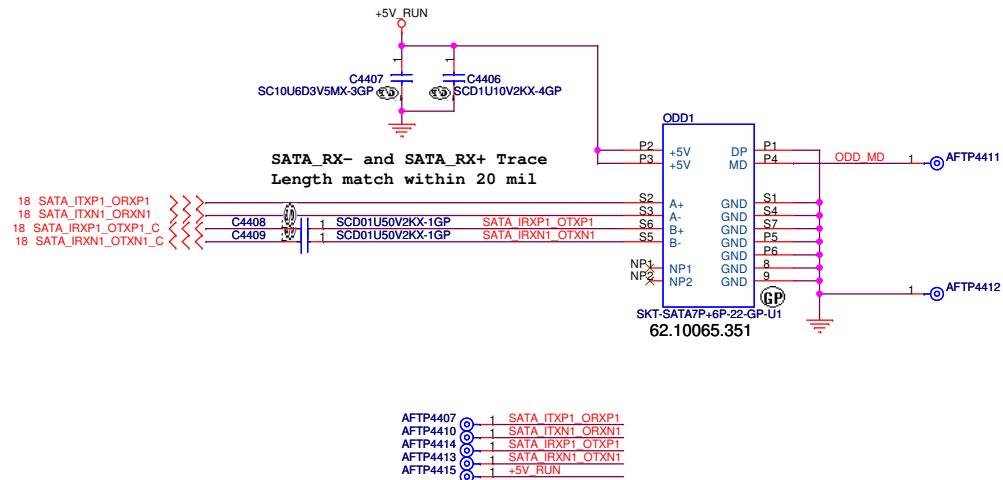
+1.05V\_VCCP use Decoupling Capacitor close  
ITP connector 100 mil ( max )



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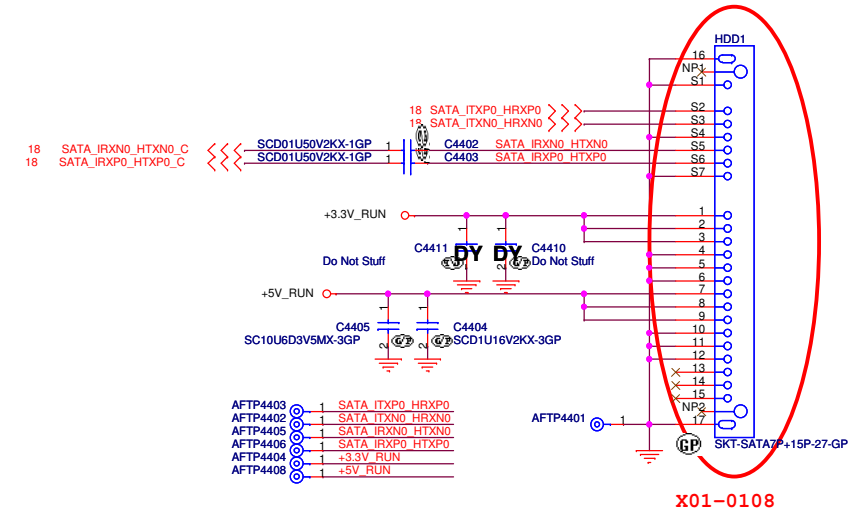
SSID = SATA

## ODD Connector



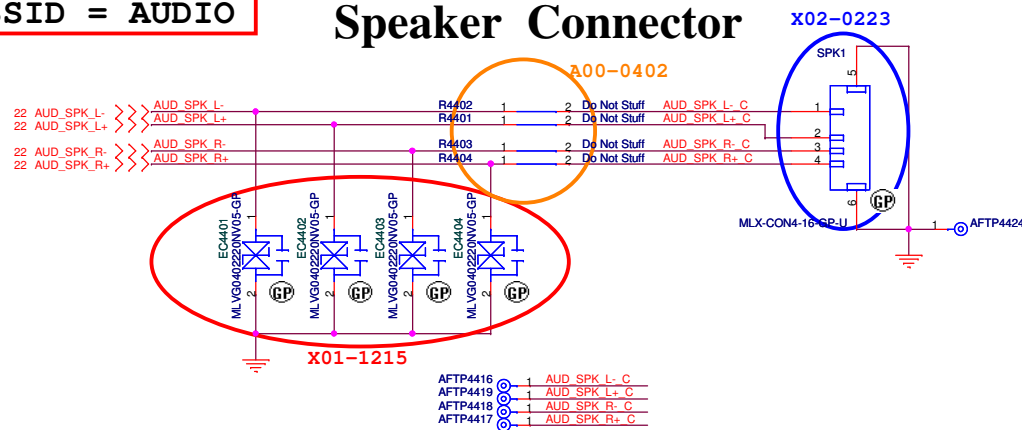
SSID = SATA

## SATA HDD Connector



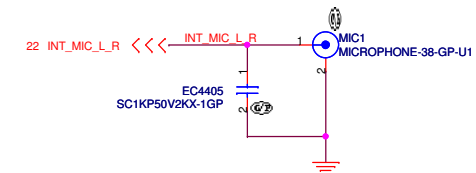
SSID = AUDIO

## Speaker Connector



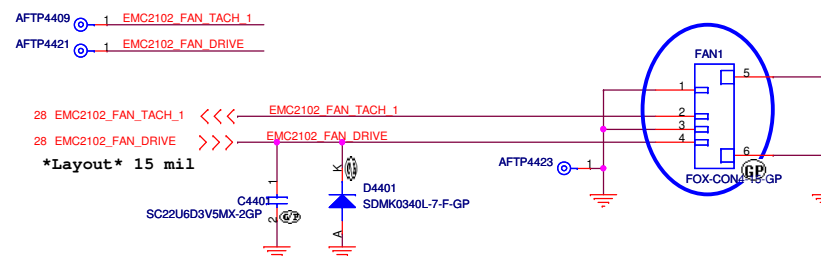
SSID = AUDIO

## Internal MIC



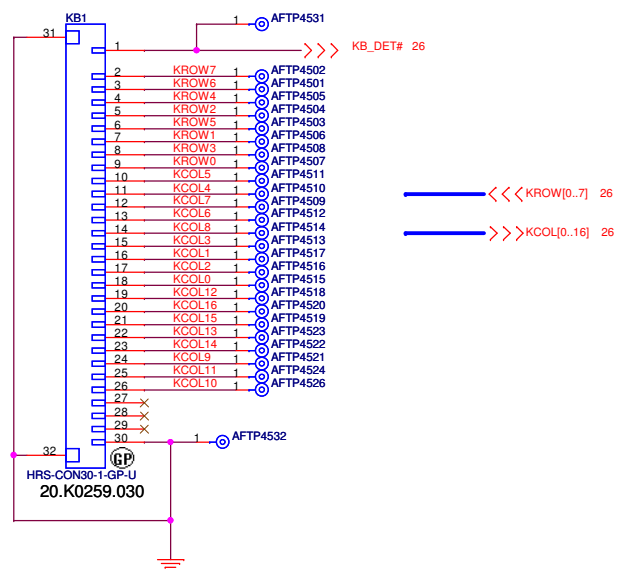
SSID = Thermal

## Fan Connector



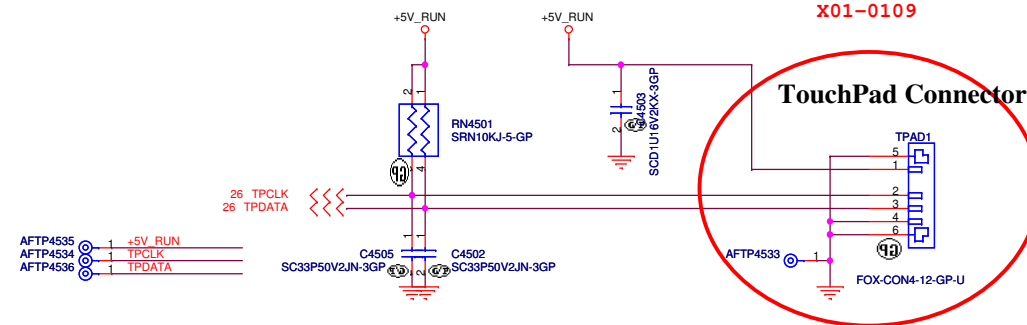
Alba UMA

## Internal KeyBoard Connector



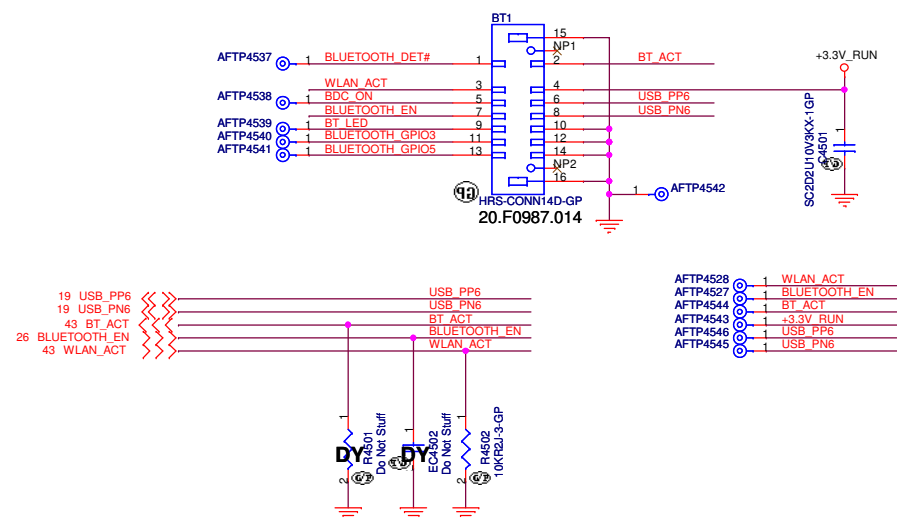
X01-0109

## TouchPad Connector



```
SSID = User.Interface
```

Bluetooth Module conn.



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Title

### KeyBoard/TouchPad/BT

|        |  |
|--------|--|
| Size   |  |
| Custom |  |

Document Number

**Alba UMA**

|     |  |
|-----|--|
| Rev |  |
|-----|--|

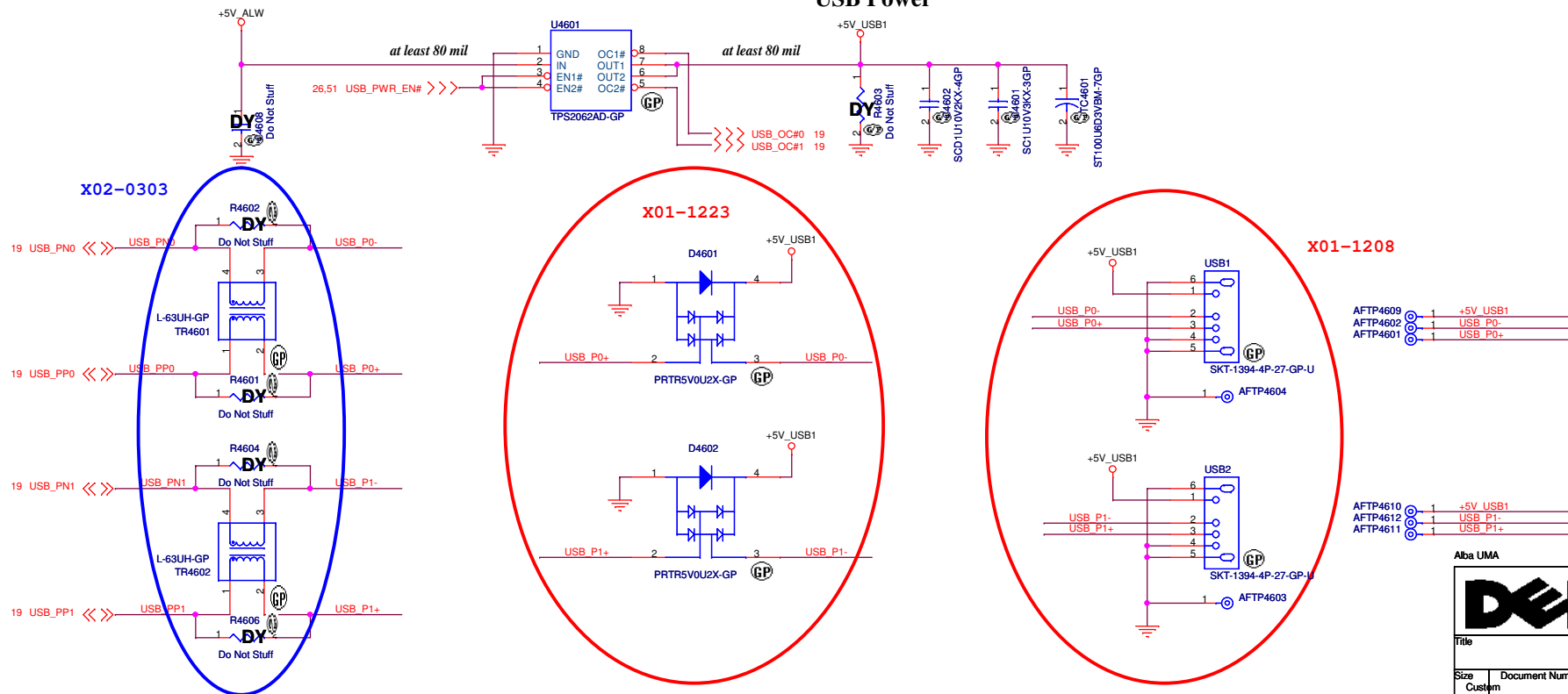
Date: Monday, April 06, 2009

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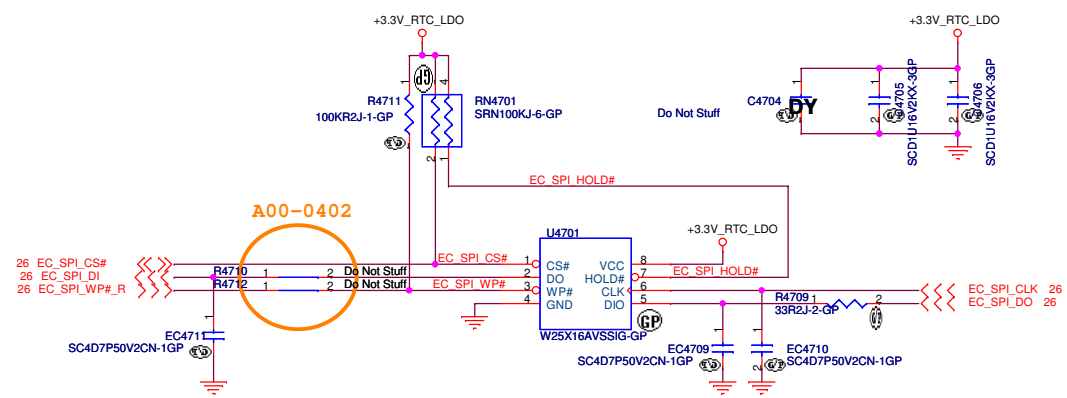
SSID = Modem

X01-1204

## USB Power

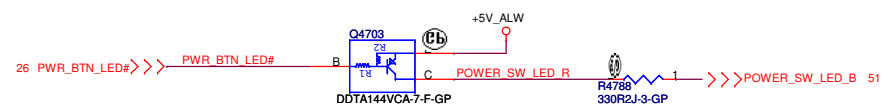


**SPI FLASH ROM (16M bits)**

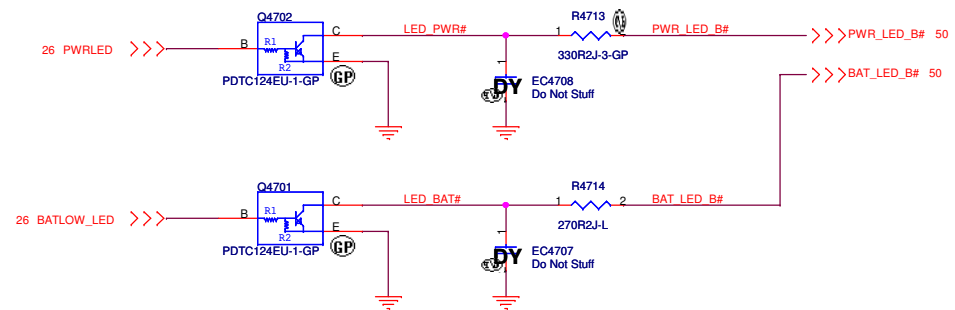


```
SSID = User.Interface
```

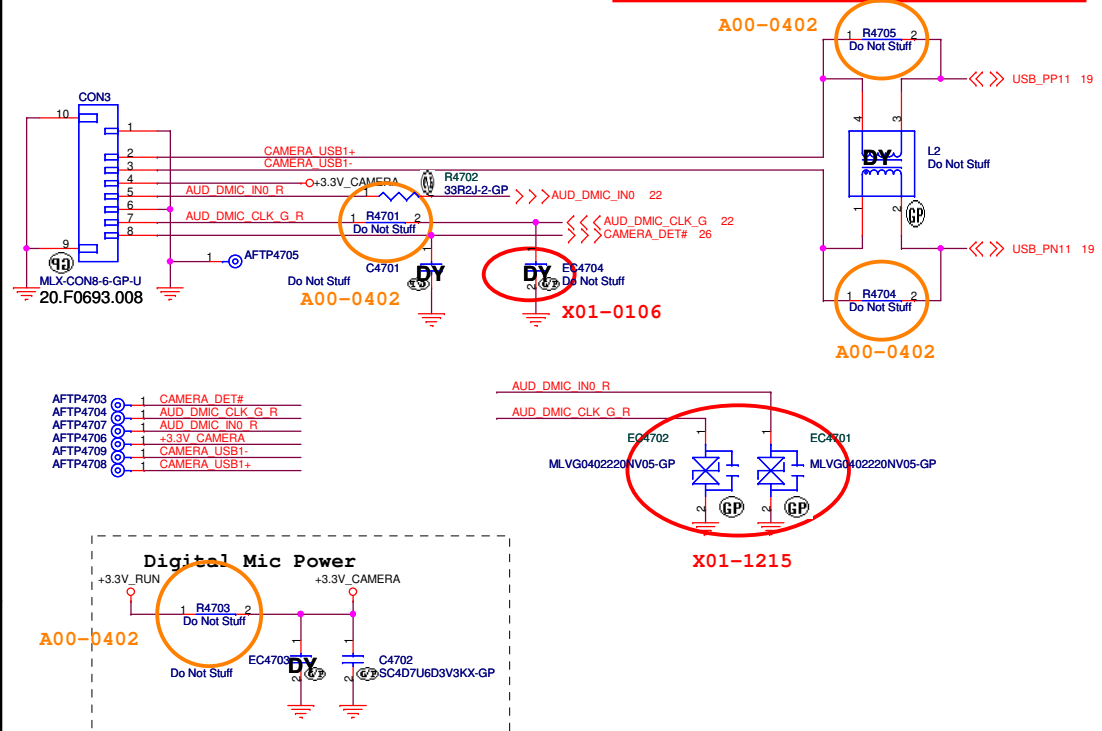
## Power Button LED



## Power/Battery LED

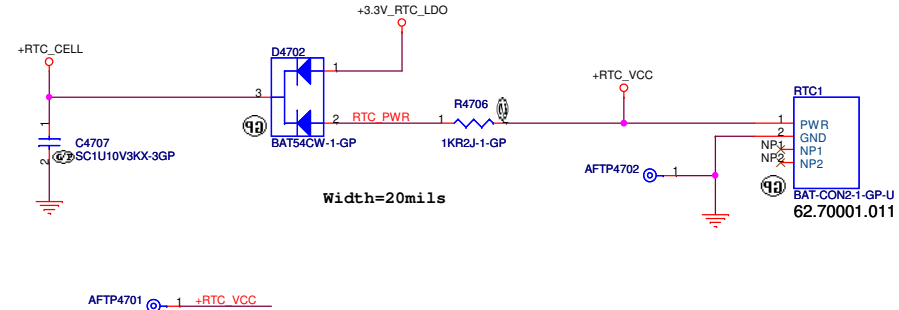


## Camera Connector



**SSID = RBATT**

## RTC Connector



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|                                                                                       |                        |                                                                                                             |                |
|---------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------|----------------|
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| Title                                                                                 |                        |                                                                                                             |                |
| <b>(Reserve)</b>                                                                      |                        |                                                                                                             |                |
| Size                                                                                  | Document Number        |                                                                                                             | Rev            |
| Custom                                                                                | <b>Alba UMA</b>        |                                                                                                             | <b>-1</b>      |
| Date:                                                                                 | Monday, April 06, 2009 |                                                                                                             | Sheet 48 of 61 |

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Alba UMA



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Taipei Hsien 221, Taiwan, R.O.C.

Title

Size

Document Number

Rev

Custom

**Alba UMA**

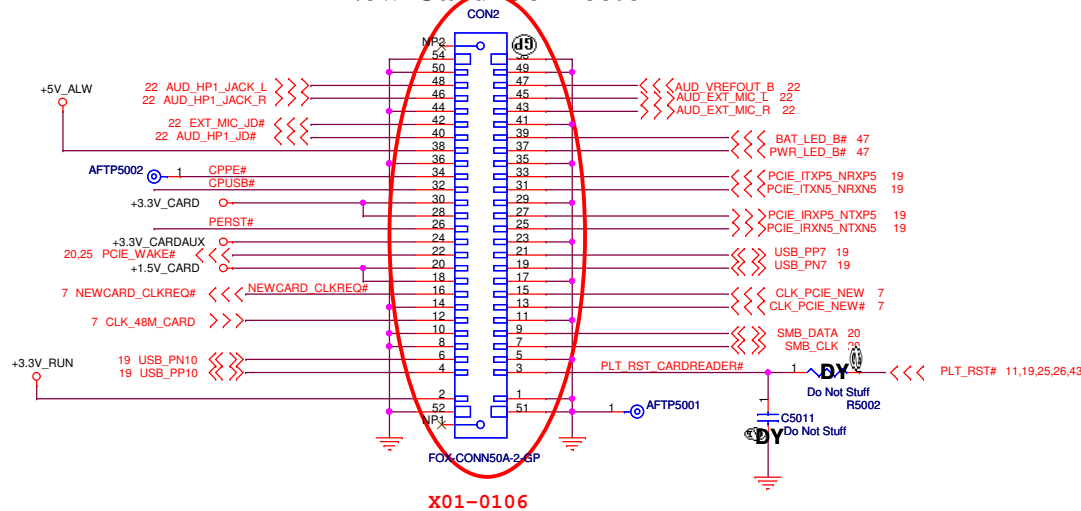
**-1**

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SSID = ExpressCard

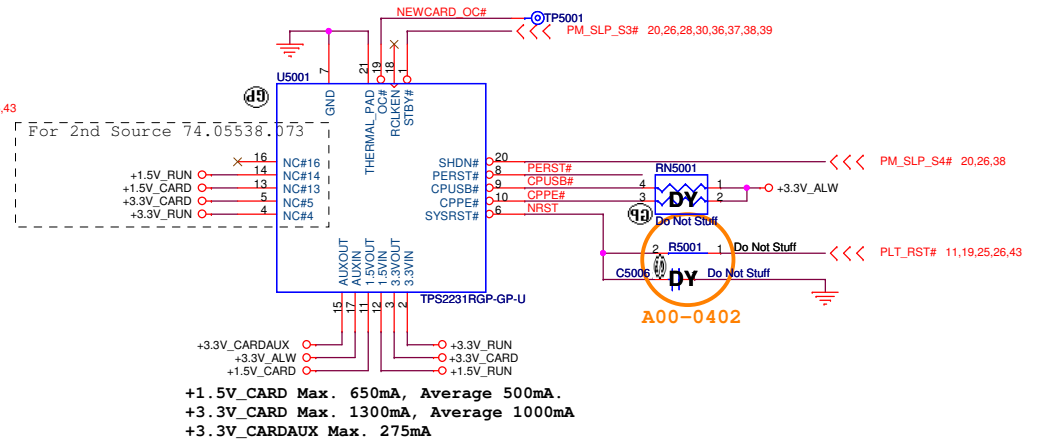
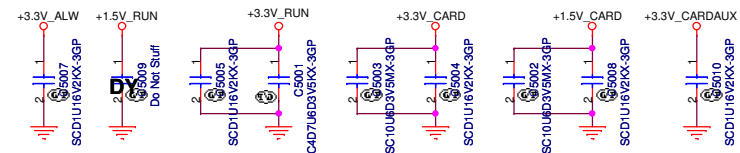
## New Card Connector



X01-0106

|          |   |                     |
|----------|---|---------------------|
| AFTP5029 | 1 | PWR_LED_B#          |
| AFTP5032 | 1 | BAT_LED_B#          |
| AFTP5031 | 1 | +5V_ALW             |
| AFTP5030 | 1 | PLT_RST_CARDREADER# |
| AFTP5020 | 1 | PCIE_ITXP5_NRXPS    |
| AFTP5025 | 1 | PCIE_ITXNS_NRXNS    |
| AFTP5021 | 1 | PCIE_IRXP5_NTXPS    |
| AFTP5024 | 1 | PCIE_IRXNS_NTXNS    |
| AFTP5026 | 1 | AUD_VREFOUT_B       |
| AFTP5004 | 1 | AUD_HP1_JACK_L      |
| AFTP5006 | 1 | AUD_HP1_JACK_R      |
| AFTP5007 | 1 | +3.3V_RUN           |
| AFTP5008 | 1 | CPUSB#              |
| AFTP5005 | 1 | USB_PP7             |
| AFTP5008 | 1 | USB_PN7             |
| AFTP5011 | 1 | AUD_EXT_MIC_L       |
| AFTP5010 | 1 | AUD_EXT_MIC_R       |
| AFTP5011 | 1 | EXT_MIC_JD#         |
| AFTP5013 | 1 | AUD_HP1_JD#         |
| AFTP5014 | 1 | CLK_48M_CARD        |
| AFTP5012 | 1 | NEWCARD_CLKREQ#     |
| AFTP5018 | 1 | +3.3V_CARD          |
| AFTP5015 | 1 | PERST#              |
| AFTP5022 | 1 | +3.3V_CARDAUX       |
| AFTP5021 | 1 | PCIE_WAKE#          |
| AFTP5016 | 1 | +1.5V_CARD          |
| AFTP5018 | 1 | SMB_DATA            |
| AFTP5003 | 1 | SMB_CLK             |
| AFTP5021 | 1 | USB_PN10            |
| AFTP5028 | 1 | USB_PP10            |

Lay out close to Chip

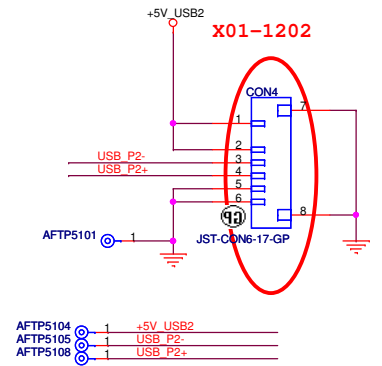
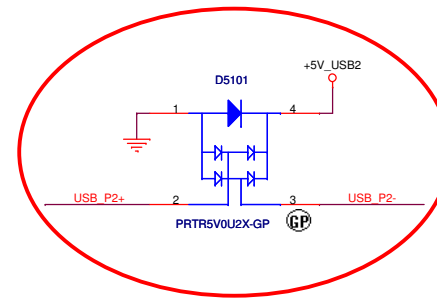
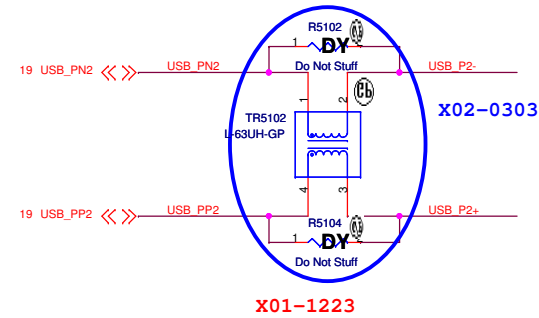
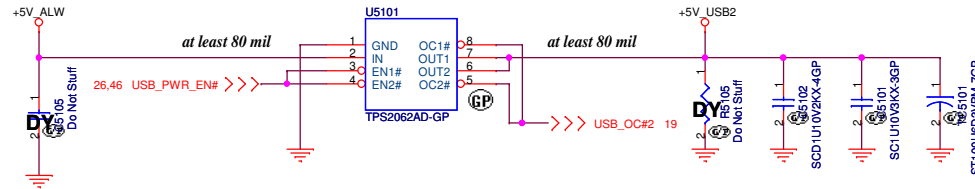


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|                                                                            |                 |                            |          |
|----------------------------------------------------------------------------|-----------------|----------------------------|----------|
| <b>DELL</b>                                                                |                 | <b>Wistron Corporation</b> |          |
| 21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih, Taipei Hsien 221, Taiwan, R.O.C. |                 |                            |          |
| Title                                                                      |                 |                            |          |
| <b>Express Card Board CONN</b>                                             |                 |                            |          |
| Size                                                                       | Document Number | Rev                        |          |
| Custom                                                                     |                 | <b>-1</b>                  |          |
| Date: Monday, April 06, 2009                                               |                 | Sheet                      | 50 of 61 |

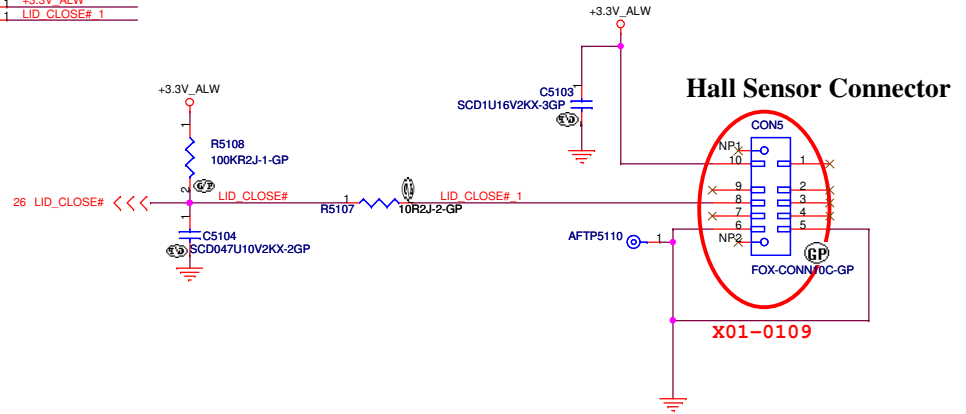
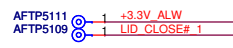
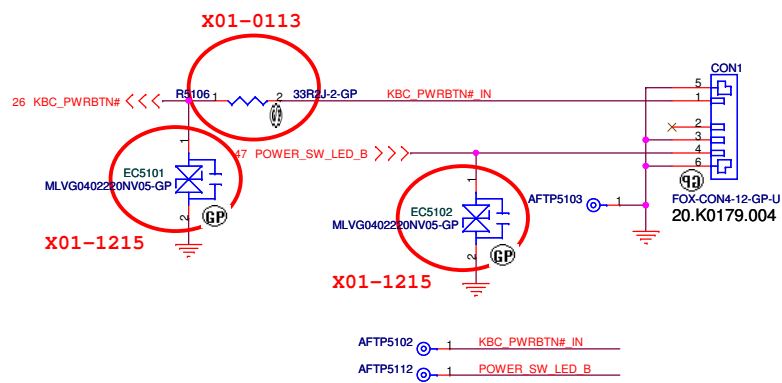
SSID = USB

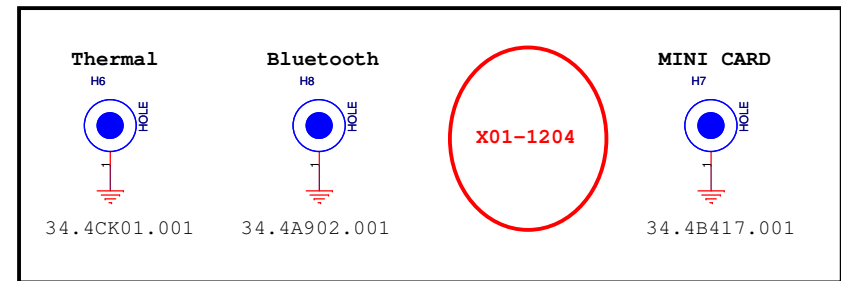
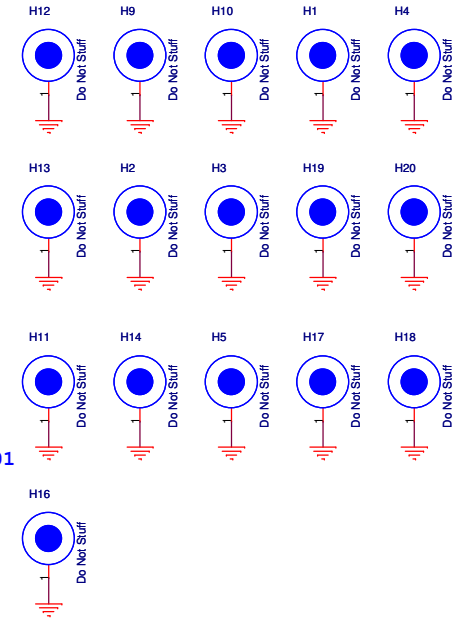
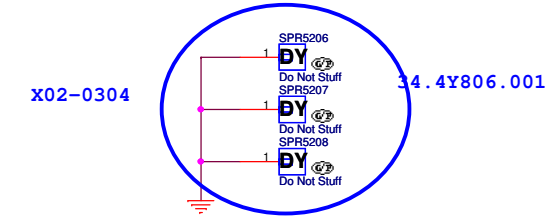
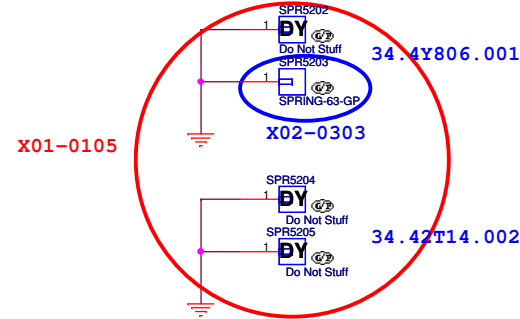
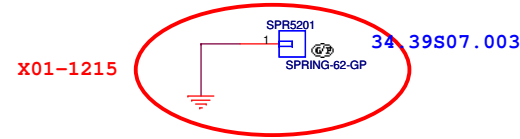
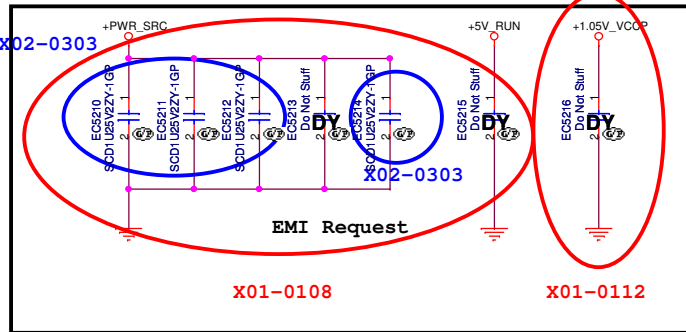
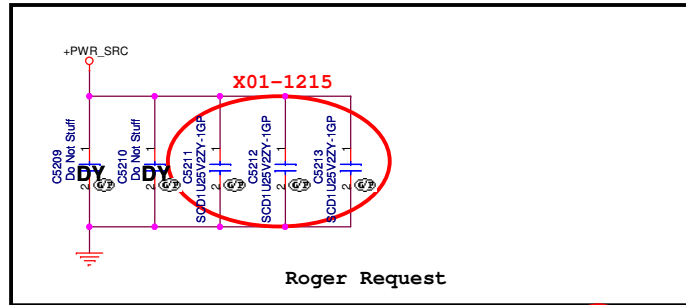
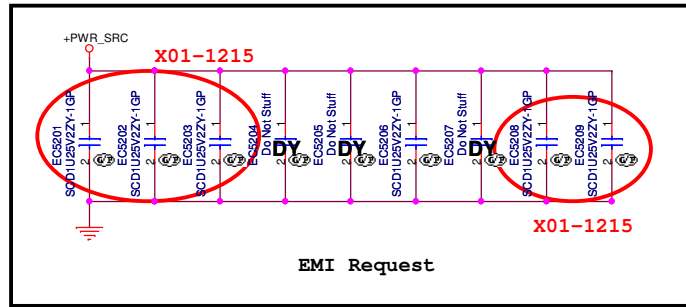
## USB Power



SSID = User.Interface

## Power Button Board CONN





SSID = VIDEO

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Taipei Hsien 221, Taiwan, R.O.C.

Title

Size

Custom

Document Number

Rev

**VGA-PCIE/LVDS(1/4)**

**Alba UMA**

**-1**

Date: Monday, April 06, 2009

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SSID = VIDEO

Aba UMA

|                                                                                       |                                    |                                                                                                             |                  |
|---------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------|
|  |                                    | <b>Wistron Corporation</b><br>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,<br>Taipei Hsien 221, Taiwan, R.O.C. |                  |
| Title <b>VGA-TV/CRT/DP PORT</b>                                                       |                                    |                                                                                                             |                  |
| Size<br>C                                                                             | Document Number<br><b>Aiba UMA</b> |                                                                                                             | Rev<br><b>-1</b> |
| Date: Monday, April 06, 2009                                                          |                                    |                                                                                                             |                  |
| Sheet 54                                                                              |                                    | of 61                                                                                                       |                  |

SSID = VIDEO

SSID = VIDEO

SSID = VIDEO

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|                                                                                       |                        |                                                                                                             |                |
|---------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------|----------------|
|  |                        | <b>Wistron Corporation</b><br>21F, 88, Sec.1, Hsin Tai Wu Rd., Hsichih,<br>Taipei Hsien 221, Taiwan, R.O.C. |                |
| Title                                                                                 |                        |                                                                                                             |                |
| VRAM                                                                                  |                        |                                                                                                             |                |
| Size                                                                                  | Document Number        |                                                                                                             | Rev            |
| Custom                                                                                | Alba UMA               |                                                                                                             | -1             |
| Date:                                                                                 | Monday, April 06, 2009 |                                                                                                             | Sheet 57 of 61 |

| Item          | Page#         | Date                  | Request By         | Issue description                            | Solution Description                                                      | Rev.           |
|---------------|---------------|-----------------------|--------------------|----------------------------------------------|---------------------------------------------------------------------------|----------------|
| 1             | 20,26         | 2008/11/03            | Wistron            | UMA no need.                                 | ICH gpio6 NC,KBC gpio45 NC,Remove R2030,R2635                             | X01            |
| 2             | 34            | 2008/11/19            | Wistron            | LoadLine is too low.                         | Change PR3431 to 3.48K ohm.                                               | X01            |
| 3             | 25            | 2008/11/25            | Realtek            | Prevent for capacitance effect.              | Change R2506 to 1K ohm.                                                   | X01            |
| <del>4</del>  | <del>22</del> | <del>2008/11/27</del> | <del>IDT</del>     | <del>PC beep issue.</del>                    | <del>Change R2203,R2206 to 10K ohm. Add R2218,R2219.</del>                | <del>X01</del> |
| 5             | 26            | 2008/11/27            | Wistron            | MB version changed.                          | Change R2609 pop,R2608 dummy.                                             | X01            |
| 6             | 15            | 2008/11/27            | Wistron            | Reserve +3.3V_RUN trace.                     | Add R1518.                                                                | X01            |
| 7             | 25            | 2008/12/18            | KDS                | Follow crystal vendor test result.           | Change C2501 to 18pF,C2502 to 15pF                                        | X01            |
| 8             | 18,46,52      | 2008/12/04            | Dell               | Remove MDC function.                         | Remove MDC schematics,holding,stand off.                                  | X01            |
| 9             | 46            | 2008/12/04            | Wistron            | ID modify,Change USB connector.              | Change USB connector from one dual port to two single port.(22.10218.T51) | X01            |
| 10            | 45            | 2008/12/04            | Wistron            | Change touch pad connector.                  | Change touch pad connector to 20.K0179.004                                | X01            |
| 11            | 42            | 2008/12/08            | Wistron            | Change RJ45 connector.                       | Change RJ45 connector to 22.10177.C81                                     | X01            |
| 12            | 33            | 2008/12/15            | Wistron            | Add 15_ALW Schematics.                       | Add 15_ALW Schematics.                                                    | X01            |
| 13            | 30            | 2008/12/15            | Wistron            | Modify 3V 5V schematics.                     | Modify 3V 5V schematics.                                                  | X01            |
| <del>14</del> | <del>22</del> | <del>2008/12/15</del> | <del>Wistron</del> | <del>Dianoetic mode sound is too slow.</del> | <del>Modify PC Beep schematics.</del>                                     | <del>X01</del> |
| 15            | 26,41         | 2008/12/15            | Wistron            | For Panel Test.                              | Add LCD_TST_EN for panel test. R2638 POP.                                 | X01            |
| 16            | 52            | 2008/12/15            | Wistron            | EMI issue.                                   | Add SPR5201.                                                              | X01            |
| 17            | 28            | 2008/12/15            | Wistron            | Rename trace name.                           | Rename T8_THERMDC and T8_THERMDA.                                         | X01            |
| 18            | 41            | 2008/12/17            | Wistron            | CMO panel white screen issue.                | Reseve R4108.                                                             | X01            |
| 19            | 41            | 2008/12/18            | Wistron            | LCD Power Sequence Issue.                    | Modify LCD Power schematics. <del>Change LCD CONN part.</del>             | X01            |
| 20            | 52            | 2008/12/18            | Wistron            | EMI Issue.                                   | Add SPR5202.                                                              | X01            |
| <del>21</del> | <del>42</del> | <del>2008/12/19</del> | <del>Wistron</del> | <del>CRT R.G.B EA test issue.</del>          | <del>Change bead to 47ohm and depop capacitors for π filter.</del>        | <del>X01</del> |
| 22            | 32            | 2008/12/10            | Wistron            | Prevent leakage from KBC.                    | Change PR3203 pull high from +3.3V_ALW to +3.3V_RTC_LDO.                  | X01            |

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|------|------------------|------------|------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| 23   | 44, 52<br>51, 47 | 2008/12/15 | Wistron    | Modify based on EMI test result.              | EC5203/C5212/EC5202/C5211/C5213/EC5206/EC5201/EC5208<br>use 0.1u-Cap<br>EC4701/EC4702/EC4401/EC4402/EC4403/EC4404/EC5101<br>use 22P5V-Varistor<br>POWER_SW_LED_B add one 22P5V-Varistor<br>Add EC5209 0.1uF cap. | X01  |
| 24   | 20, 42, 46       | 2008/12/23 | Wistron    | Layout request.                               | Swap TR4602, RN2001, RN4202, TR4601 net.                                                                                                                                                                         | X01  |
| 25   | 46, 51           | 2008/12/23 | Wistron    | For EMI request.                              | Add D4601, D4602, D5101                                                                                                                                                                                          | X01  |
| 26   | 52               | 2009/01/05 | Wistron    | Reserve 3 Spring.                             | Add SPR5203, SPR5204, SPR5205.Dummy SPR5202.                                                                                                                                                                     | X01  |
| 27   | 15               | 2008/12/30 | Wistron    | Remove R1515.For layout get good performance. | Remove R1515,change R1549 to 2.2uF.                                                                                                                                                                              | X01  |
| 28   | 50               | 2009/01/06 | Wistron    | Change CON2 connector.                        | Change CON2 connector to 20.F1400.050.                                                                                                                                                                           | X01  |
| 29   | 9                | 2009/01/06 | Wistron    | For VCC_CORE sense.                           | Add PG901, PG902. Dummy C925, Pop C901                                                                                                                                                                           | X01  |
| 30   | 47, 52           | 2009/01/06 | Wistron    | For EMI request.                              | Reserve EC4704, EC5210, EC5211, EC5212, EC5213, EC5214                                                                                                                                                           | X01  |
| 31   | 26               | 2009/01/06 | Wistron    | Keyboard detect.                              | Pop R2625.                                                                                                                                                                                                       | X01  |
| 32   | 52               | 2009/01/08 | Wistron    | For EMI request.                              | Reserve EC5215 for +5V_RUN                                                                                                                                                                                       | X01  |
| 33   | 44, 51           | 2009/01/08 | Wistron    | Change HDD1, CON5 connector.                  | Modify HDD1, CON5 symbol.                                                                                                                                                                                        | X01  |
| 34   | 51               | 2009/01/09 | Wistron    | CON5 symbol layout concern.                   | Change CON5 pin5 to GND, pin7 to NC.                                                                                                                                                                             | X01  |
| 35   | 45               | 2009/01/09 | Wistron    | Touch pad cable change.                       | Modify TPAD1 pin define.                                                                                                                                                                                         | X01  |
| 36   | 52               | 2009/01/12 | Wistron    | For EMI request.                              | Reserve EC5216.                                                                                                                                                                                                  | X01  |
| 37   | 8                | 2009/01/12 | Wistron    | GTL issue.                                    | Pop C802.                                                                                                                                                                                                        | X01  |
| 38   | 22               | 2009/01/13 | Wistron    | Pop noise.                                    | Add KBC GPIO33.                                                                                                                                                                                                  | X01  |
| 39   | 51               | 2009/01/13 | Wistron    | KBC burn issue.                               | Change R5106 to 33 ohm.                                                                                                                                                                                          | X01  |
| 40   | 41               | 2009/02/19 | Wistron    | CMO panel white screen issue.                 | Pop R4108.                                                                                                                                                                                                       | X02  |
| 41   | 26               | 2009/02/19 | Wistron    | Change board ID.                              | Pop R2601, R2608.Dummy R2602, R2609.                                                                                                                                                                             | X02  |
| 42   | 31, 42, 44       | 2009/02/23 | Wistron    | Change connector.                             | Change SPK1, FAN1, RJ45 connector.                                                                                                                                                                               | X02  |
| 43   | 18, 26           | 2009/02/24 | Wistron    | Change 32.768K crystal cap size.              | Change C1806, C1807, C2607, C2608 to 0603 size.                                                                                                                                                                  | X02  |
|      |                  |            |            |                                               |                                                                                                                                                                                                                  |      |

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| 44   | 22       | 2009/02/27 | Wistron    | Codec pop noise.                 | Add Q2201~Q2205. Change C2204 to 2.2uF.<br>Move 60.4 ohm from small board to MB.                                                        | X02  |
| 45   | 46,51,52 | 2009/03/03 | Wistron    | Modify based on EMI test result. | EC5212, EC5211, EC5210, EC5214 -- 0.1u cap on board<br>TR4602, TR4601, TR5102 -- 67ohm common mode on board<br>spr5203--spring on board | X02  |
| 46   | 26       | 2009/03/03 | Wistron    | Remove PAID for KB detection     | Dummy R2625.                                                                                                                            | X02  |
| 47   | 52       | 2009/03/04 | Wistron    | For EMI request.                 | Add SPR5206, SPR5207, SPR5208.                                                                                                          | X02  |
| 48   | 26       | 2009/04/02 | Wistron    | Board ID Changed.                | Pop R2604, Dummy R2603.                                                                                                                 | X02  |
|      |          |            |            |                                  |                                                                                                                                         |      |

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