

# Schematics Page Index (Title / Revision / Change Date)

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Project Code & Schematics Subject: M960&M970 H Model

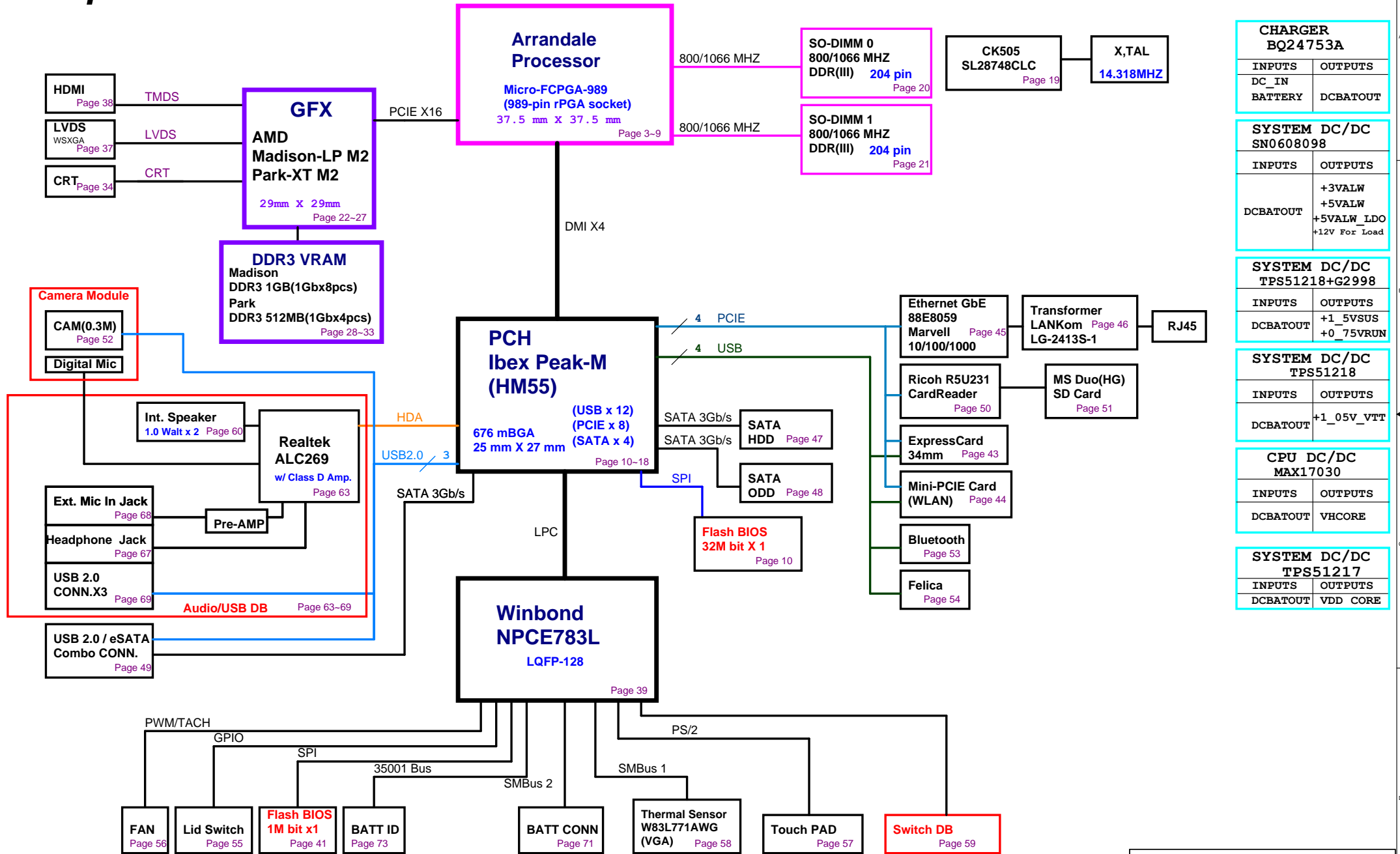
PCB P/N:

1P-0099J00-80SB (IRIS MB)  
1P-1099J00-80SB (IRIS AUDIO)  
1P-1099J01-80SB (IRIS PWR)  
1P-0099500-80SB (HANNSTAR MB)  
1P-1099500-80SB (HANNSTAR Audio)  
1P-1099501-80SB (HANNSTAR PWR)

| P. Leader | Check by | Design by |
|-----------|----------|-----------|
|           |          |           |

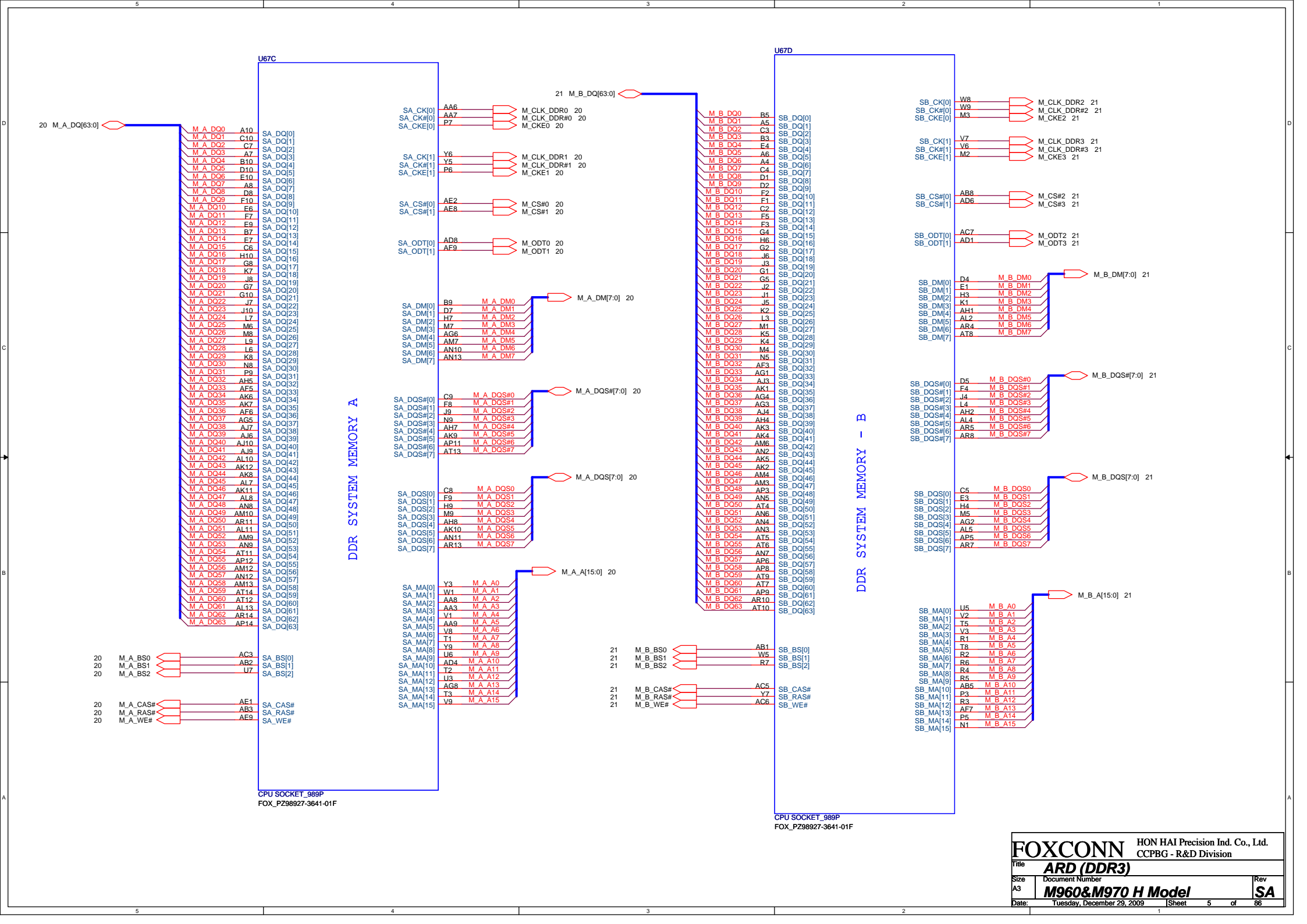
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|--------------------------------------|---|--|------------------|
| <b>FOXCONN</b>                       |   | HON HAI Precision Ind. Co., Ltd.<br>CCPBG - R&D Division |                  |
| Title <b>Index Page</b>              |   |  |                  |
| Size<br>A3                           | Document Number<br><b>M960&amp;M970 H Model</b> |  | Rev<br><b>SA</b> |
| Date:<br>Thursday, December 24, 2009 | Sheet<br>1                                      | of<br>86   |                  |

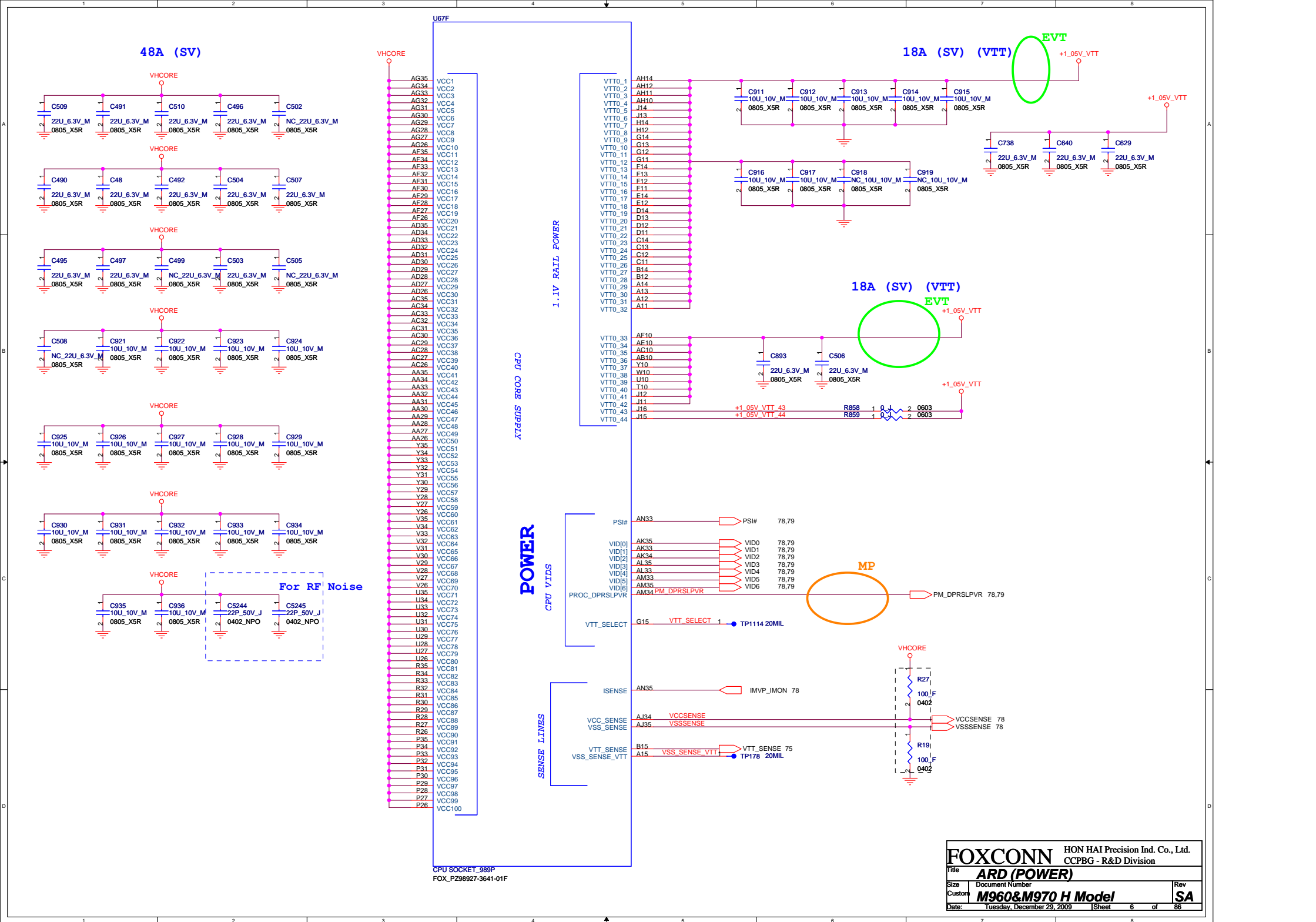
***M960&M970 H Model Calpella Platform+ AMD Madison/Park Discrete Graphic+ VRAM\*8***





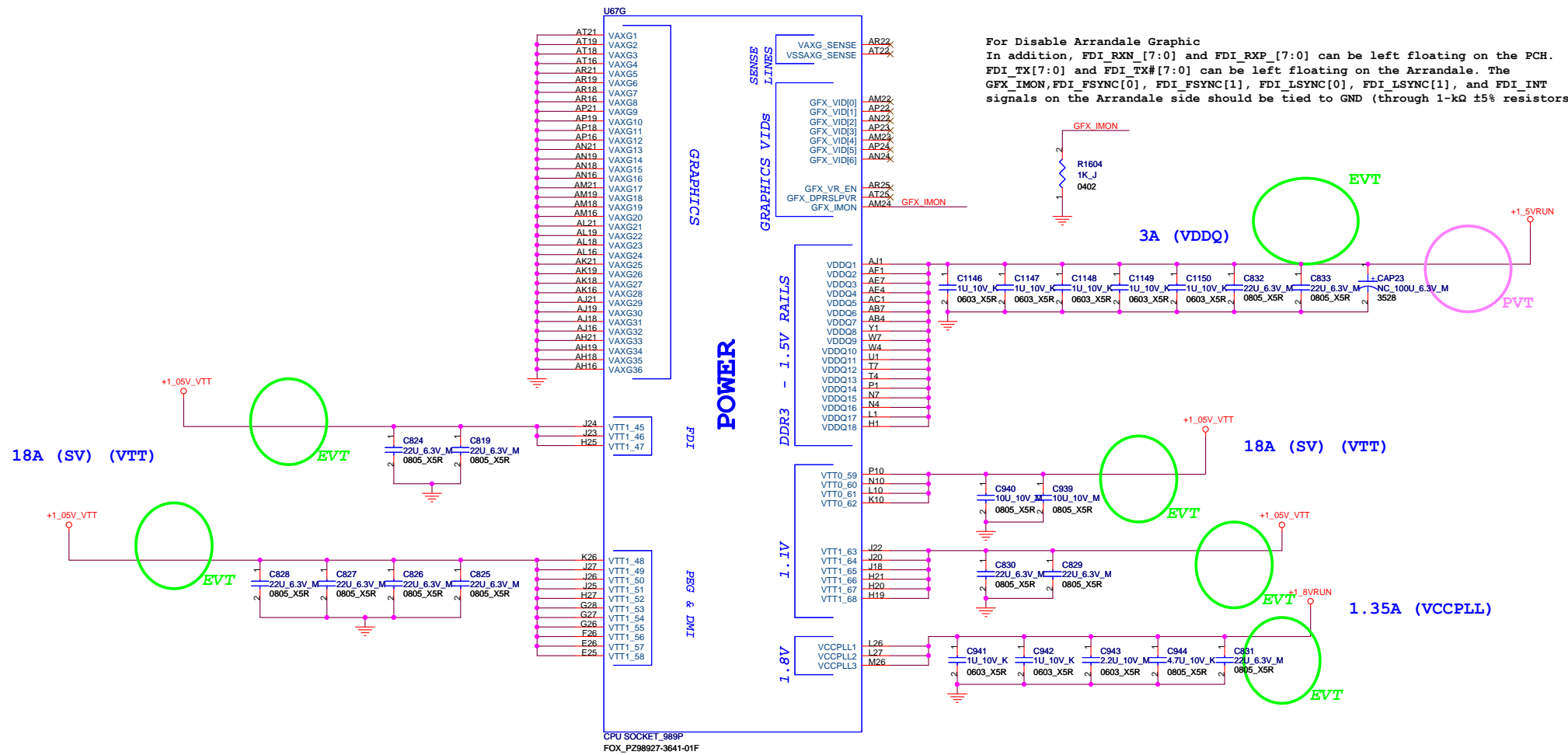




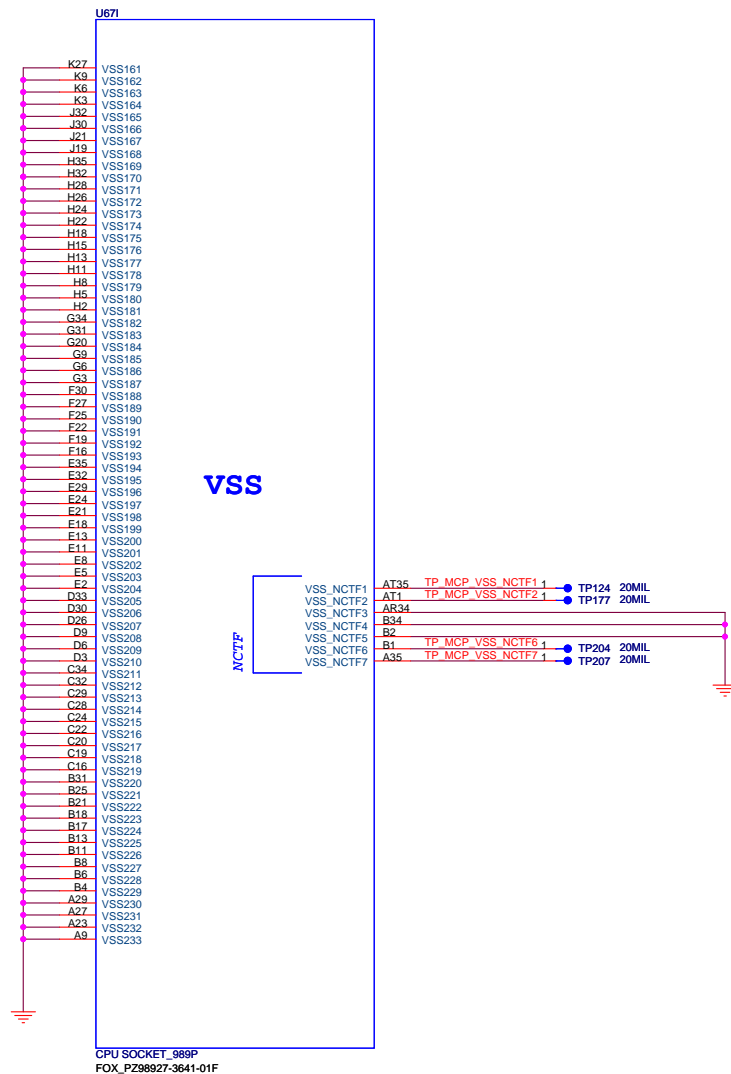
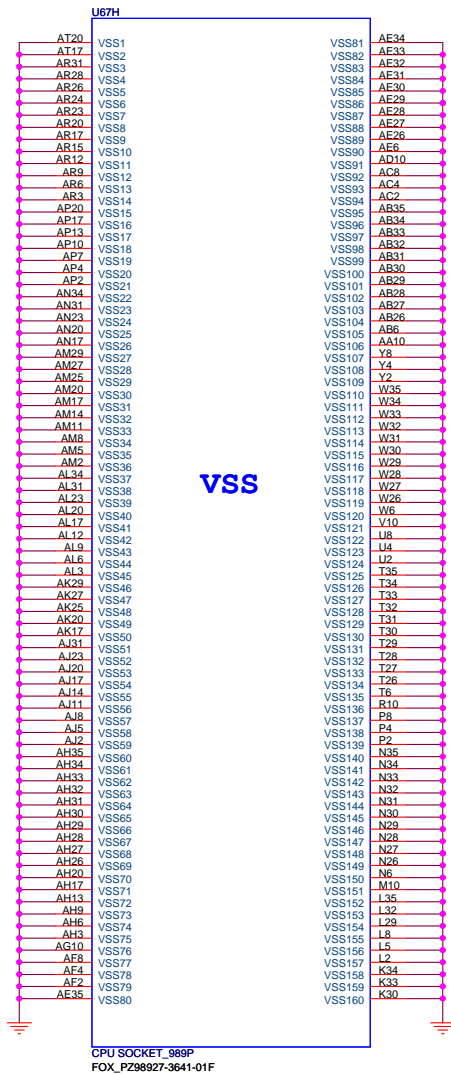


For Disable Arrandale Graphic

In addition, FDI\_RXN[7:0] and FDI\_RXP[7:0] can be left floating on the PCH. FDI\_TX[7:0] and FDI\_TX# [7:0] can be left floating on the Arrandale. The GFX\_LMON, FDI\_FSYNC[0], FDI\_FSYNC[1], FDI\_LSYNC[0], FDI\_LSYNC[1], and FDI\_INT signals on the Arrandale side should be tied to GND (through 1-k $\Omega$   $\pm$ 5% resistors).

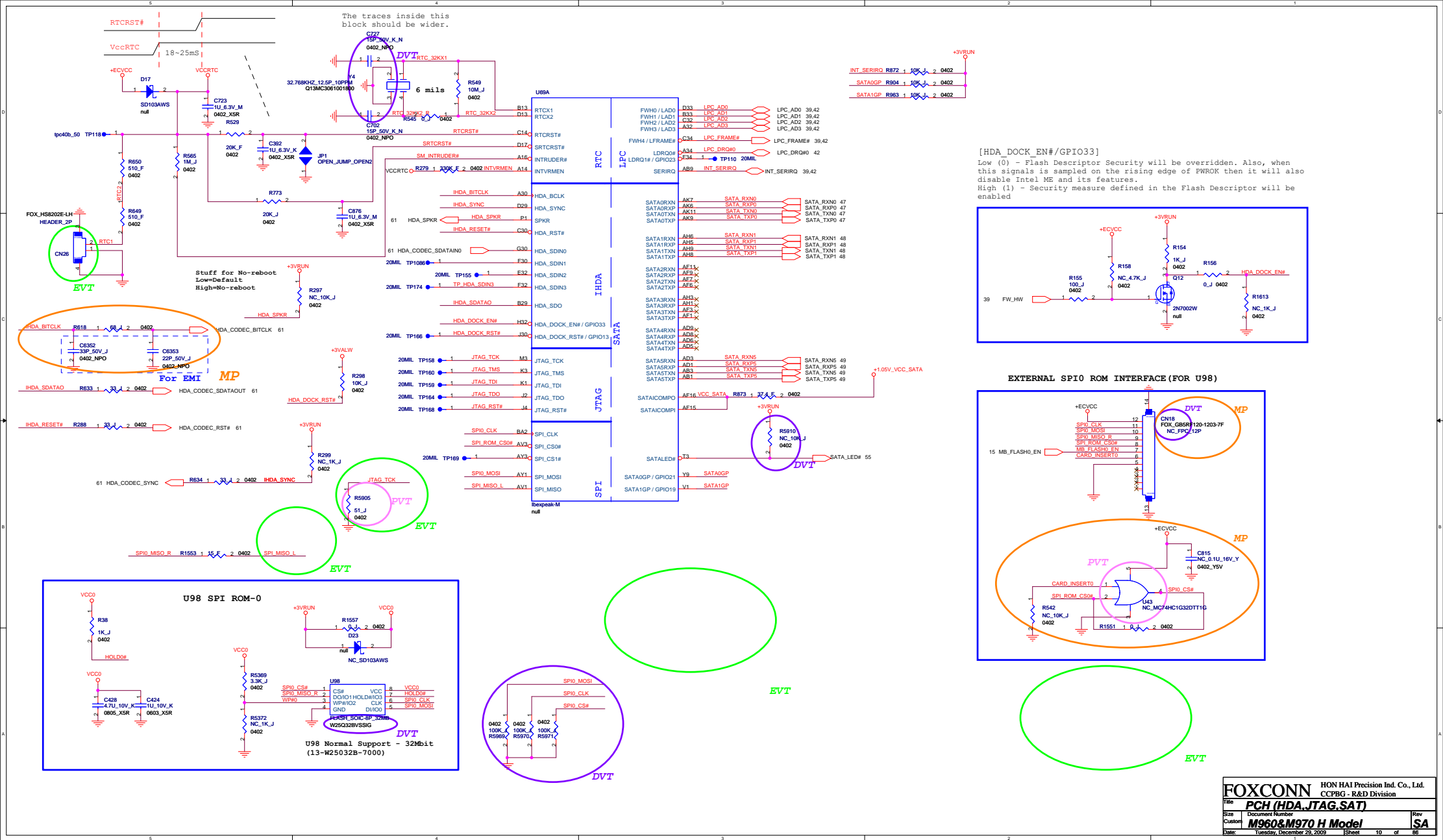




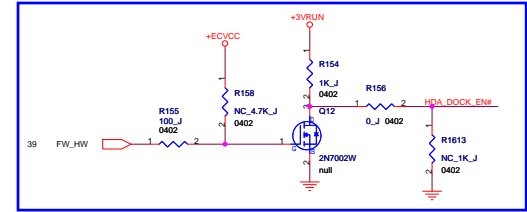




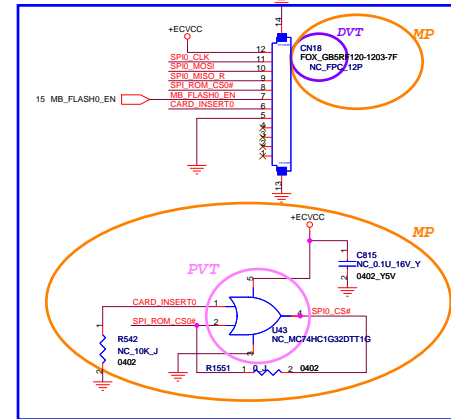
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| <b>FOXCONN</b> |   | <b>HON HAI Precision Ind. Co., Ltd.</b> |                                     |
|                |   | <b>CCPBG - R&amp;D Division</b>         |                                     |
| Title          | <b><i>ARD (RESERVED)</i></b>              |   |                                     |
| Size<br>A3     | Document Number                           | Rev                                     |                                     |
|                | <b><i>M960&amp;M970 H Model</i></b>       | <b><i>SA</i></b>                        |                                     |
| Date:          | <b><i>Thursday, December 24, 2009</i></b> | Sheet                                   | <b><i>9</i></b> of <b><i>86</i></b> |



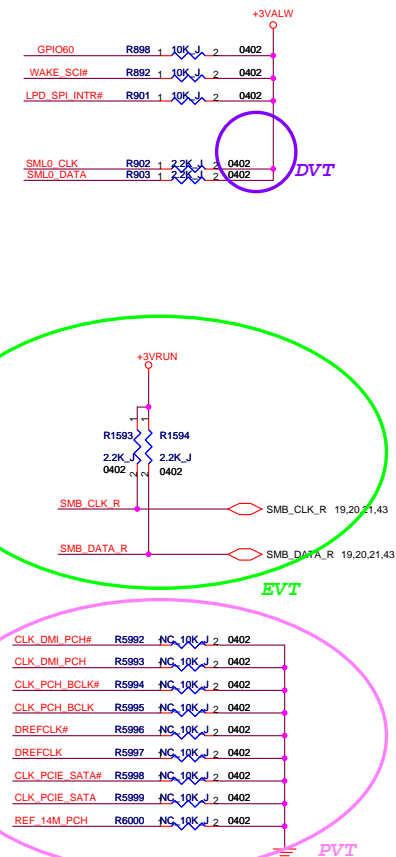
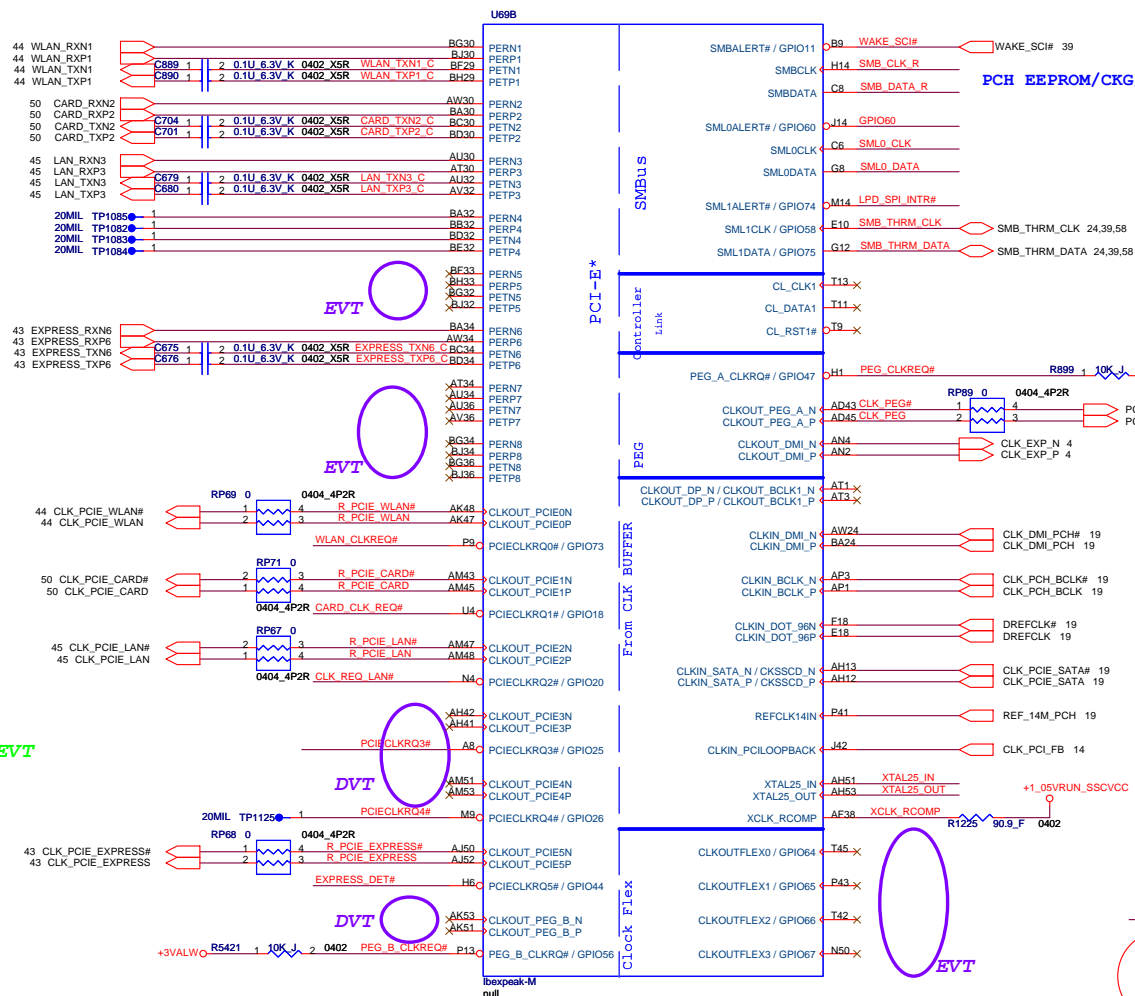
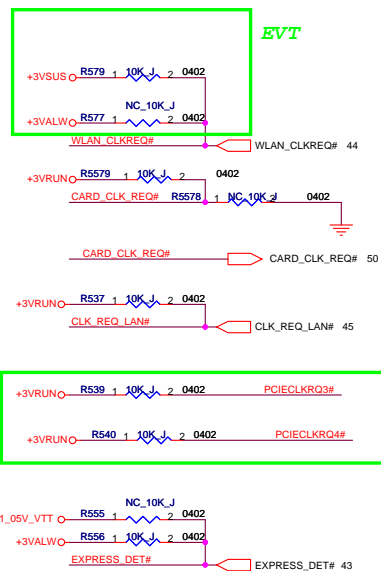
[HDA\_DOCK\_EN#/GPIO33]  
Low (0) - Flash Descriptor Security will be overridden. Also, when this signals is sampled on the rising edge of PWROK then it will also disable Intel ME and its features.  
High (1) - Security measure defined in the Flash Descriptor will be enabled



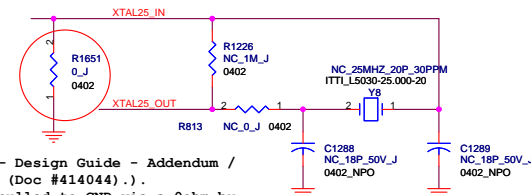
#### EXTERNAL SPI0 ROM INTERFACE (FOR U98)



| Port  | Function              |
|-------|-----------------------|
| Port1 | WLAN                  |
| Port2 | Ricoh R5U231          |
| Port3 | GbE LAN               |
| Port4 | NC                    |
| Port5 | NC                    |
| Port6 | ExpressCard/34 (PCIE) |
| Port7 | NC                    |
| Port8 | NC                    |



2009/11/19 Add reserve 10k pull-low resistor for Intel FCIM function



Calpella Platform - Design Guide - Addendum /  
Update - Rev. 1.52 (Doc #414044).).

XTAL\_IN should be pulled to GND via a 0ohm by default.

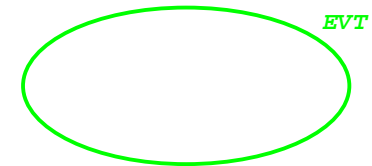
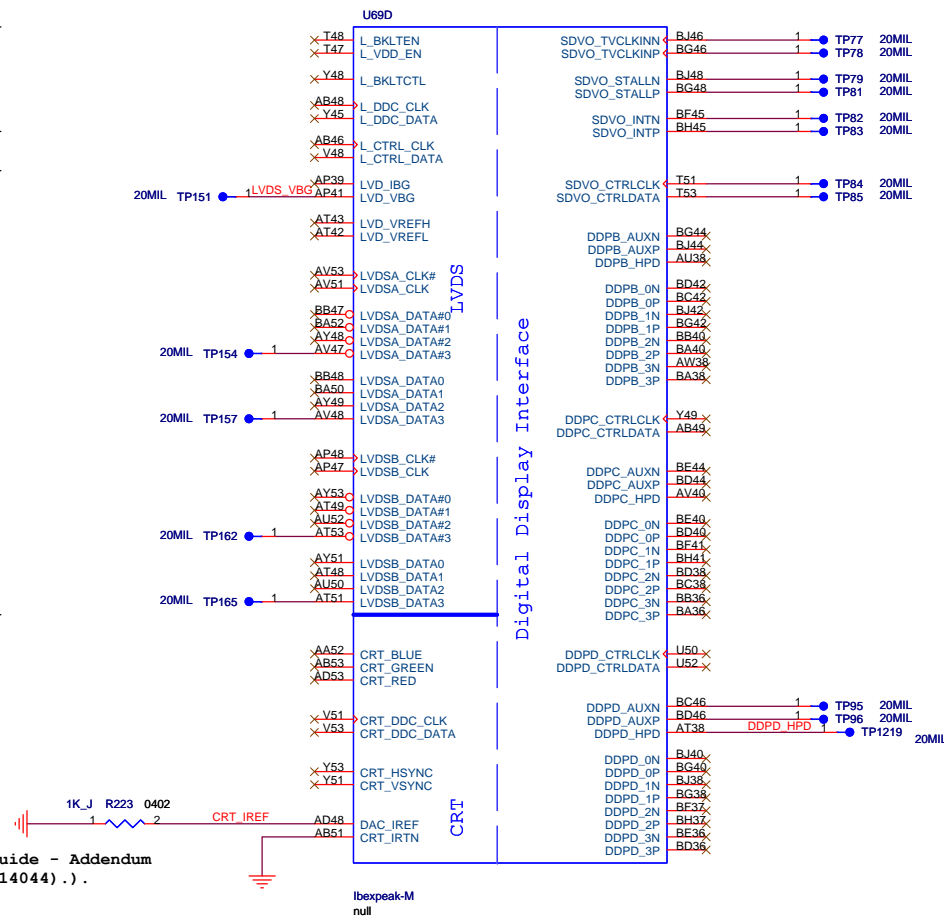
This pull-down resistor on XTAL\_IN should only be un-stuffed when 25MHz crystal is used.

SMBus Address: AEH

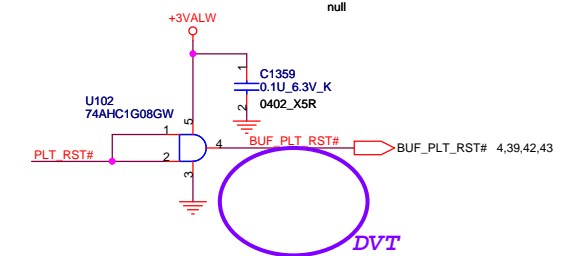
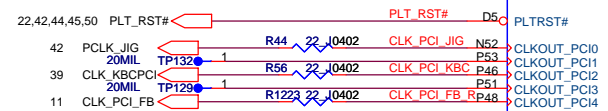
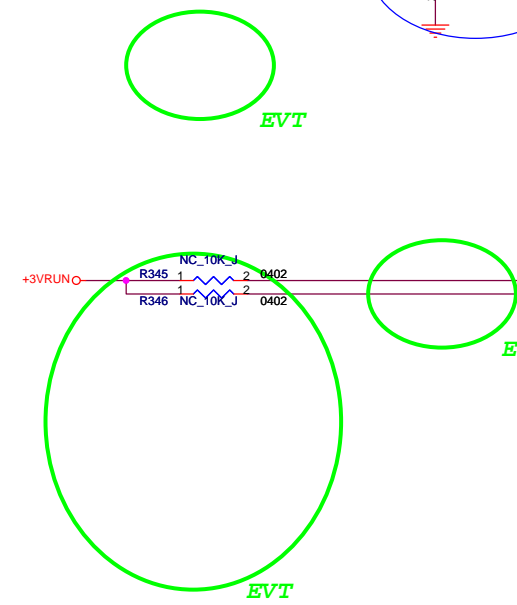
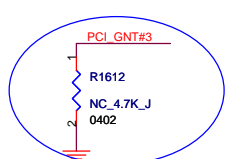
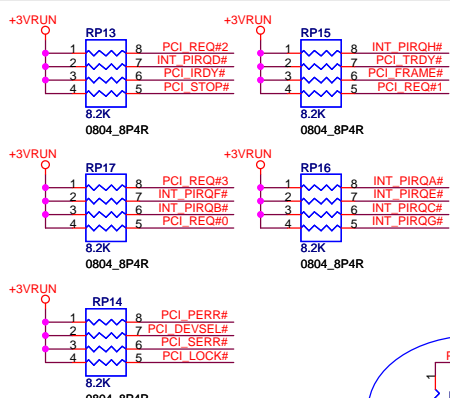
|                                 |   |                                  |          |
|---------------------------------|---|----------------------------------|----------|
| <b>FOXCONN</b>                  |   | HON HAI Precision Ind. Co., Ltd. |          |
| Title <b>PCH (DMI,FDI,GPIO)</b> |   | CCPPBG - R&D Division            |          |
| Size<br>A3                      | Document Number<br><b>M960&amp;M970 H Model</b> | Rev<br><b>SA</b>                 |          |
| Date:                           | Tuesday, December 29, 2009                      | Sheet                            | 12 of 86 |

NC for disable LVDS

NC for disable LVDS



Calpella Platform - Design Guide - Addendum  
/ Update - Rev. 1.52 (Doc #414044).).



Buffer to reduce loading on PLT\_RST#.

|       |       |   |     |             |     |
|-------|-------|---|-----|-------------|-----|
| 20MIL | TP182 | 1 | H40 | INT_PIRQA#  | G38 |
| 20MIL | TP167 | 1 | N34 | INT_PIRQB#  | H51 |
| 20MIL | TP186 | 1 | C44 | INT_PIRQC#  | B37 |
| 20MIL | TP194 | 1 | A38 | INT_PIRQD#  | A44 |
| 20MIL | TP187 | 1 | C36 | PCI_REQ#0   | F51 |
| 20MIL | TP199 | 1 | J34 | PCI_REQ#1   | A46 |
| 20MIL | TP201 | 1 | A40 | PCI_REQ#2   | B45 |
| 20MIL | TP200 | 1 | D45 | PCI_REQ#3   | M53 |
| 20MIL | TP202 | 1 | E36 | PCI_GNT#0   | F48 |
| 20MIL | TP319 | 1 | H48 | PCI_GNT#1   | F48 |
| 20MIL | TP247 | 1 | E40 | PCI_GNT#2   | F36 |
| 20MIL | TP322 | 1 | M48 | PCI_GNT#3   | H53 |
| 20MIL | TP363 | 1 | D13 | INT_PIROE#  | B41 |
| 20MIL | TP324 | 1 | M45 | INT_PIROF#  | K53 |
| 20MIL | TP426 | 1 | F53 | INT_PIROG#  | A36 |
| 20MIL | TP428 | 1 | M40 | INT_PIROH#  | A40 |
| 20MIL | TP427 | 1 | M43 | PCI_SERR#   | E44 |
| 20MIL | TP429 | 1 | J36 | PCI_PERR#   | E50 |
| 20MIL | TP431 | 1 | K48 | PCI_IRDY#   | A42 |
| 20MIL | TP430 | 1 | F40 | PCI_PAR     | H44 |
| 20MIL | TP432 | 1 | C42 | PCI_DEVSEL# | F46 |
| 20MIL | TP434 | 1 | K46 | PCI_FRAME#  | C46 |
| 20MIL | TP433 | 1 | M51 | PCI_LOCK#   | D49 |
| 20MIL | TP435 | 1 | J52 | PCI_STOP#   | D41 |
| 20MIL | TP437 | 1 | L34 | PCI_TRDY#   | C48 |
| 20MIL | TP436 | 1 | K51 | PME#_ICH    | M7  |
| 20MIL | TP438 | 1 | F42 | PLT_RST#    | D5  |
| 20MIL | TP440 | 1 | J40 | CLKOUT_PCIO | N52 |
| 20MIL | TP439 | 1 | G46 | CLKOUT_PC1  | P53 |
| 20MIL | TP441 | 1 | F44 | CLKOUT_PC2  | P46 |
| 20MIL | TP443 | 1 | M47 | CLKOUT_PC3  | P51 |
| 20MIL | TP442 | 1 | H36 | CLKOUT_PC4  | P48 |

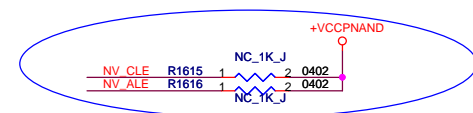
|      |         |      |      |
|------|---------|------|------|
| AD0  | NV_CE#0 | ADY# | ADY# |
| AD1  | NV_CE#1 | BDY# | BDY# |
| AD2  | NV_CE#2 | ADY# | ADY# |
| AD3  | NV_CE#3 | BDY# | BDY# |
| AD4  | NV_DQ0  | ADY# | ADY# |
| AD5  | NV_DQ1  | BDY# | BDY# |
| AD6  | NV_DQ2  | ADY# | ADY# |
| AD7  | NV_DQ3  | BDY# | BDY# |
| AD8  | NV_DQ4  | ADY# | ADY# |
| AD9  | NV_DQ5  | BDY# | BDY# |
| AD10 | NV_DQ6  | ADY# | ADY# |
| AD11 | NV_DQ7  | BDY# | BDY# |
| AD12 | NV_DQ8  | ADY# | ADY# |
| AD13 | NV_DQ9  | BDY# | BDY# |
| AD14 | NV_DQ10 | ADY# | ADY# |
| AD15 | NV_DQ11 | BDY# | BDY# |
| AD16 | NV_DQ12 | ADY# | ADY# |
| AD17 | NV_DQ13 | BDY# | BDY# |
| AD18 | NV_DQ14 | ADY# | ADY# |
| AD19 | NV_DQ15 | BDY# | BDY# |
| AD20 | NV_DQ16 | ADY# | ADY# |
| AD21 | NV_DQ17 | BDY# | BDY# |
| AD22 | NV_DQ18 | ADY# | ADY# |
| AD23 | NV_DQ19 | BDY# | BDY# |
| AD24 | NV_DQ20 | ADY# | ADY# |
| AD25 | NV_DQ21 | BDY# | BDY# |
| AD26 | NV_DQ22 | ADY# | ADY# |
| AD27 | NV_DQ23 | BDY# | BDY# |
| AD28 | NV_DQ24 | ADY# | ADY# |
| AD29 | NV_DQ25 | BDY# | BDY# |
| AD30 | NV_DQ26 | ADY# | ADY# |
| AD31 | NV_DQ27 | BDY# | BDY# |

|         |        |        |        |        |
|---------|--------|--------|--------|--------|
| C/BE0#  | PIRQA# | PIRQB# | PIRQC# | PIRQD# |
| C/BE1#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE2#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE3#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE4#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE5#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE6#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE7#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE8#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE9#  | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE10# | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE11# | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE12# | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE13# | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE14# | REQ0#  | REQ1#  | REQ2#  | REQ3#  |
| C/BE15# | REQ0#  | REQ1#  | REQ2#  | REQ3#  |

|         |         |         |         |
|---------|---------|---------|---------|
| USBP0N  | USB P0  | USB P0  | USB P0  |
| USBP0P  | USB P0  | USB P0  | USB P0  |
| USBP1N  | USB P1  | USB P1  | USB P1  |
| USBP1P  | USB P1  | USB P1  | USB P1  |
| USBP2N  | USB P2  | USB P2  | USB P2  |
| USBP2P  | USB P2  | USB P2  | USB P2  |
| USBP3N  | USB P3  | USB P3  | USB P3  |
| USBP3P  | USB P3  | USB P3  | USB P3  |
| USBP4N  | USB P4  | USB P4  | USB P4  |
| USBP4P  | USB P4  | USB P4  | USB P4  |
| USBP5N  | USB P5  | USB P5  | USB P5  |
| USBP5P  | USB P5  | USB P5  | USB P5  |
| USBP6N  | USB P6  | USB P6  | USB P6  |
| USBP6P  | USB P6  | USB P6  | USB P6  |
| USBP7N  | USB P7  | USB P7  | USB P7  |
| USBP7P  | USB P7  | USB P7  | USB P7  |
| USBP8N  | USB P8  | USB P8  | USB P8  |
| USBP8P  | USB P8  | USB P8  | USB P8  |
| USBP9N  | USB P9  | USB P9  | USB P9  |
| USBP9P  | USB P9  | USB P9  | USB P9  |
| USBP10N | USB P10 | USB P10 | USB P10 |
| USBP10P | USB P10 | USB P10 | USB P10 |
| USBP11N | USB P11 | USB P11 | USB P11 |
| USBP11P | USB P11 | USB P11 | USB P11 |
| USBP12N | USB P12 | USB P12 | USB P12 |
| USBP12P | USB P12 | USB P12 | USB P12 |
| USBP13N | USB P13 | USB P13 | USB P13 |
| USBP13P | USB P13 | USB P13 | USB P13 |

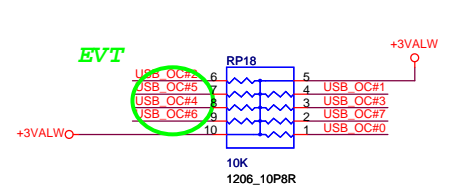
|               |          |          |          |
|---------------|----------|----------|----------|
| OC0# / GPIO59 | USB OC#0 | USB OC#0 | USB OC#0 |
| OC1# / GPIO40 | USB OC#1 | USB OC#1 | USB OC#1 |
| OC2# / GPIO41 | USB OC#2 | USB OC#2 | USB OC#2 |
| OC3# / GPIO42 | USB OC#3 | USB OC#3 | USB OC#3 |
| OC4# / GPIO43 | USB OC#4 | USB OC#4 | USB OC#4 |
| OC5# / GPIO9  | USB OC#5 | USB OC#5 | USB OC#5 |
| OC6# / GPIO10 | USB OC#6 | USB OC#6 | USB OC#6 |
| OC7# / GPIO14 | USB OC#7 | USB OC#7 | USB OC#7 |

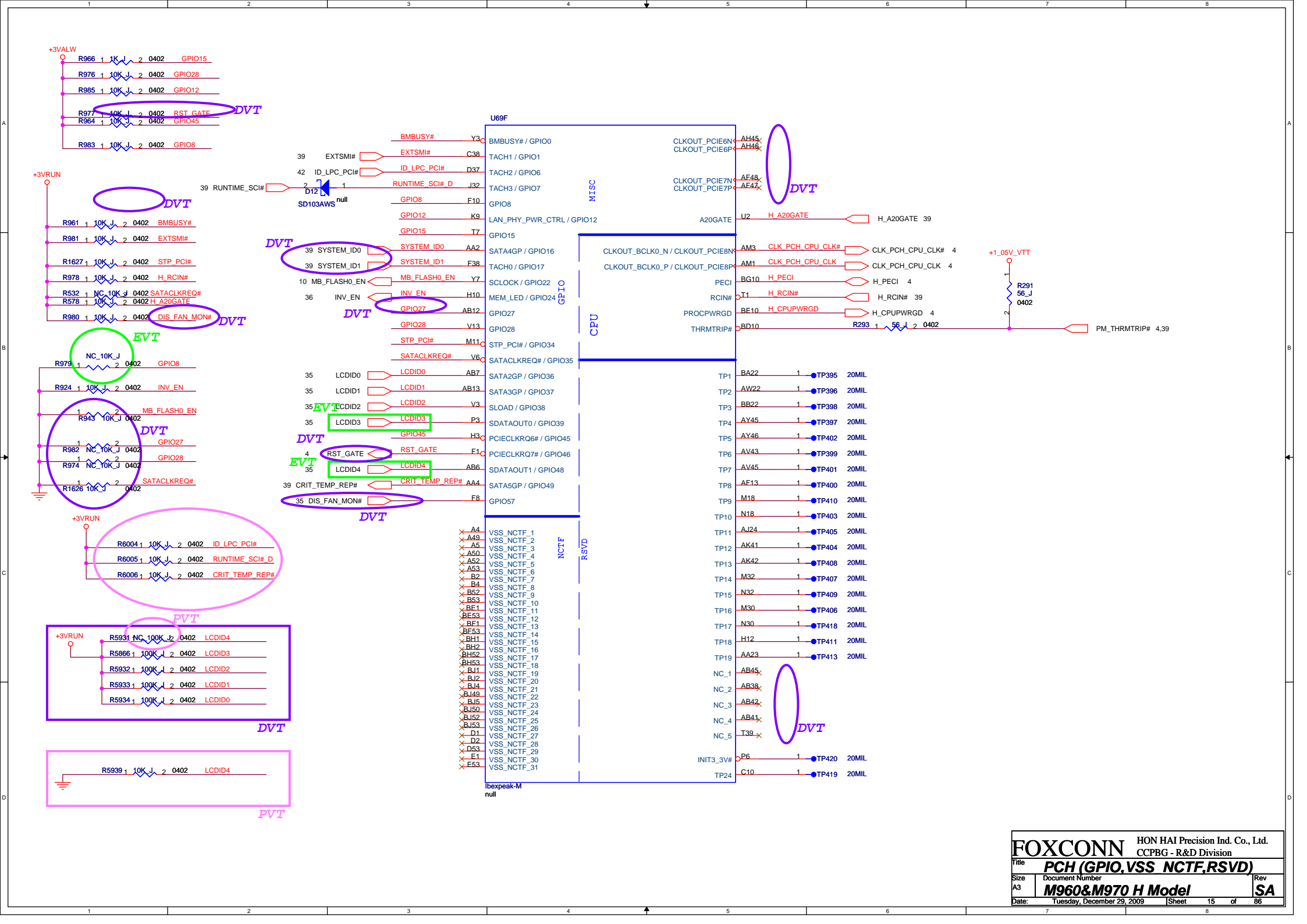
| DMI Termination Voltage |                      |
|-------------------------|----------------------|
| NV_CLE                  | Set to Vss when LOW  |
| NV_CLE                  | Set to Vcc when HIGH |



Danbury Technology  
Disabled when Low  
Enabled when High

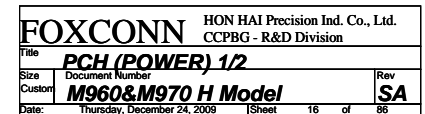
| USB PORT | Function             |
|----------|----------------------|
| PORT-0   | eSATA                |
| PORT-1   | External Port-2      |
| PORT-2   |                      |
| PORT-3   | ExpressCard/34 (USB) |
| PORT-4   | External Port-3      |
| PORT-5   | External Port-1      |
| PORT-6   |                      |
| PORT-7   |                      |
| PORT-8   |                      |
| PORT-9   | Camera               |
| PORT-10  |                      |
| PORT-11  | Felica               |
| PORT-12  | WLAN                 |
| PORT-13  | Bluetooth            |



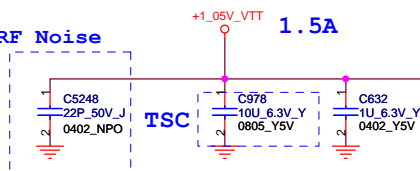




For Disable Arrandale Graphic  
GPIO27 floating as Internal VRM and there is no need external supply



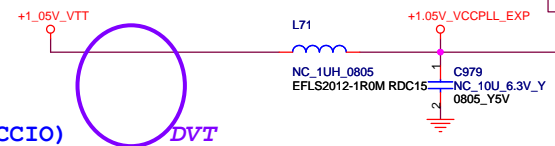
For RF Noise



3.062A (VCCIO)

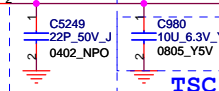
Default is use Internal VRM

For Disable Arrandale Graphic  
GPIO27 floating as Internal VRM and there is no need external supply



3.062A (VCCIO)

For RF Noise

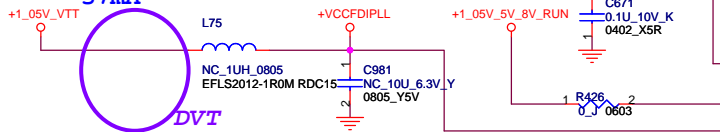


TSC

200mA

357mA

37mA



Default is use Internal VRM

For Disable Arrandale Graphic  
GPIO27 floating as Internal VRM and there is no need external supply

U69G

POWER

VCC CORE

CRT

LVDS

HVCMOS

DMI

PCI E\*

NAND / SPI

FDI

VCCIO[1]

VCCIO[2]

VCCIO[3]

VCCIO[4]

VCCIO[5]

VCCIO[6]

VCCIO[7]

VCCIO[8]

VCCIO[9]

VCCIO[10]

VCCIO[11]

VCCIO[12]

VCCIO[13]

VCCIO[14]

VCCIO[15]

VCCIO[16]

VCCIO[17]

VCCIO[18]

VCCIO[19]

VCCIO[20]

VCCIO[21]

VCCIO[22]

VCCIO[23]

VCCIO[24]

VCCIO[25]

VCCIO[26]

VCCIO[27]

VCCIO[28]

VCCIO[29]

VCCIO[30]

VCCIO[31]

VCCIO[32]

VCCIO[33]

VCCIO[34]

VCCIO[35]

VCCIO[36]

VCCIO[37]

VCCIO[38]

VCCIO[39]

VCCIO[40]

VCCIO[41]

VCCIO[42]

VCCIO[43]

VCCIO[44]

VCCIO[45]

VCCIO[46]

VCCIO[47]

VCCIO[48]

VCCIO[49]

VCCIO[50]

VCCIO[51]

VCCIO[52]

VCCIO[53]

VCCIO[54]

VCCIO[55]

VCCIO[56]

VCCIO[57]

VCCIO[58]

VCCIO[59]

VCCIO[60]

VCCIO[61]

VCCIO[62]

VCCIO[63]

VCCIO[64]

VCCIO[65]

VCCIO[66]

VCCIO[67]

VCCIO[68]

VCCIO[69]

VCCIO[70]

VCCIO[71]

VCCIO[72]

VCCIO[73]

VCCIO[74]

VCCIO[75]

VCCIO[76]

VCCIO[77]

VCCIO[78]

VCCIO[79]

VCCIO[80]

VCCIO[81]

VCCIO[82]

VCCIO[83]

VCCIO[84]

VCCIO[85]

VCCIO[86]

VCCIO[87]

VCCIO[88]

VCCIO[89]

VCCIO[90]

VCCIO[91]

VCCIO[92]

VCCIO[93]

VCCIO[94]

VCCIO[95]

VCCIO[96]

VCCIO[97]

VCCIO[98]

VCCIO[99]

VCCIO[100]

VCCIO[101]

VCCIO[102]

VCCIO[103]

VCCIO[104]

VCCIO[105]

VCCIO[106]

VCCIO[107]

VCCIO[108]

VCCIO[109]

VCCIO[110]

VCCIO[111]

VCCIO[112]

VCCIO[113]

VCCIO[114]

VCCIO[115]

VCCIO[116]

VCCIO[117]

VCCIO[118]

VCCIO[119]

VCCIO[120]

VCCIO[121]

VCCIO[122]

VCCIO[123]

VCCIO[124]

VCCIO[125]

VCCIO[126]

VCCIO[127]

VCCIO[128]

VCCIO[129]

VCCIO[130]

VCCIO[131]

VCCIO[132]

VCCIO[133]

VCCIO[134]

VCCIO[135]

VCCIO[136]

VCCIO[137]

VCCIO[138]

VCCIO[139]

VCCIO[140]

VCCIO[141]

VCCIO[142]

VCCIO[143]

VCCIO[144]

VCCIO[145]

VCCIO[146]

VCCIO[147]

VCCIO[148]

VCCIO[149]

VCCIO[150]

VCCIO[151]

VCCIO[152]

VCCIO[153]

VCCIO[154]

VCCIO[155]

VCCIO[156]

VCCIO[157]

VCCIO[158]

VCCIO[159]

VCCIO[160]

VCCIO[161]

VCCIO[162]

VCCIO[163]

VCCIO[164]

VCCIO[165]

VCCIO[166]

VCCIO[167]

VCCIO[168]

VCCIO[169]

VCCIO[170]

VCCIO[171]

VCCIO[172]

VCCIO[173]

VCCIO[174]

VCCIO[175]

VCCIO[176]

VCCIO[177]

VCCIO[178]

VCCIO[179]

VCCIO[180]

VCCIO[181]

VCCIO[182]

VCCIO[183]

VCCIO[184]

VCCIO[185]

VCCIO[186]

VCCIO[187]

VCCIO[188]

VCCIO[189]

VCCIO[190]

VCCIO[191]

VCCIO[192]

VCCIO[193]

VCCIO[194]

VCCIO[195]

VCCIO[196]

VCCIO[197]

VCCIO[198]

VCCIO[199]

VCCIO[200]

VCCIO[201]

VCCIO[202]

VCCIO[203]

VCCIO[204]

VCCIO[205]

VCCIO[206]

VCCIO[207]

VCCIO[208]

VCCIO[209]

VCCIO[210]

VCCIO[211]

VCCIO[212]

VCCIO[213]

VCCIO[214]

VCCIO[215]

VCCIO[216]

VCCIO[217]

VCCIO[218]

VCCIO[219]

VCCIO[220]

VCCIO[221]

VCCIO[222]

VCCIO[223]

VCCIO[224]

VCCIO[225]

VCCIO[226]

VCCIO[227]

VCCIO[228]

VCCIO[229]

VCCIO[230]

VCCIO[231]

VCCIO[232]

VCCIO[233]

VCCIO[234]

VCCIO[235]

VCCIO[236]

VCCIO[237]

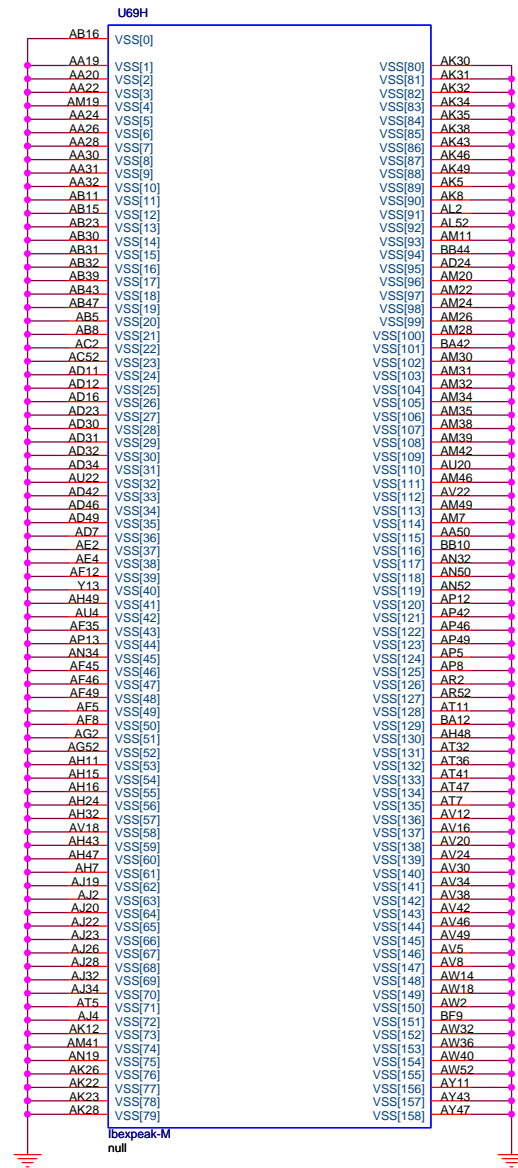
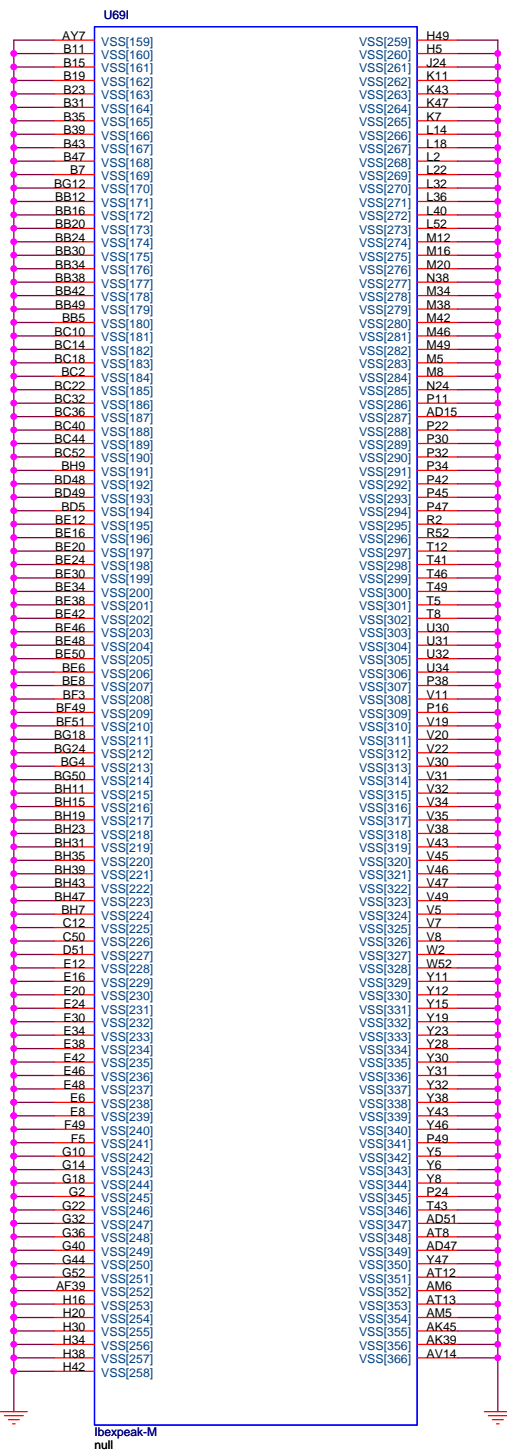
VCCIO[238]

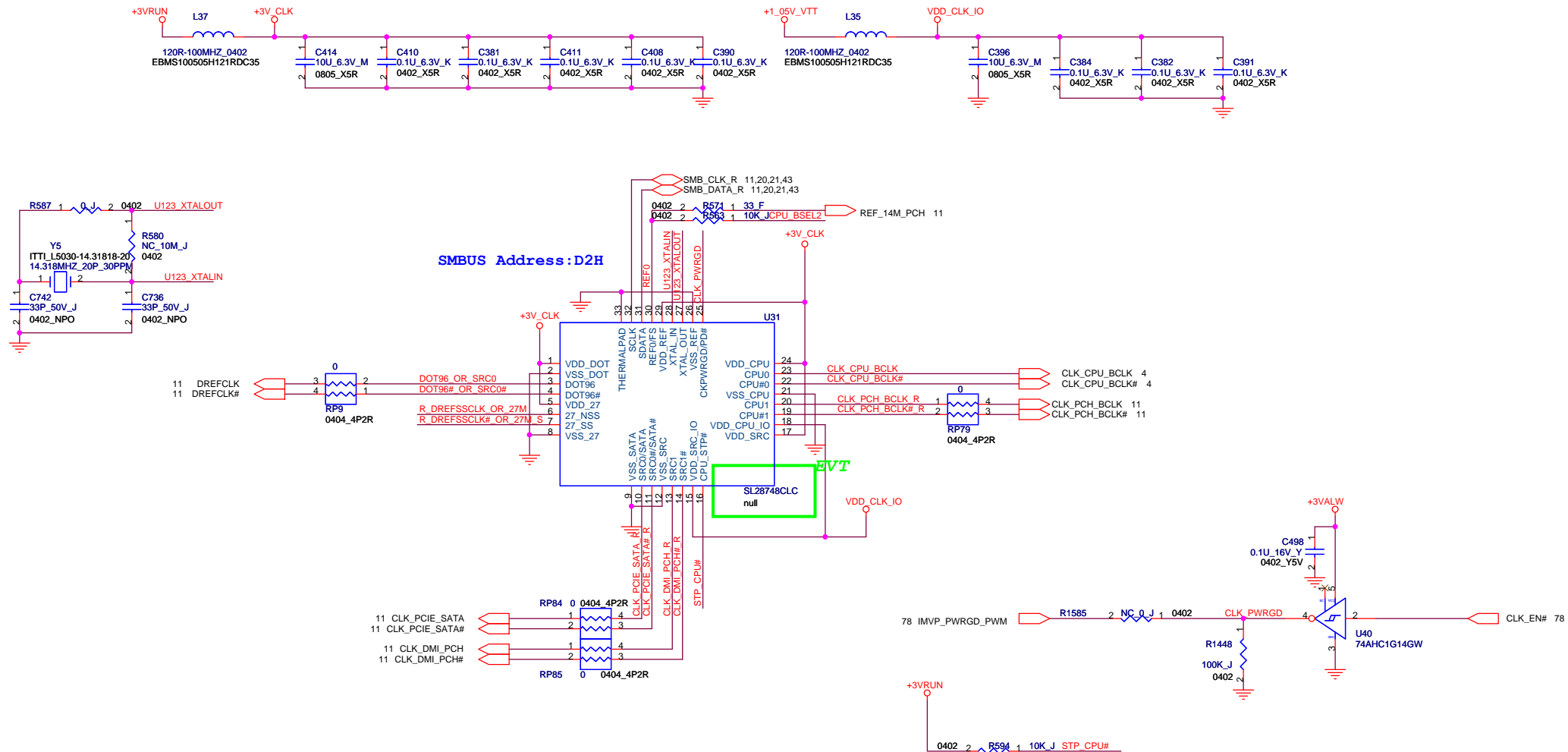
VCCIO[239]

VCCIO[240]

VCCIO[241]

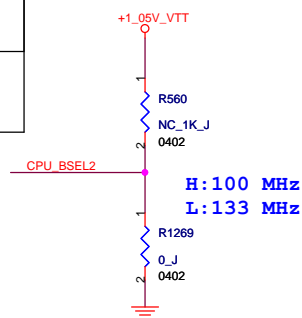
VCCIO[242]



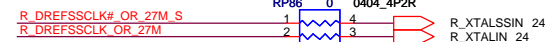


Frequency Select Pin (FS)

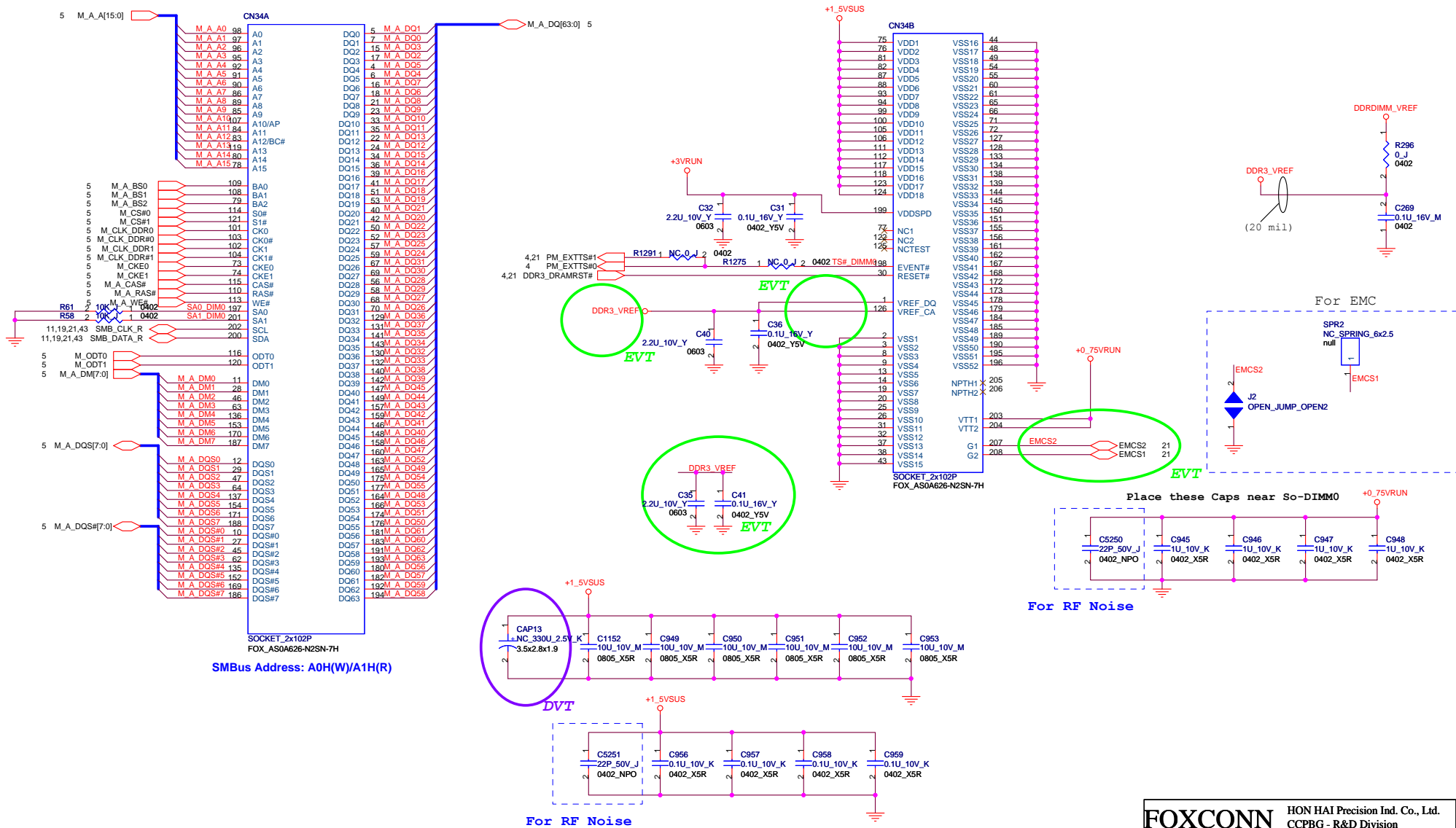
| FS | CPU    | Power On | SRC    | SATA   | DOT96 | 27MHz | REF       |
|----|--------|----------|--------|--------|-------|-------|-----------|
| 0  | 133MHz | Default  | 100MHz | 100MHz | 96MHz | 27MHz | 14.318MHz |
| 1  | 100MHz |          |        |        |       |       |           |

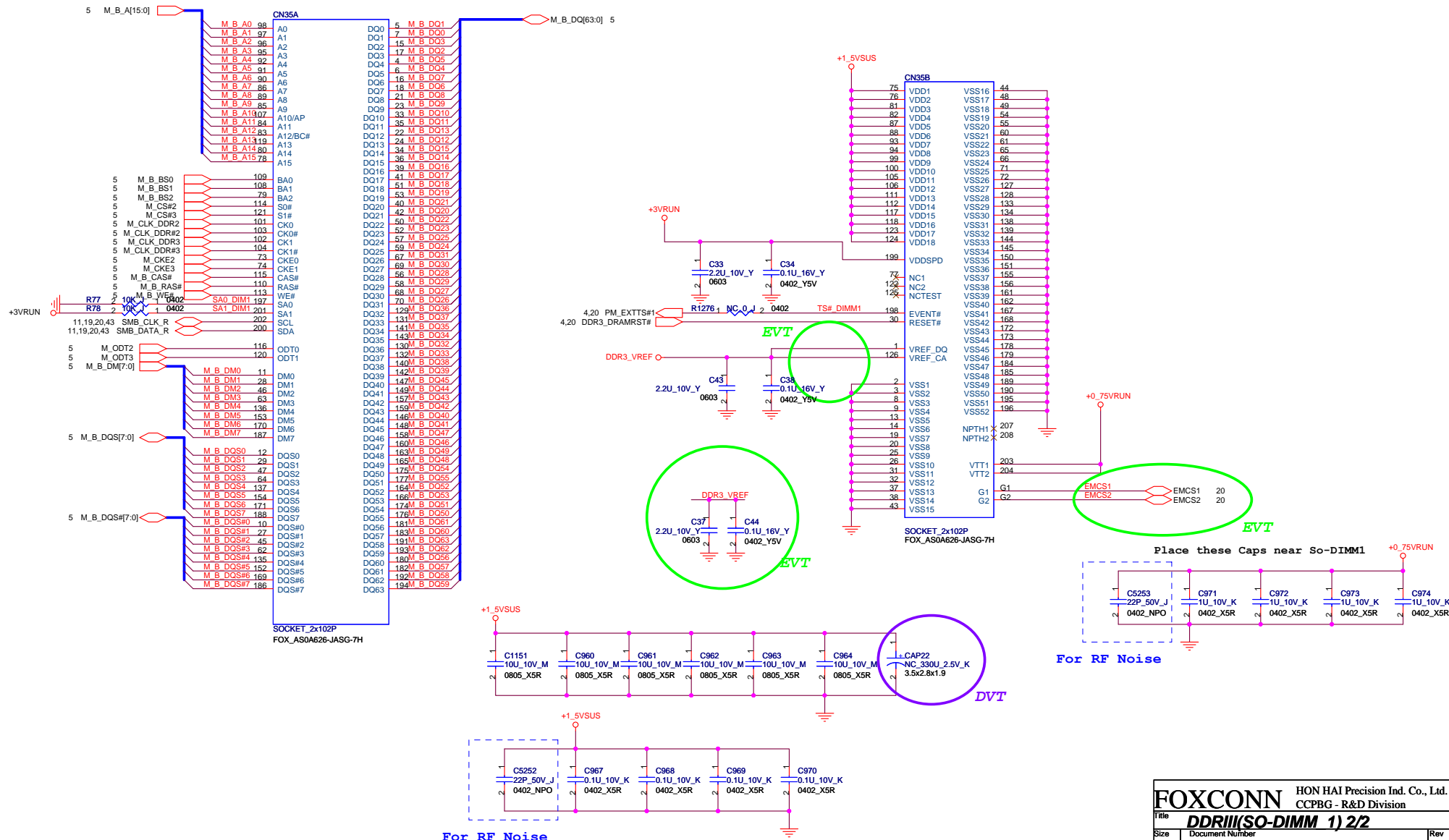


H:100 MHz  
L:133 MHz



09/11/17 R\_XTALSSIN be Connect a stable clock source  
(from clock gen SS 27MHz) to GPIO26\_TCK.









EVT

EVT

Strap for DDR3 VRAM  
ATI\_DVDPDATA[3 : 0]

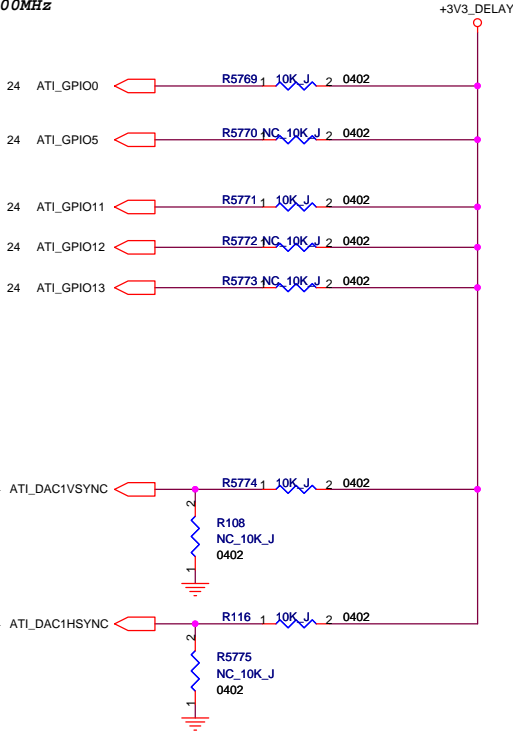
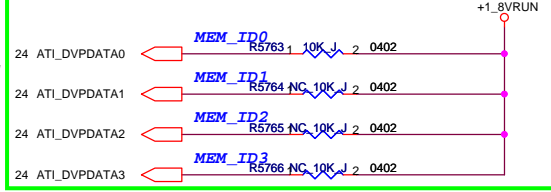
For M960/M970 M92-M2 XTX / Park-XT  
0001 64Mx16 Reserve x4pcs  
0010 64Mx16 Hynix \* x4pcs  
0011 64Mx16 Samsung\*\* x4pcs  
0101 64Mx16 Reserve x4pcs  
0110 64Mx16 Elpida\*\*\* x4pcs  
0111 64Mx16 AMD\*\*\*\* x4pcs

For M960/M970 Madsion-LP  
0001 64Mx16 Reserve x8pcs  
0010 64Mx16 Hynix \* x8pcs  
0011 64Mx16 Samsung\*\* x8pcs  
0101 64Mx16 Reserve x8pcs  
0110 64Mx16 Elpida\*\*\* x8pcs  
0111 64Mx16 AMD\*\*\*\* x8pcs  
P.S. \* means Hynix H5TQ1G63BFR-12C,800MHz  
\*\*means Samsung K4W1G1646E-HC12T00,800MHz  
\*\*\*means Elpida EDJ1116DBSE-DJ-F,1333MHz  
\*\*\*\*means AMD 23EY2387MA-12,800MHz

If no ROM attached, GPIO[13:12:11]  
CONFIG{2:0}  
controls the memory aperture size.  
64MB 010  
128MB 000  
256MB 001  
512MB 001

1 Enable HD Audio  
0 Disable HD Audio

1 Enable HDMI  
0 Disable HDMI

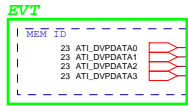


## CONFIGURATION STRAPS

ALLOW FOR PULLUP PADS FOR THESE STRAPS AND IF THESE GPIOs ARE USED,  
THEY MUST NOT CONFLICT DURING RESET

RECOMMENDED SETTINGS  
0= DO NOT INSTALL RESISTOR  
1 = INSTALL 10K RESISTOR  
X = DESIGN DEPENDANT  
NA = NOT APPLICABLE

| STRAPS                              | PIN name                      | DESCRIPTION OF DEFAULT SETTINGS   |  |
|-------------------------------------|-------------------------------|---|--|
| TX_PWRS_ENB                         | GPIO_0                        | Transmitter Power Savings Enable<br>0: 50% Tx output swing<br>1: Full Tx output swing   |  |
| TX_DEEMPH_EN                        | GPIO_1                        | PCI Express Transmitter De-emphasis Enable<br>0: Tx de-emphasis disabled<br>1: Tx de-emphasis enabled   |  |
| AC_BATT                             | GPIO_5                        | AC (Performance mode) = 3.3 V<br>Battery saving mode = 0.0 V  |  |
| PWRCNTL_0<br>PWRCNTL_1              | GPIO_6<br>GPIO_15<br>GPIO_20  | Power Control signals control the core voltage regulator.<br>At Reset, these signals will be inputs with weak internal pull-down resistors.<br>VBios can define these signals to be either 3.3-V outputs or open drain outputs.<br>The output state (high/low) of these signals is programmable for each PowerPlay state. |  |
| BB_EN                               | GPIO_21                       | Back Bias (BB) control:<br>When GPIO_21_BB_EN = 0 V, then back bias is disabled on the PCB (i.e. BPP = VDDC).<br>When GPIO_21_BB_EN = 3.3 V, then back bias is enabled on the PCB (i.e. BPP = VDDC + Offset).<br>Can function as a GPIO if not required for BB control.   |  |
| BLON                                | GPIO_7                        | Controls Backlight On/Off.<br>Active high.<br>If not needed as the backlight enable signal, it can alternatively be used as a GPIO or an open drain type output.<br>Note: External pull-down recommended  |  |
| VGA_DIS                             | GPIO_9                        | 0: VGA Controller capacity enabled<br>1: The device will not be recognized as the system's VGA controller   |  |
| CONFIG[0]<br>CONFIG[1]<br>CONFIG[2] | GPIO_11<br>GPIO_12<br>GPIO_13 | If BIOS_ROM_EN = 0, then Config[2:0] defines the primary memory aperture size.  |  |
| BIOS_ROM_EN                         | GPIO_22                       | Enable external BIOS ROM device<br>0: Disable external BIOS ROM device<br>1: Enable external BIOS ROM device  |  |
| SSIN                                | GPIO_16                       | Spread Spectrum clock input for memory clock and/or engine clock (maximum down spread of -2.5%). Requires a spread version of 27 MHz(The modulation rate is 30-50 KHz.)   |  |
| THERMAL_INT                         | GPIO_17                       | Thermal monitor interrupt Can be set as either:<br>1) An input from an external temperature sensor (ALERTb) , or<br>2) An output signaling that the ASIC temp (measured by the internal sensor) is above the high threshold or below the low threshold.Output can be open drain or 3.3-V output.(active low by default)   |  |
| CLKREQB                             | GPIO_23                       | Reserve   |  |

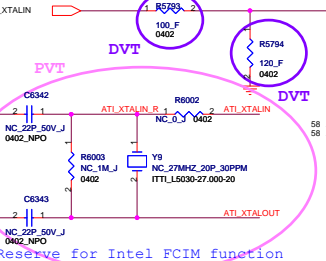


Ball AML7:  
For M96 this pin can be not used.  
For M97-M2 When PWRGOOD is deasserted, the CTF will return to its default state (high impedance)  
For Park-M2 and Madison-M2:  
GPIO\_19 CTF has an internal latch, such that if the pad has been operating normally, and then the internal PWRGOOD deasserts (because CTF was triggered), the GPIO\_19 will continue to drive high to keep the VDDC regulator shut down.  
Clearing this state will require power-cycling of the VDDR3 rail.

These two can be unused on M96,M97, Madison and Park.  
Ball AH26:  
For M97-M2 GENERICF (no HPD function).  
For Park-M2 NC.  
For Madison-M2 GENERICF can provide HPD5 function.  
Ball AH24:  
For M97-M2 GENERICF (no HPD function).  
For Park-M2 NC.  
For Madison-M2 GENERICF can provide HPD6 function.

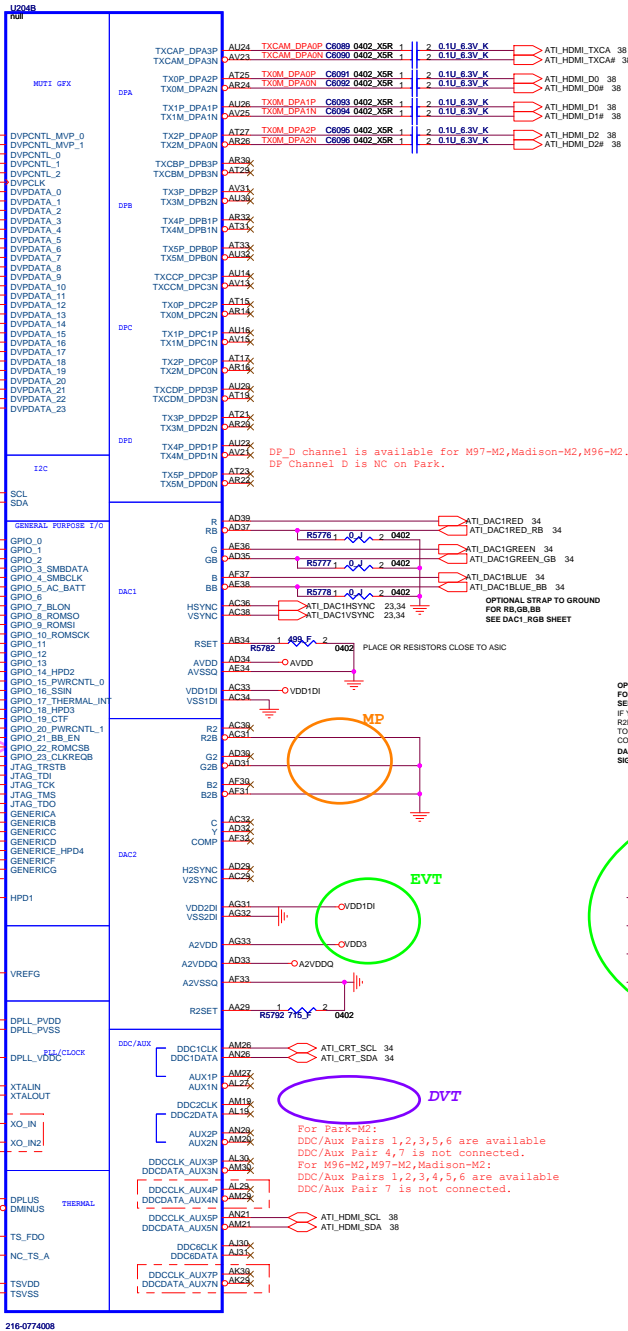
09/11/17 Connect a stable clock source (from clock gen SS 27MHz) to GPIO26\_TCK.

DEPENDENT ON OSC USED  
SELECT VOLTAGE DIVIDER  
RESISTOR VALUES C AND B  
TO ENSURE XTALIN VOLTAGE  
LEVEL OF 1.8V



Reserve for Intel FCIM function

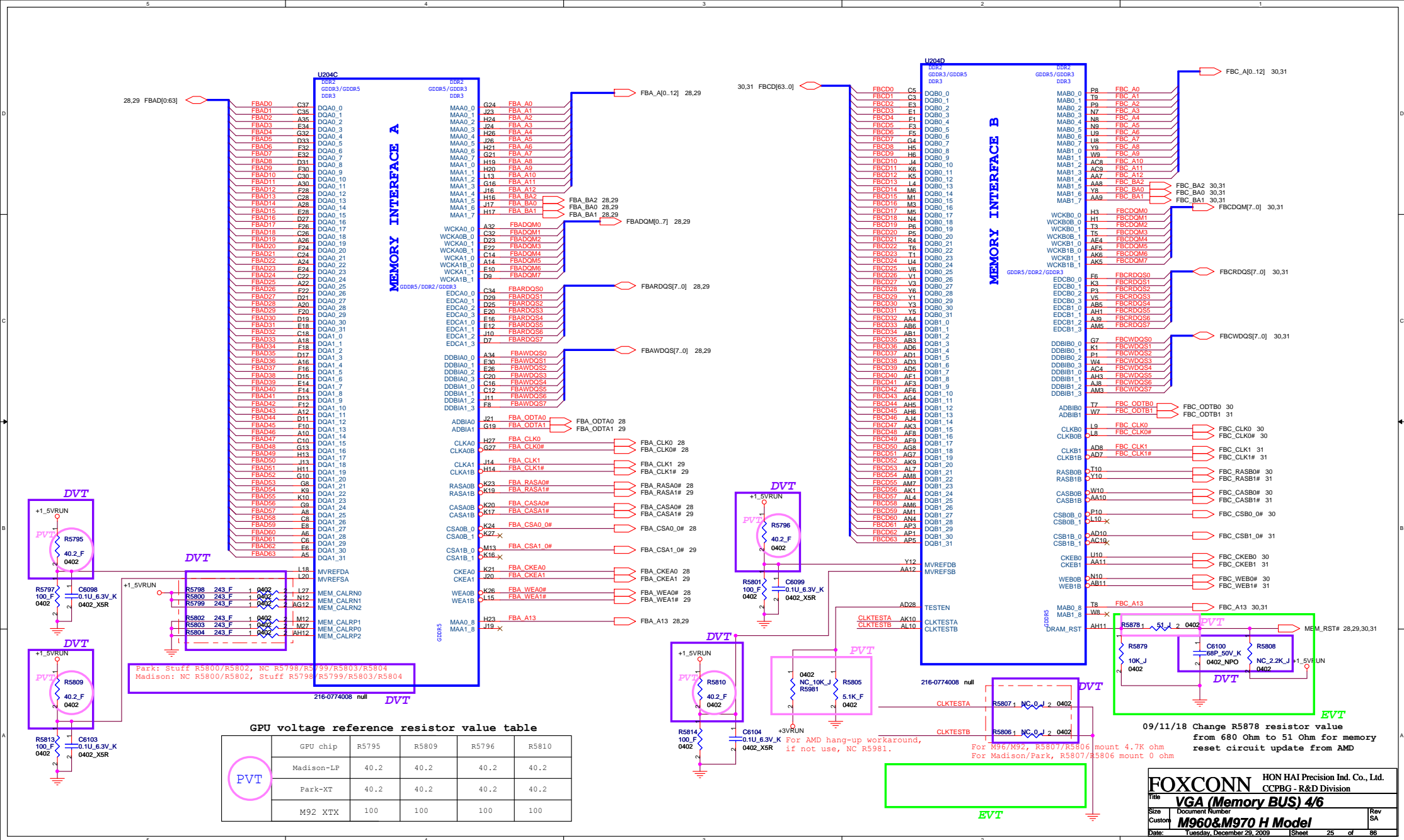
For M96 these two pins connect to GND.  
GND Option If XO\_IN/XO\_IN2 not used  
Ball AW34:  
For M97-M2 GND  
For Madison-M2 and Park-M2 27MHz oscillator can be reserved.  
Ball AW35:  
For M97-M2 DPE\_VSSR  
For Madison-M2 and Park-M2 100MHz oscillator can be reserved.

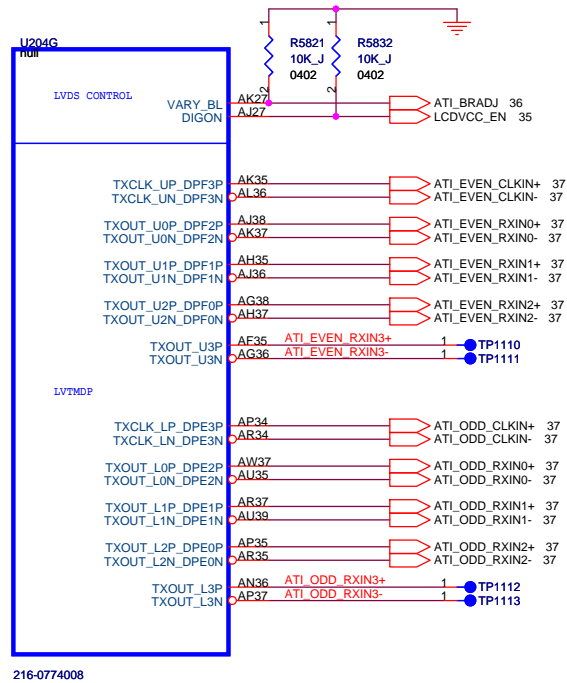


DP D channel is available for M97-M2, Madison-M2, M96-M2.  
DP Channel D is NC on Park.

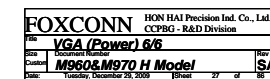
OPTIONAL STRAP TO GROUND  
FOR R26.G2B.B2B  
SEE DAC1, RGB SHEET  
IF Y.C.COMP OR R2.G2B.B2B ARE USED  
R26.G2B.B2B MUST BE CONNECTED  
TO GROUND OR TERMINATED AT  
CONNECTOR  
DAC2 CAN BE TV SIGNALS (C.Y.COMP) OR SECONDARY CRT (R2.B2.G2  
SIGNALS AS CONTROLLED BY AN INTERNAL MUX

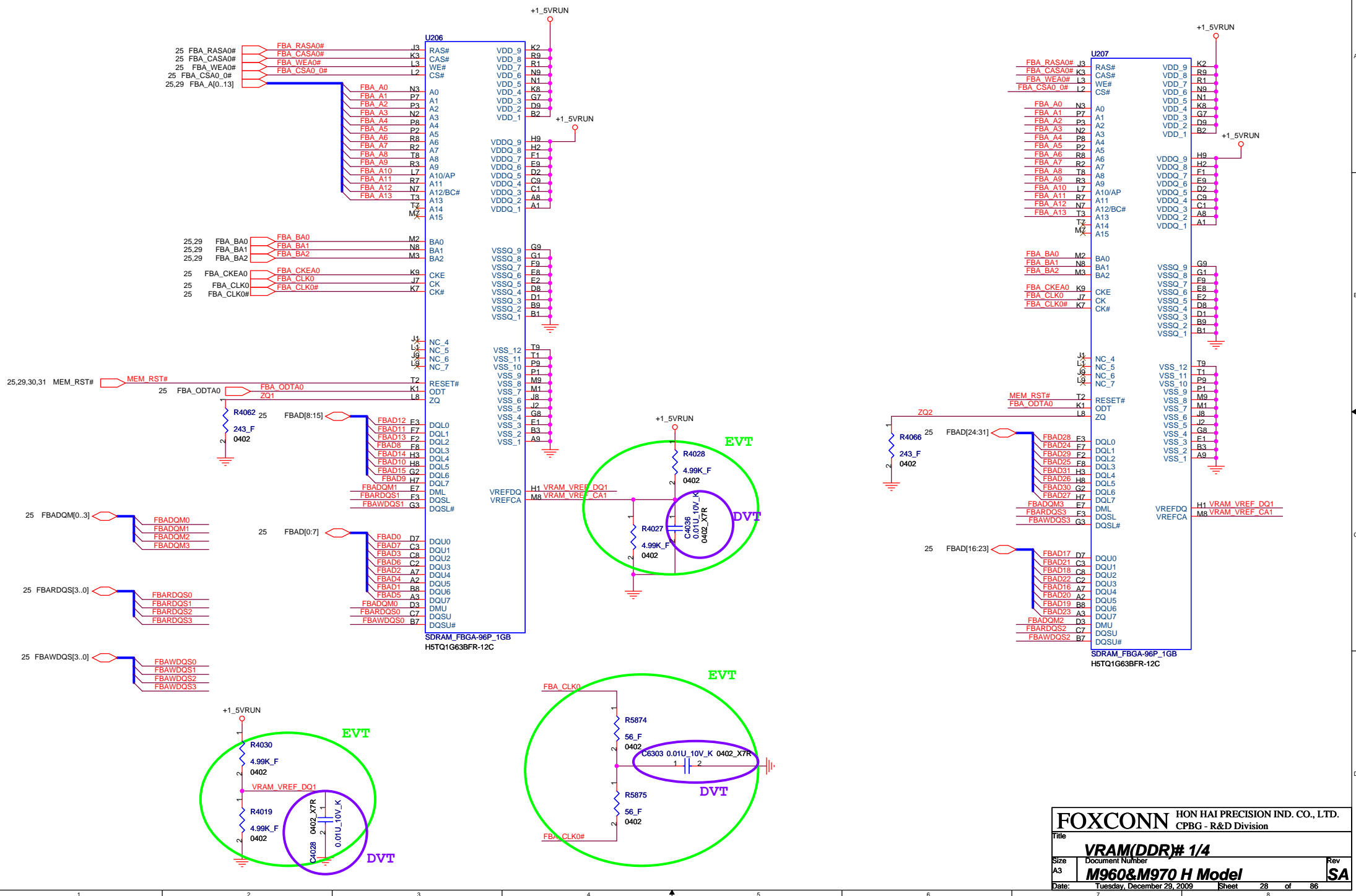
09/11/17 Add 5991 pull-down with 10K ohm to ground for the Park/Madison JTAG test block  
intermittently fails to initialize correctly. Incorrect initialization may  
result in a failure to boot.





TXCLK =U=EVEN  
TXOUT=U=EVEN  
TXCLK =L=ODD  
TXOUT=L=ODD

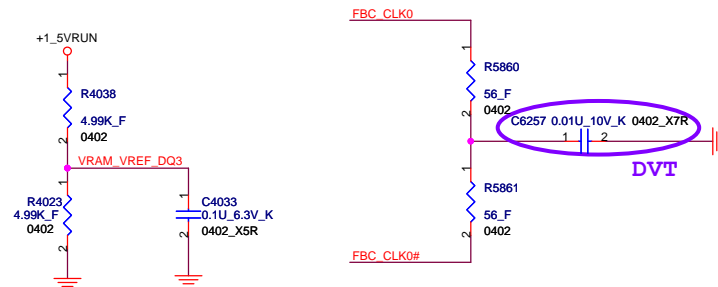
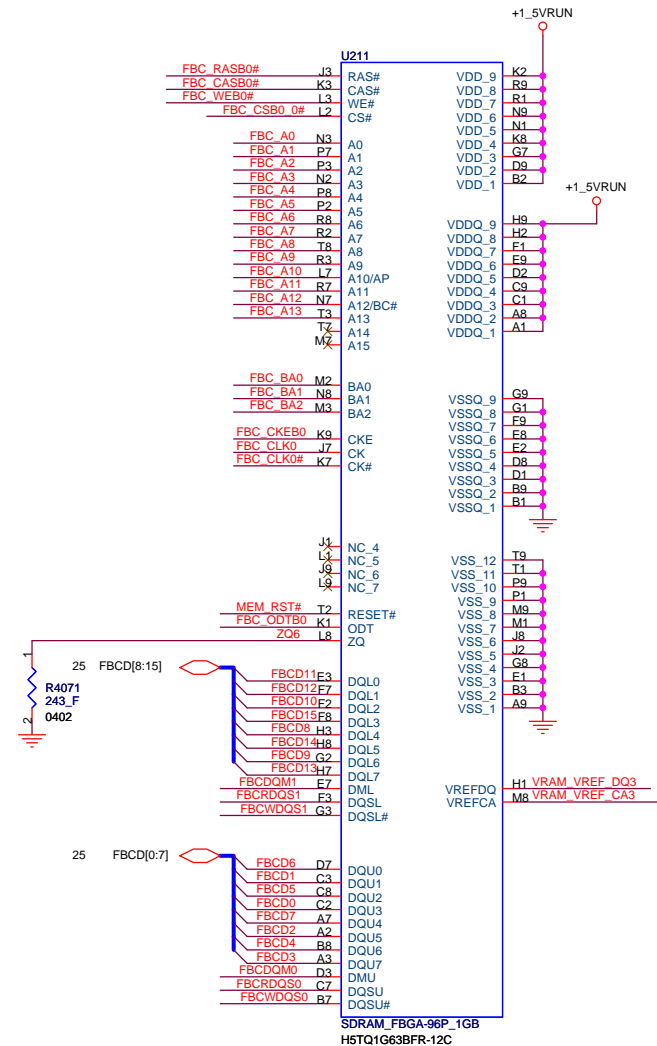
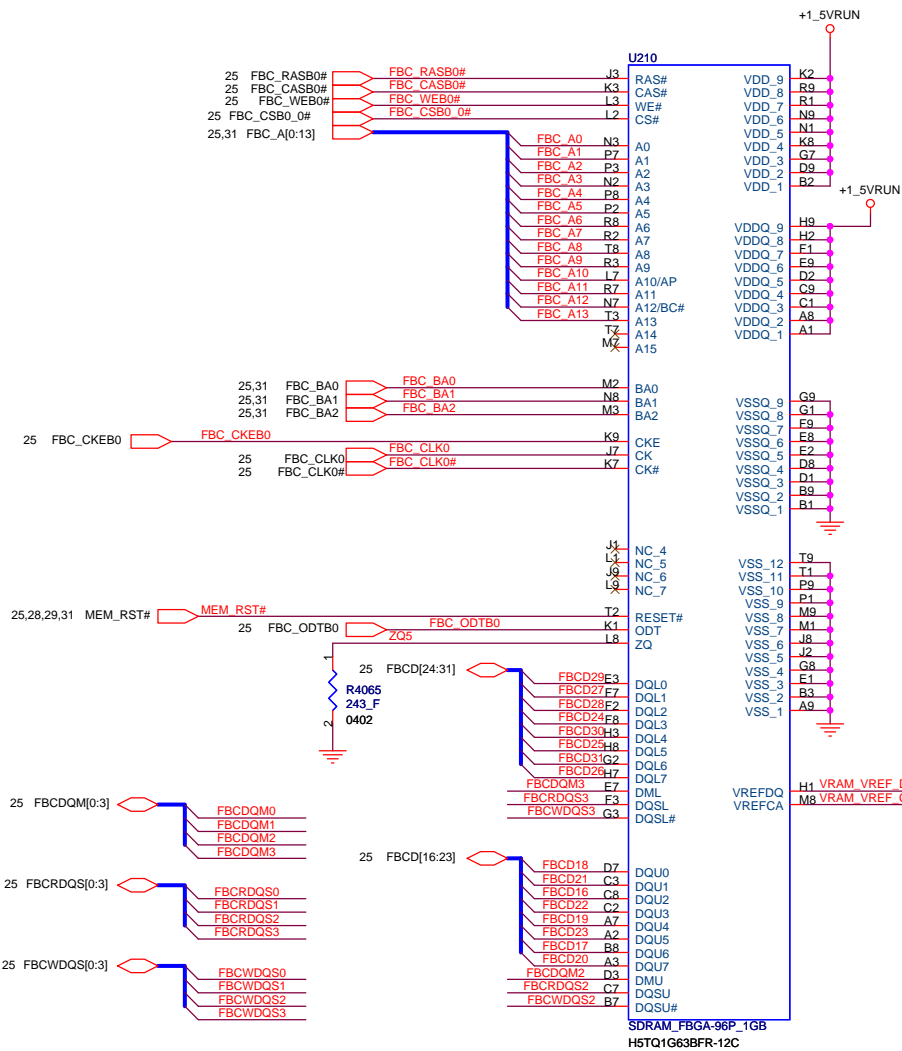


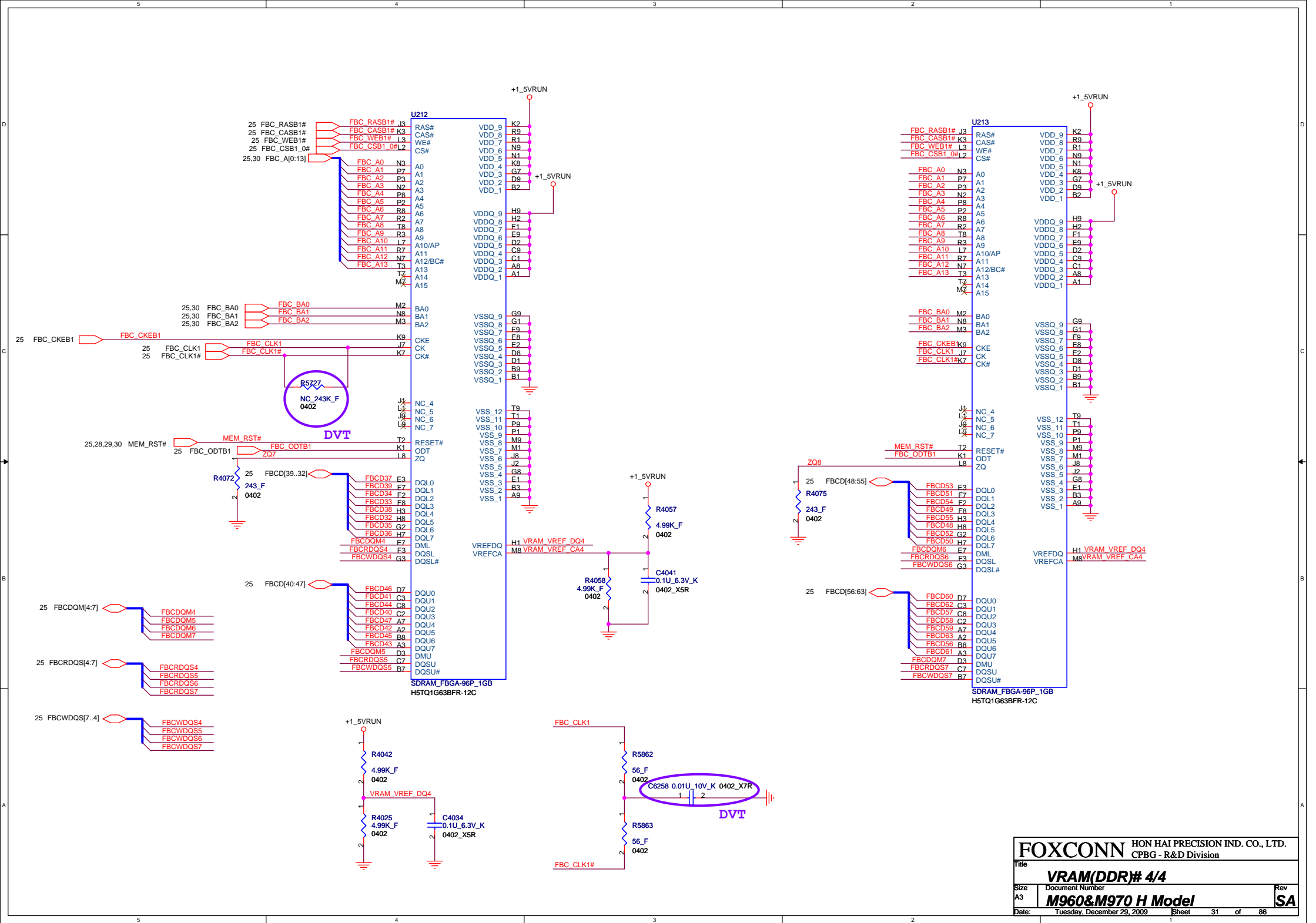




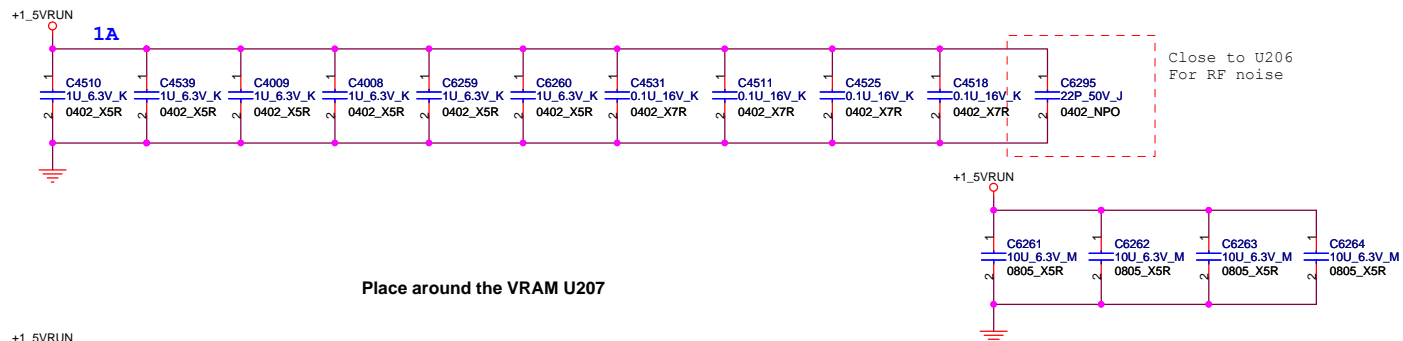




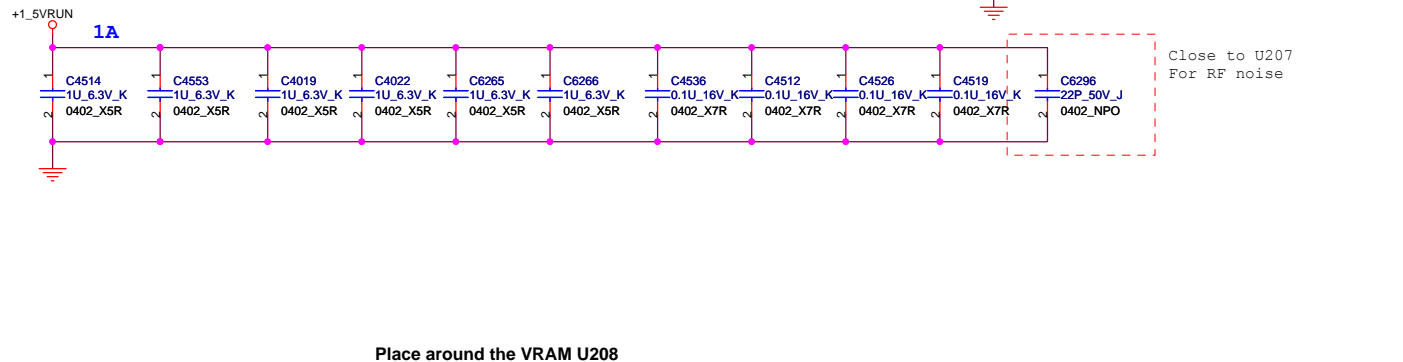




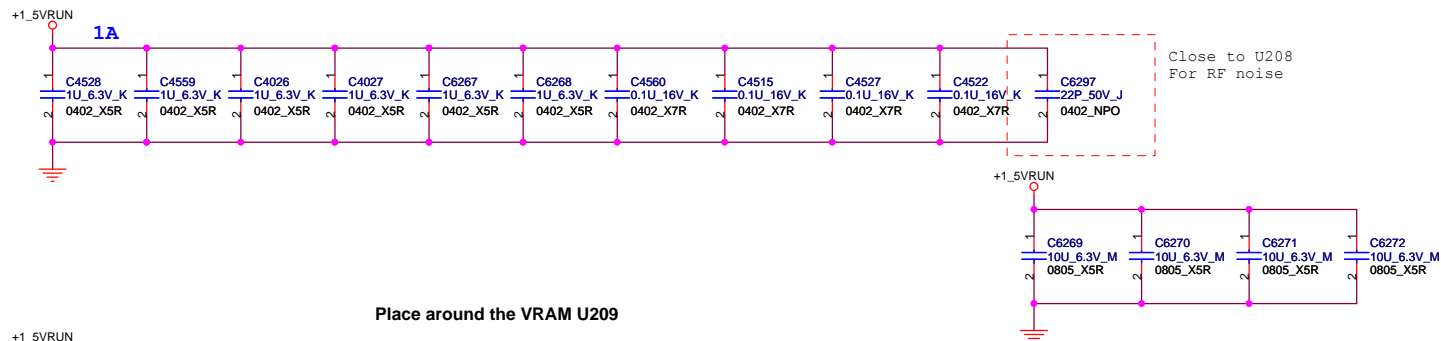
### Place around the VRAM U206



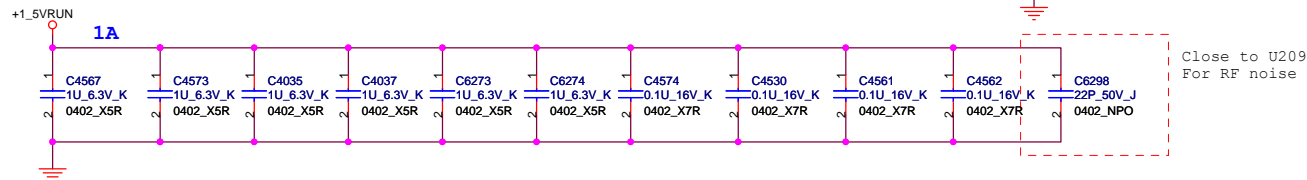
### Place around the VRAM U207



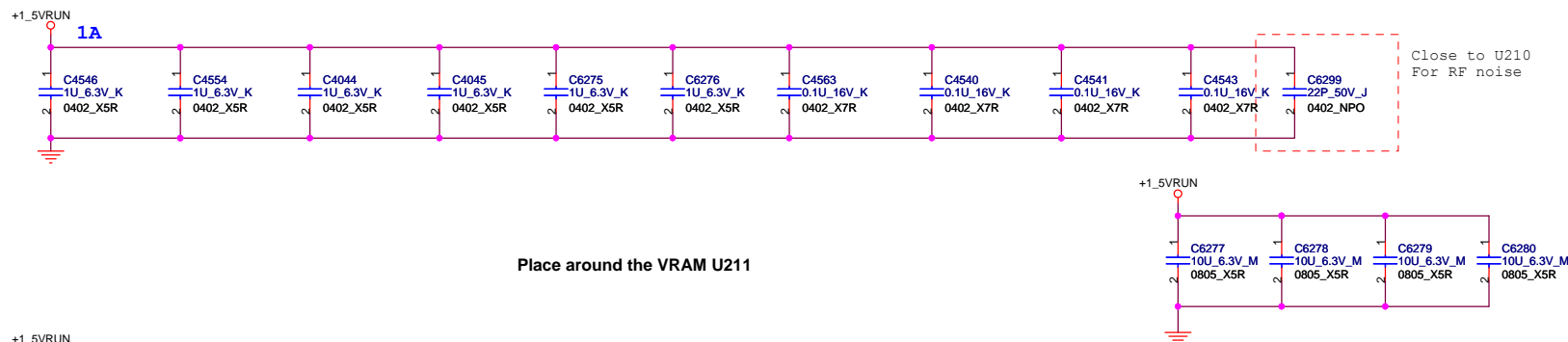
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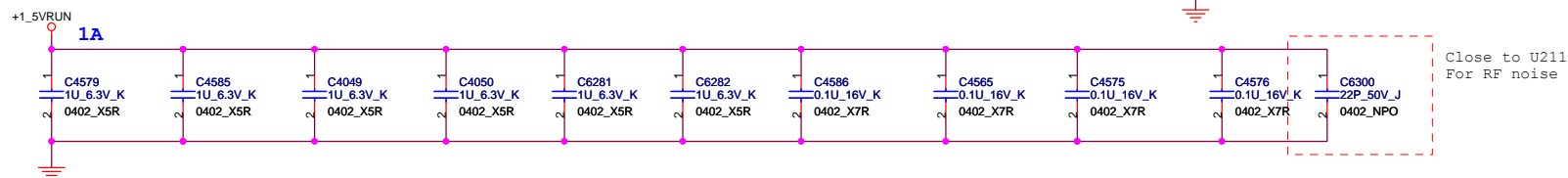
### Place around the VRAM U209



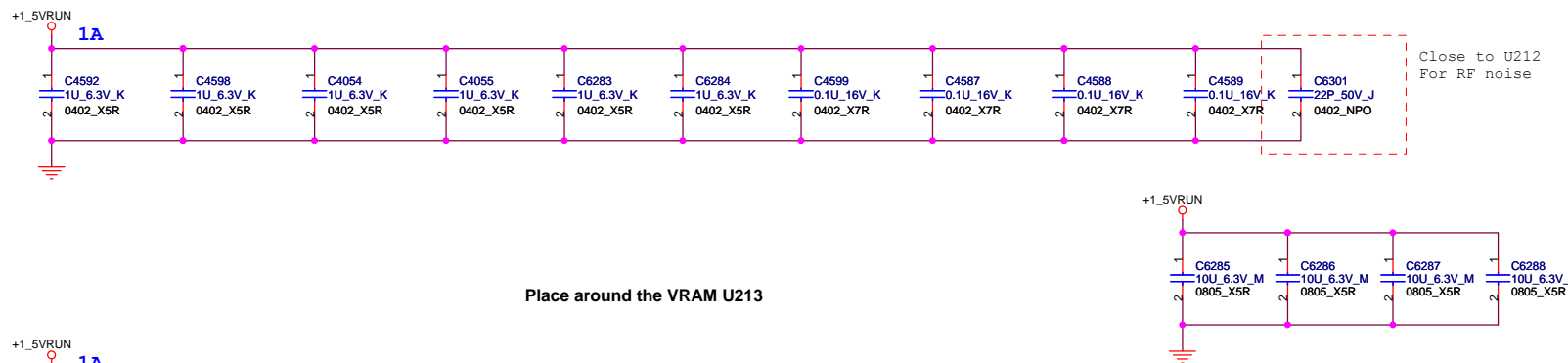
### Place around the VRAM U210



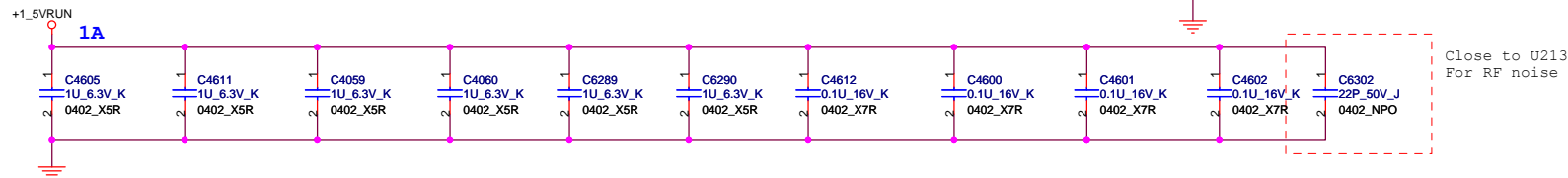
### Place around the VRAM U211



### Place around the VRAM U212



### Place around the VRAM U213



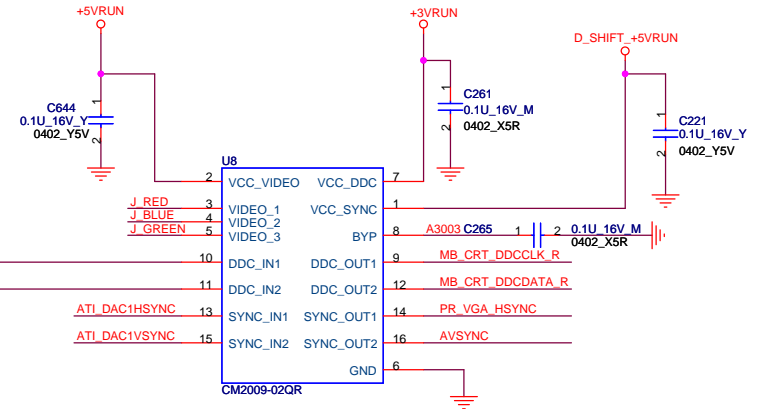
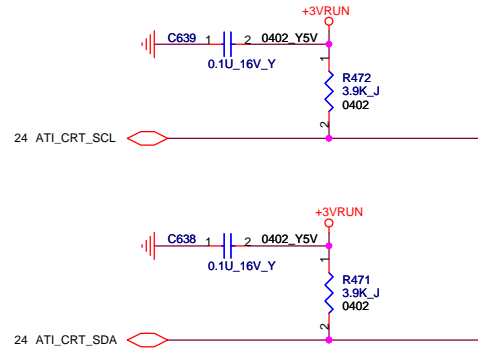
24 ATI\_DAC1RED

24 ATI\_DAC1GREEN

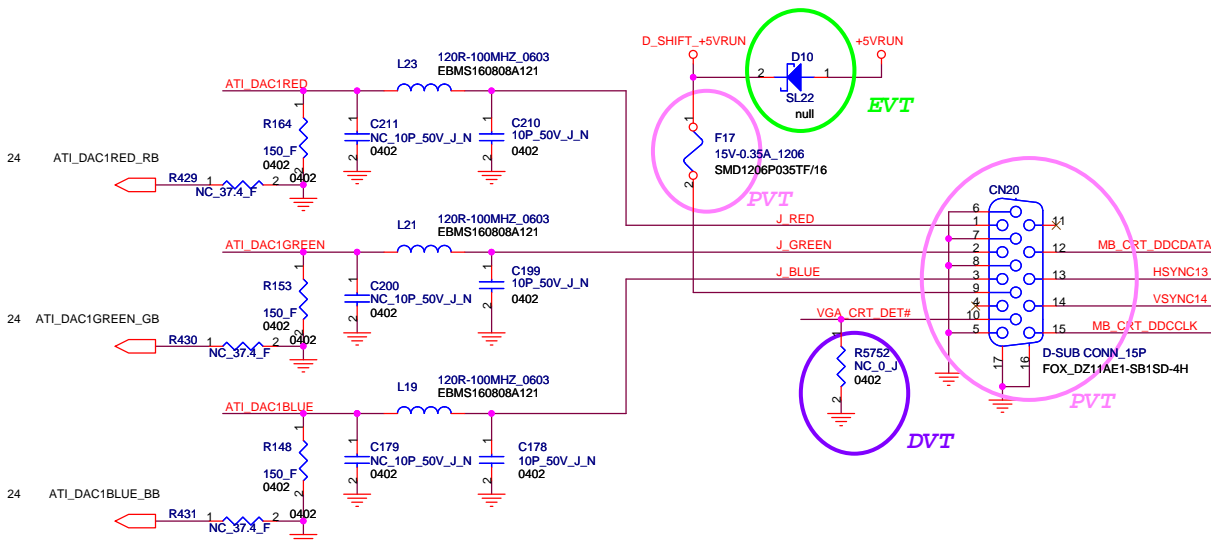
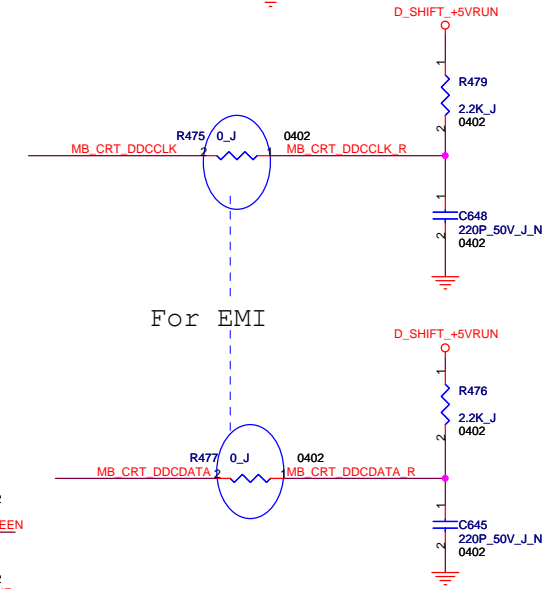
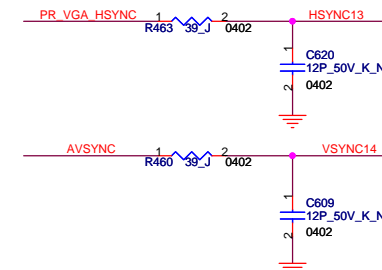
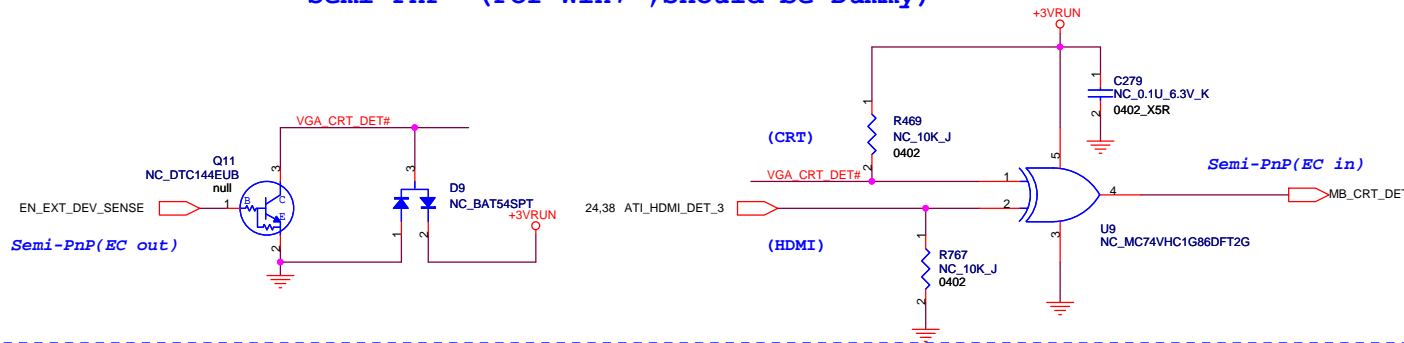
24 ATI\_DAC1BLUE

23,24 ATI\_DAC1VSYNC

23,24 ATI\_DAC1HSYNC

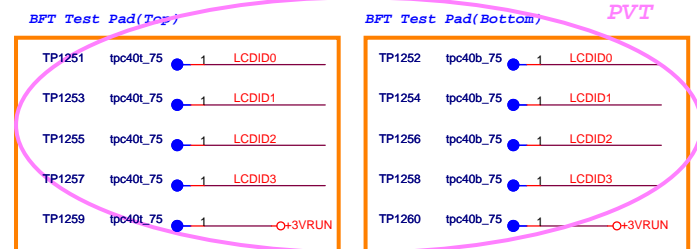
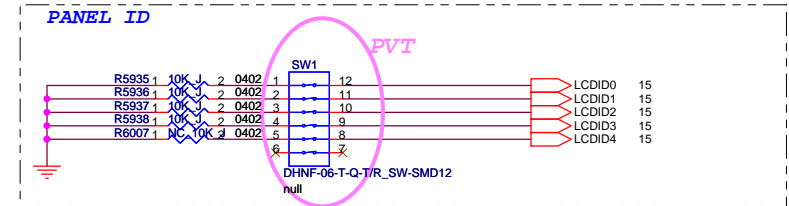
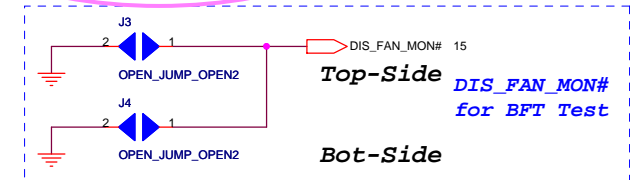
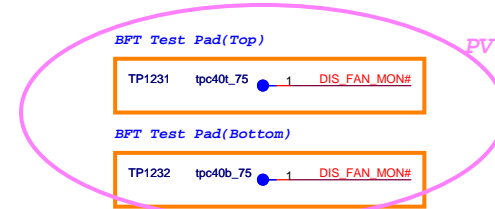
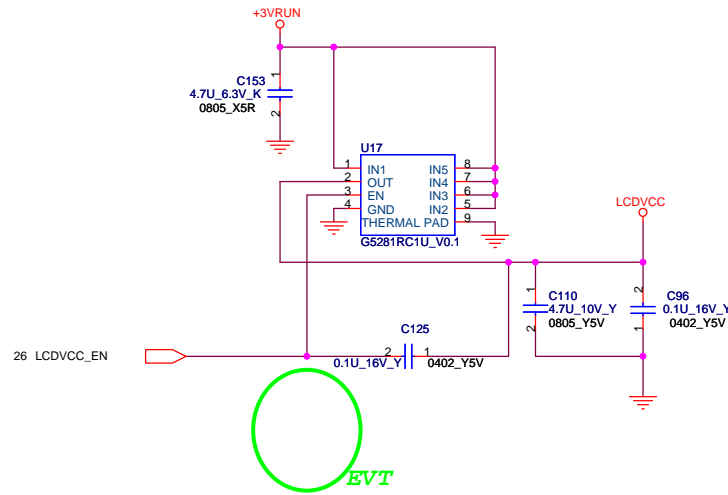


**Semi-PnP (For Win7 ,Should be Dummy)**



**CRT CONNECTOR**

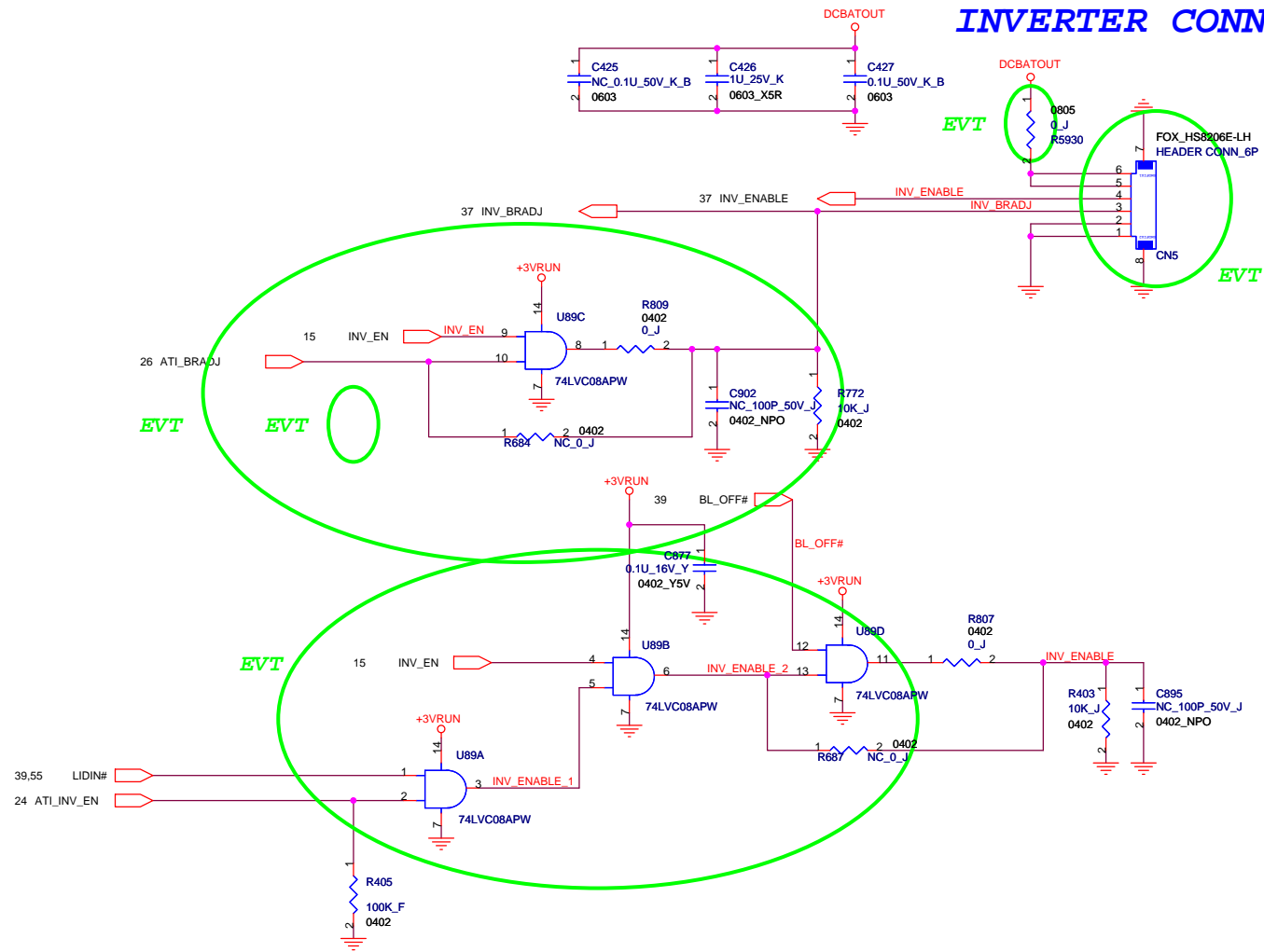
# LVDS



PANEL ID


| Type                 |        | LED      | LED        | LED      | LED      | 1        | 1            | 1          | LED      | LED          | LED      |
|----------------------|--------|----------|------------|----------|----------|----------|--------------|------------|----------|--------------|----------|
| Size                 | 14     | 14       | 14         | 14       | 14       | 15.5     | 15.5         | 15.5       | 15.5     | 17.3         | 17.3     |
| Vendor               | No LCD | AUO      | Samsung    | LGD      | AUO      | LGD      | CPT          | Samsung    | LGD      | CPT          | AUO      |
| Model Name           |        | B140XW02 | LTN140AT08 | LP140WH2 | B140RW02 | LP156WH1 | CLAA156WA01A | LTN156AT01 | LP156WF1 | CLAA173UA01A | B173HW01 |
| Panel ID [4.3.2.1.0] | 00000  | 00001    | 00010      | 00011    | 00100    | 00110    | 00111        | 01000      | 01001    | 01011        | 01100    |

# INVERTER CONNECTOR



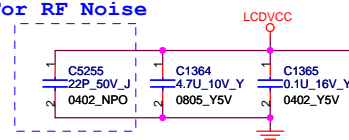


Timing diagram for the ATI ODD RXIN0-3 and ATI EVEN RXIN0-3 signals. The diagram shows the relationship between the input signals and the internal clock signals (C6306, C6307, C6308, C6309, C6310, C6311, C6312, C6313) and the output signals (0201\_NPO). The signals are labeled as ATI\_ODD\_RXIN0-, ATI\_ODD\_RXIN0+, ATI\_ODD\_RXIN1-, ATI\_ODD\_RXIN1+, ATI\_ODD\_RXIN2-, ATI\_ODD\_RXIN2+, ATI\_ODD\_CLKIN-, ATI\_ODD\_CLKIN+, ATI\_EVEN\_RXIN0-, ATI\_EVEN\_RXIN0+, ATI\_EVEN\_RXIN1-, ATI\_EVEN\_RXIN1+, ATI\_EVEN\_RXIN2-, ATI\_EVEN\_RXIN2+, and ATI\_EVEN\_CLKIN-. The output signals are labeled as 0201\_NPO. The diagram is enclosed in a green oval with the label 'EVT' in green text at the top right.



*EVT*

### For RF Noise



For rush current issue

DCBATOUT

R5736 47K\_J 0402

R5737 47K\_J 0402

C575 0.1uF 50V\_K\_B 0603

L99 NC\_600R-100MHZ\_0805

Q177 SI2303BDS

C6305 0.1uF 50V\_K\_B 0603

F15 32V-2A\_0603 467002

DCBATOUT\_L

DVT

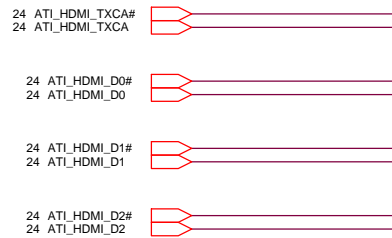
*DVT*



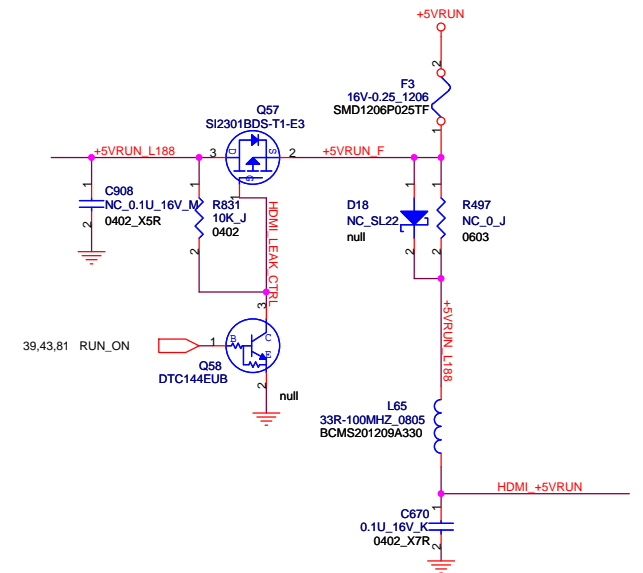
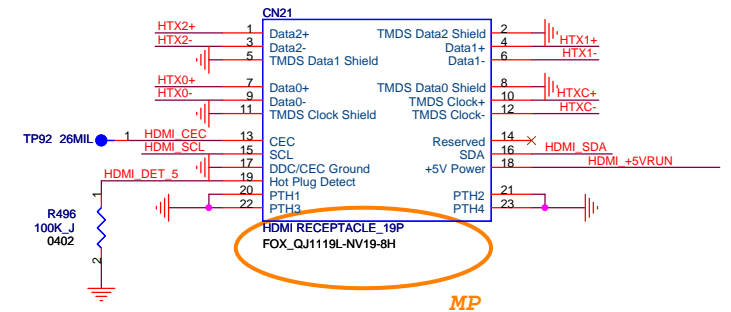
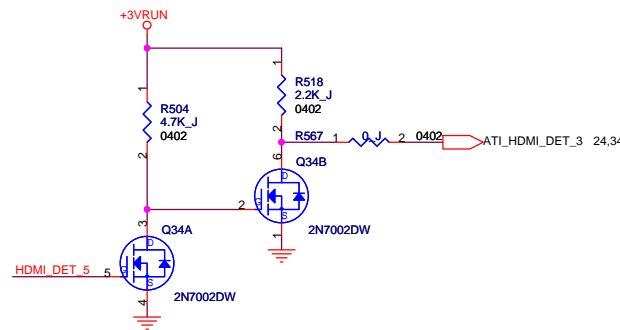
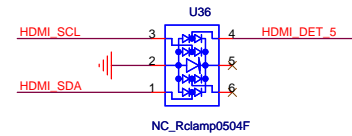
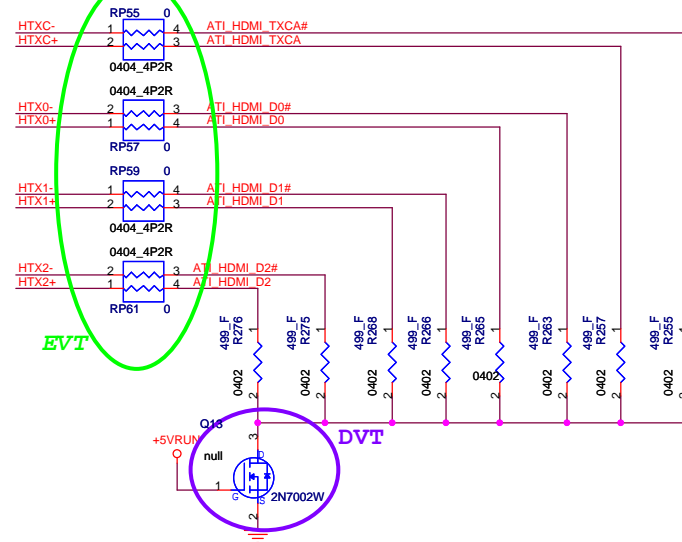
DVT

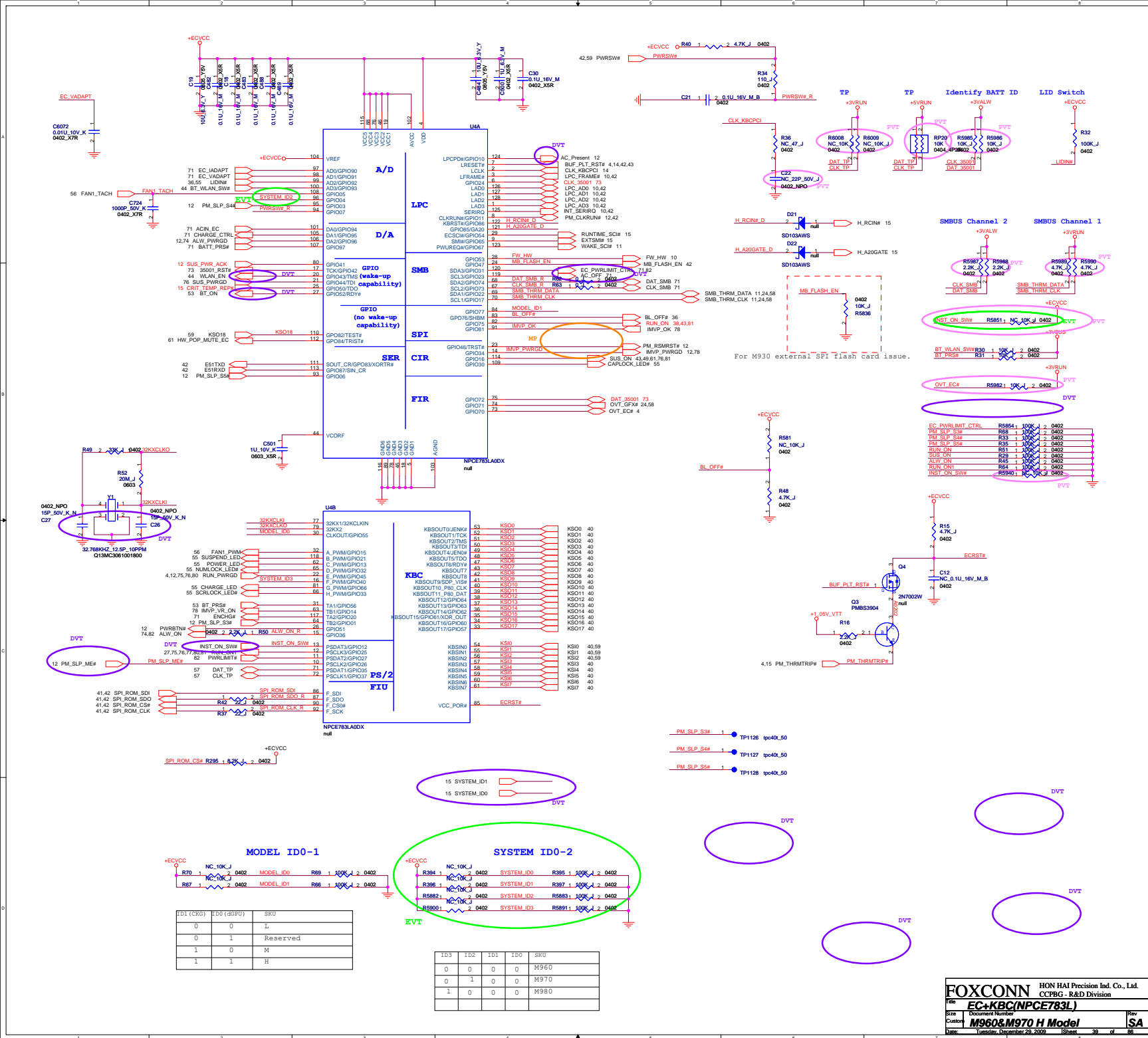
35  
36  
37  
38  
39  
40

Close to CN13



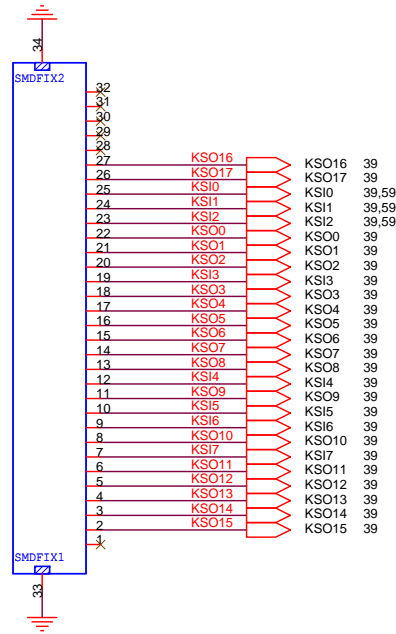
Data line capacitance to GND need less than 10pF,  
so those parts need close to HDMI connector



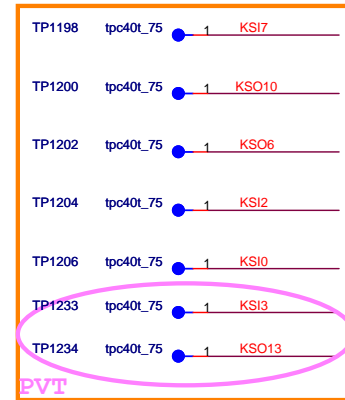


# KBC Conn

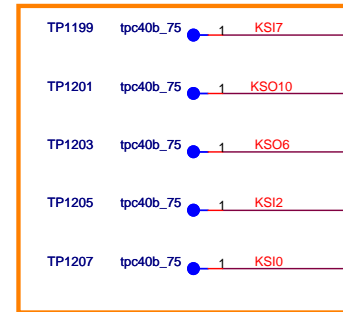
CN38  
FPC CONN\_32P  
FOX\_GB1SH320-1280-7H



BFT Test Pad(Top)

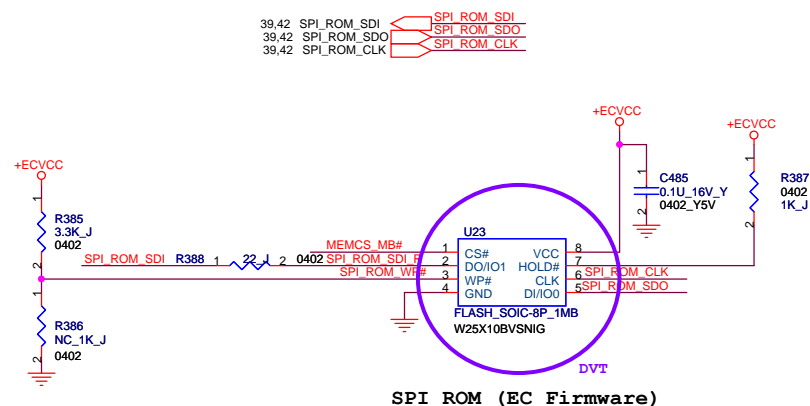


BFT Test Pad(Bottom)



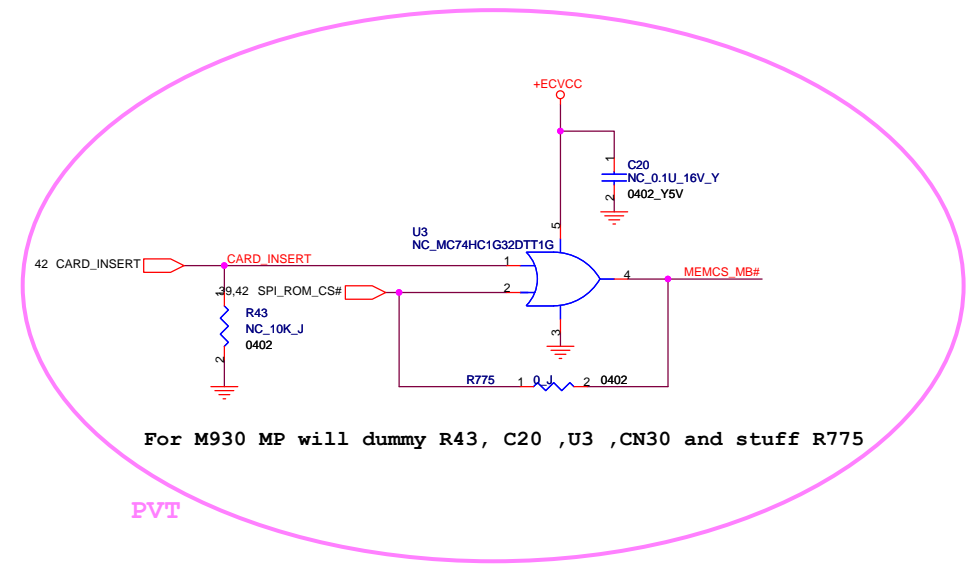
EVT

|                |                              |                                  |           |
|----------------|------------------------------|----------------------------------|-----------|
| <b>FOXCONN</b> |                              | HON HAI Precision Ind. Co., Ltd. |           |
|                |                              | CCPBG - R&D Division             |           |
| Title          | <b>KB Connector</b>          |                                  |           |
| Size           | Document Number              |                                  | Rev       |
| B              | <b>M960&amp;M970 H Model</b> |                                  | <b>SA</b> |
| Date:          | Tuesday, December 29, 2009   | Sheet                            | 40 of 86  |

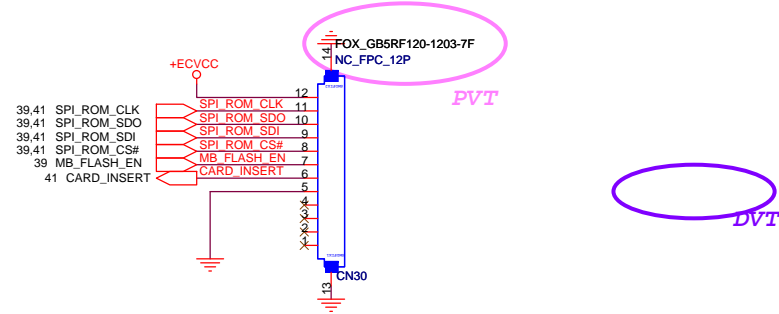


SPI ROM (EC Firmware)

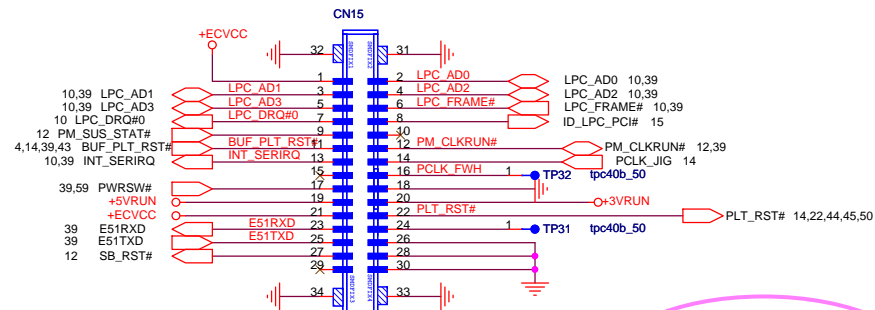
SPI ROM (EC Firmware) (1Mb)



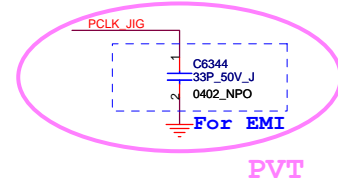
For M930 MP will dummy R43, C20 ,U3 ,CN30 and stuff R775



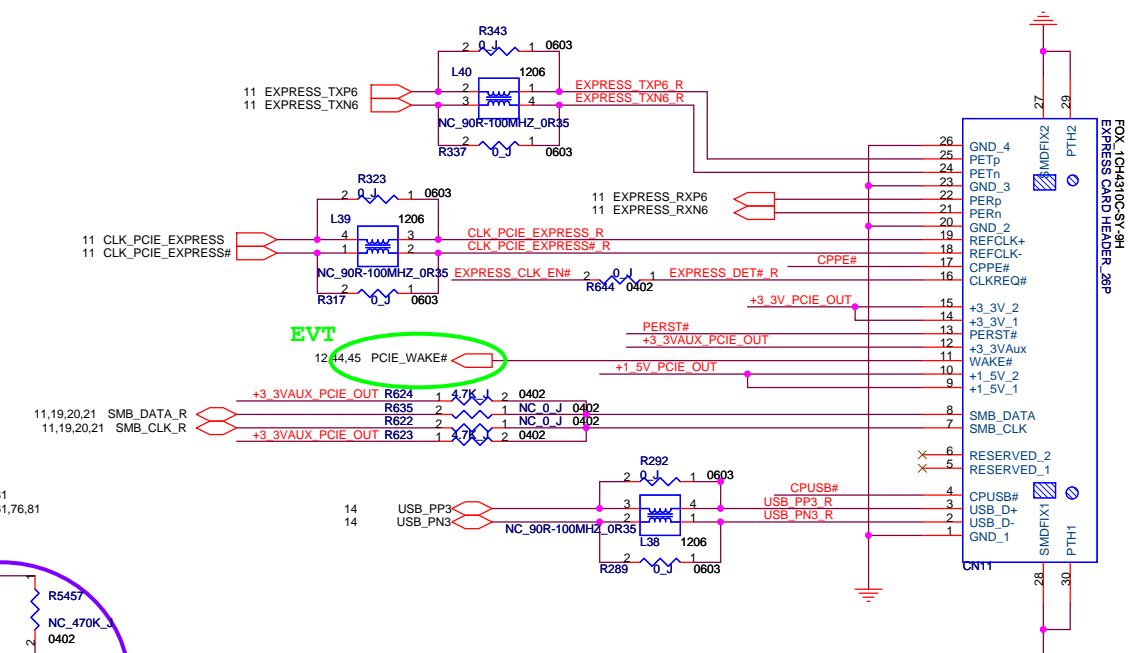
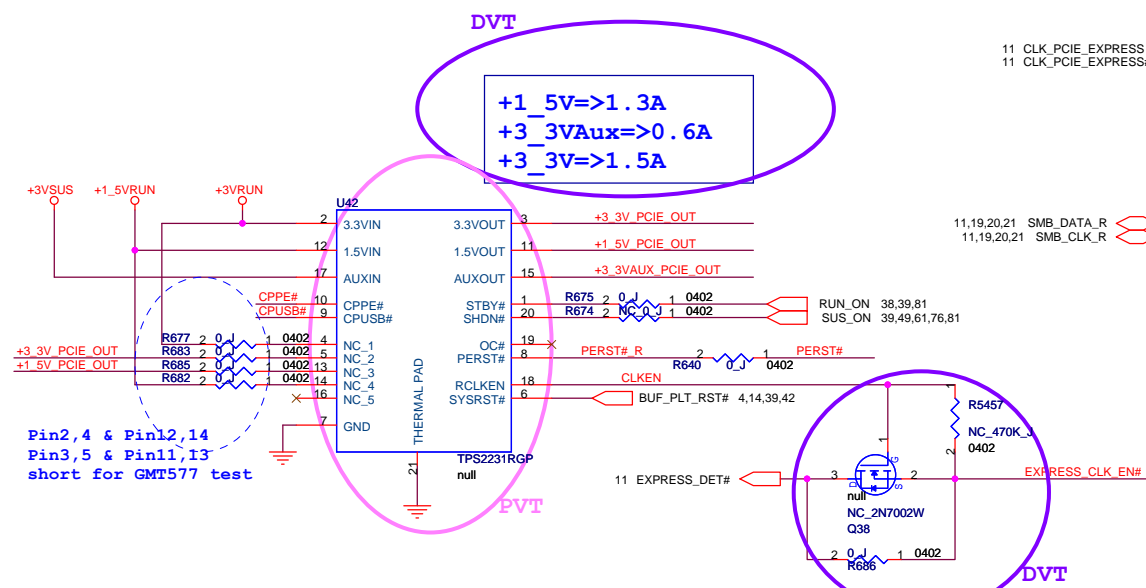
EXTERNAL SPI ROM INTERFACE (EC)



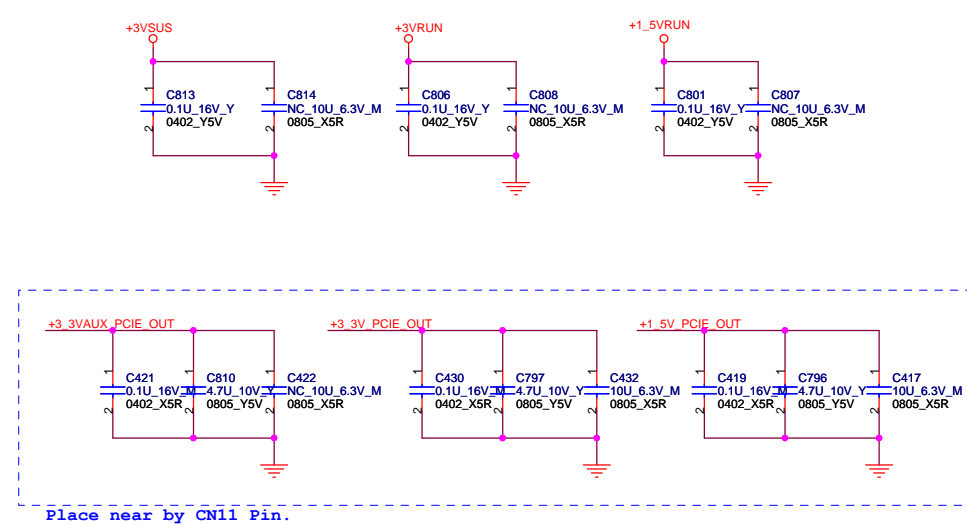
JIG-120



PVT



Express Card Slot.



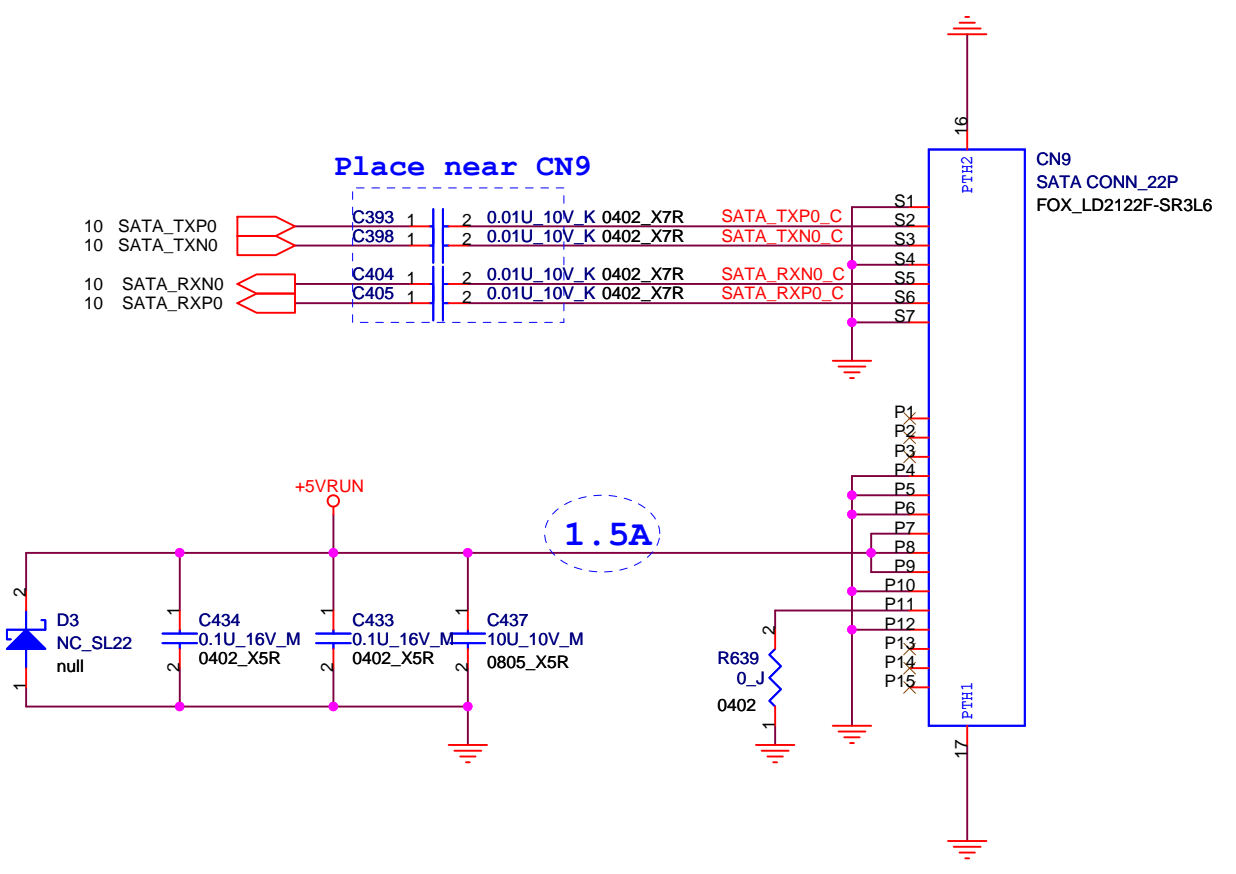
Express Card Housing.



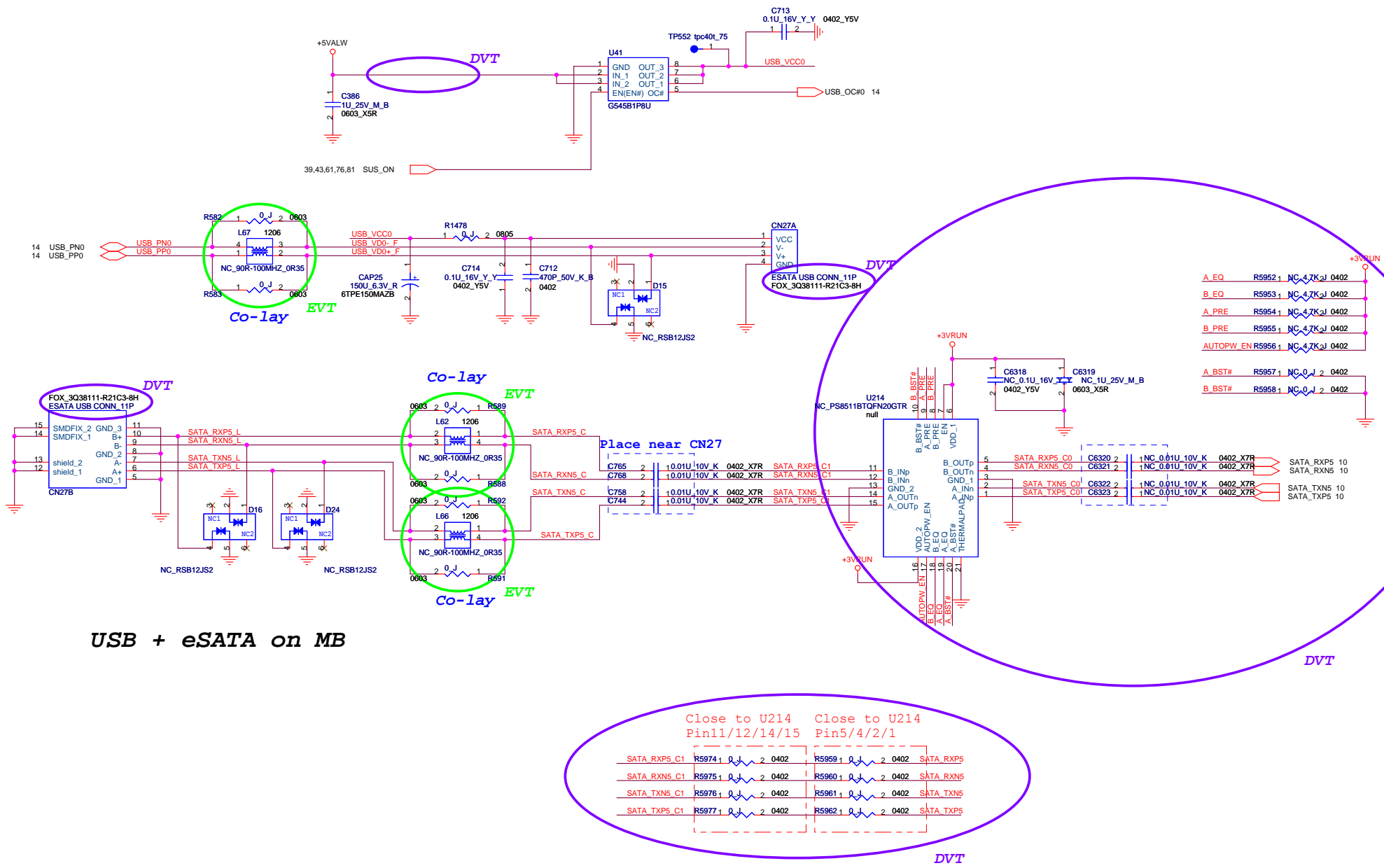












# USB + eSATA on MB

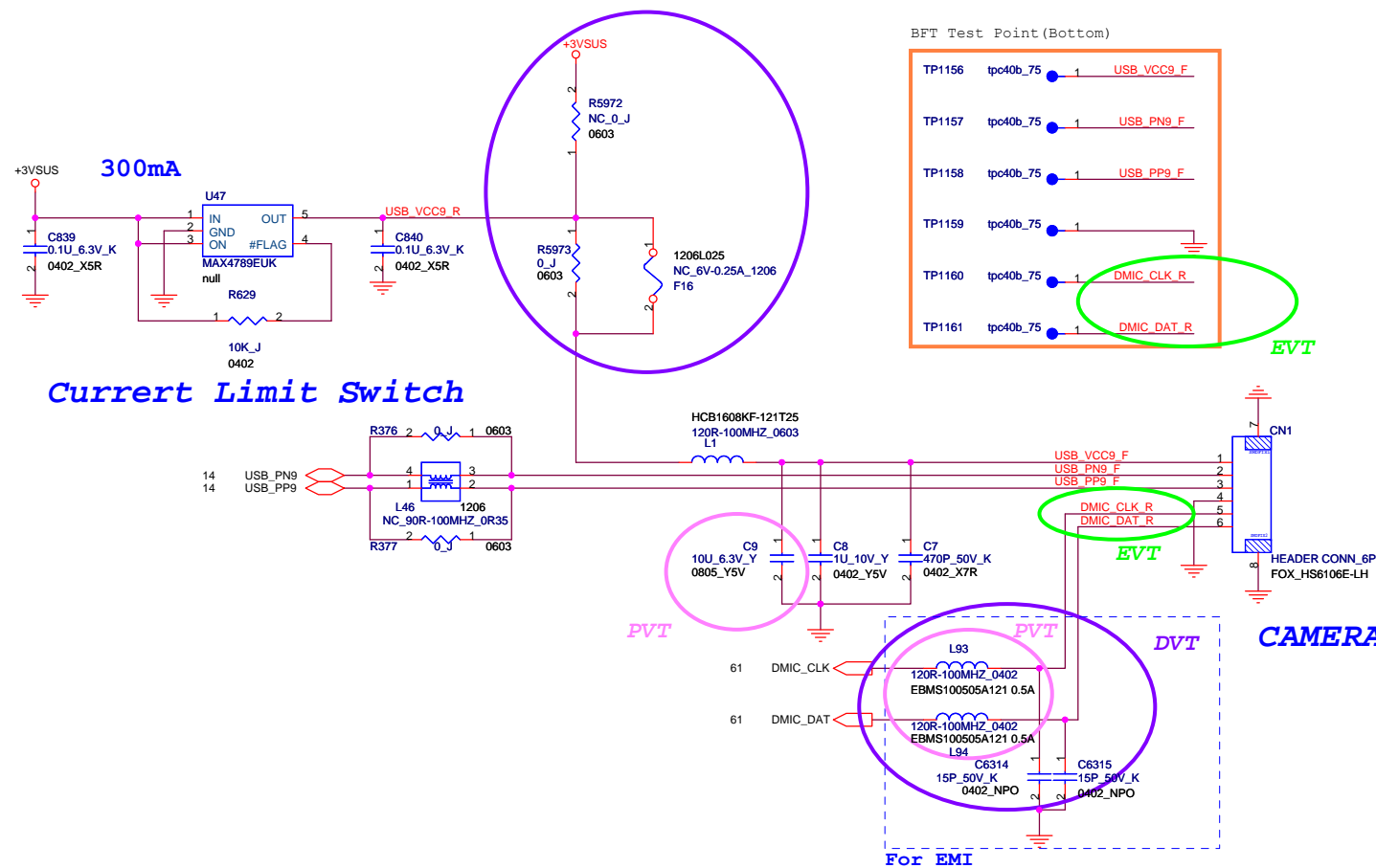
Close to U214 Pin11/12/14/15  
Close to U214 Pin5/4/2/1

|              |       |   |   |      |       |   |   |      |           |
|--------------|-------|---|---|------|-------|---|---|------|-----------|
| SATA_RXP5_C1 | R5974 | 0 | 2 | 0402 | R5959 | 0 | 2 | 0402 | SATA_RXP5 |
| SATA_RXN5_C1 | R5975 | 0 | 2 | 0402 | R5960 | 0 | 2 | 0402 | SATA_RXN5 |
| SATA_TXN5_C1 | R5976 | 0 | 2 | 0402 | R5961 | 0 | 2 | 0402 | SATA_TXN5 |
| SATA_TXP5_C1 | R5977 | 0 | 2 | 0402 | R5962 | 0 | 2 | 0402 | SATA_TXP5 |

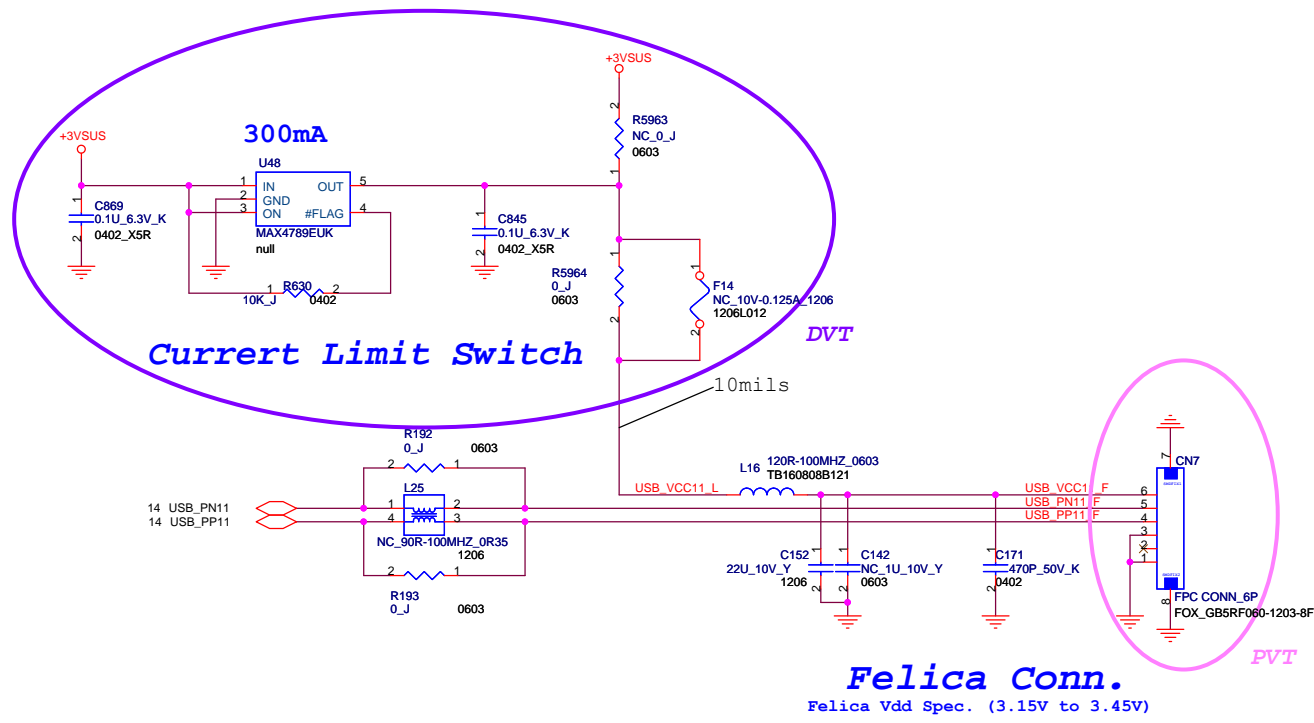












Power Test Test Point (Top)

Power Test Test Point (Top)

Power Test Test Point (Top)

PVT

BFT Test Point (Top)

PVT

TP1227 tpc60t\_100 1 WIRELESS\_LED\_TP

TP1224 tpc60t\_100 1 CHARGE\_LED  
TP1228 tpc60t\_100 1 CHARGE\_LED\_TP

TP1225 tpc60t\_100 1 SATA\_LED#  
TP1229 tpc60t\_100 1 SATA\_LED#\_TP

TP1226 tpc60b\_100 1 SD\_MS\_LED#  
TP1230 tpc60b\_100 1 SD\_MS\_LED#\_TP

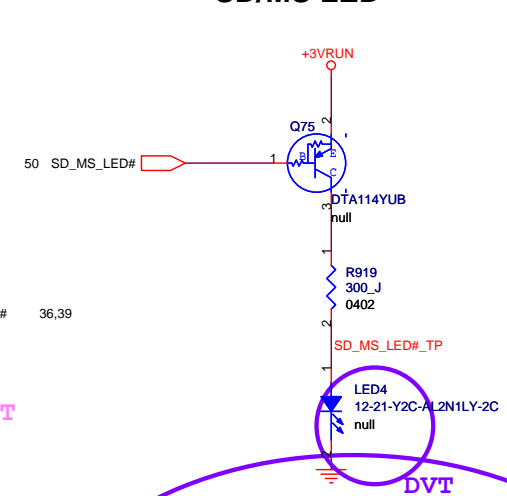
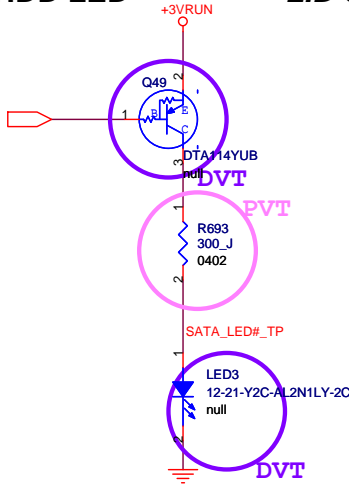
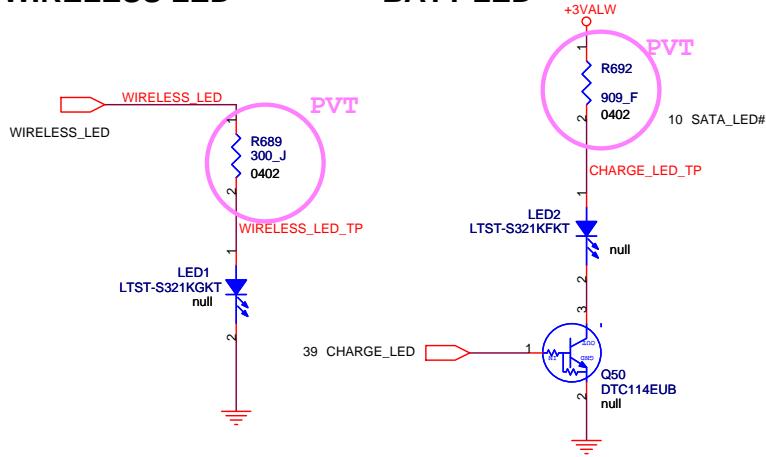
## WIRELESS LED

## BATT LED

## HDD LED

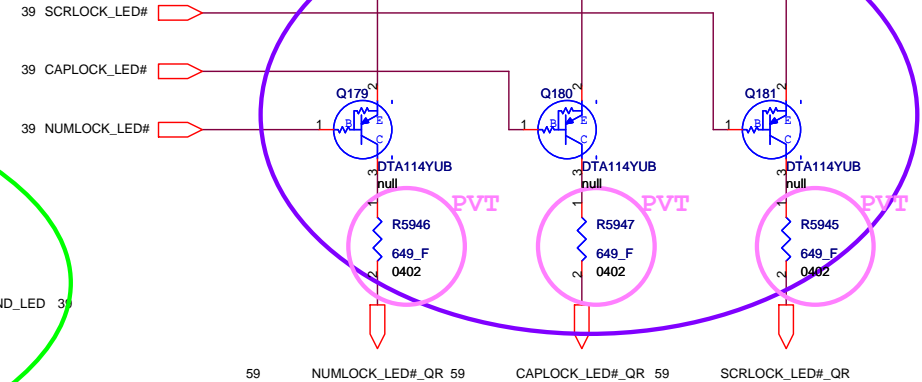
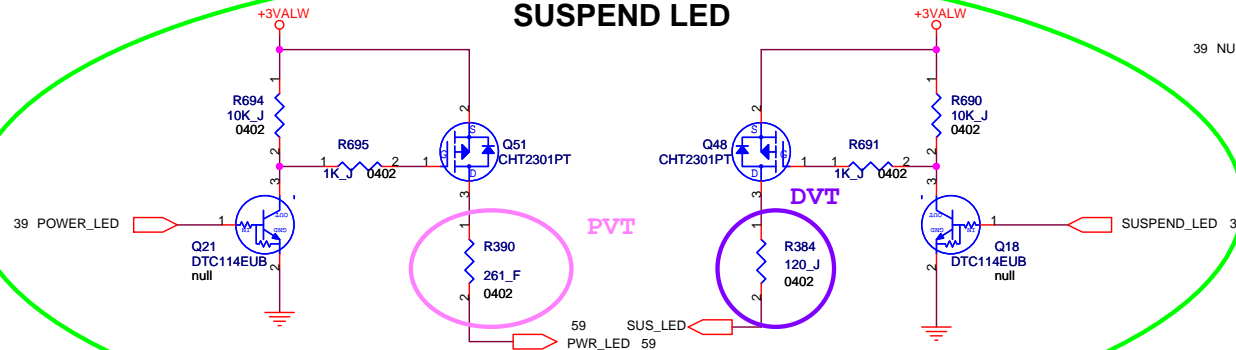
## LID Switch

## SD/MS LED

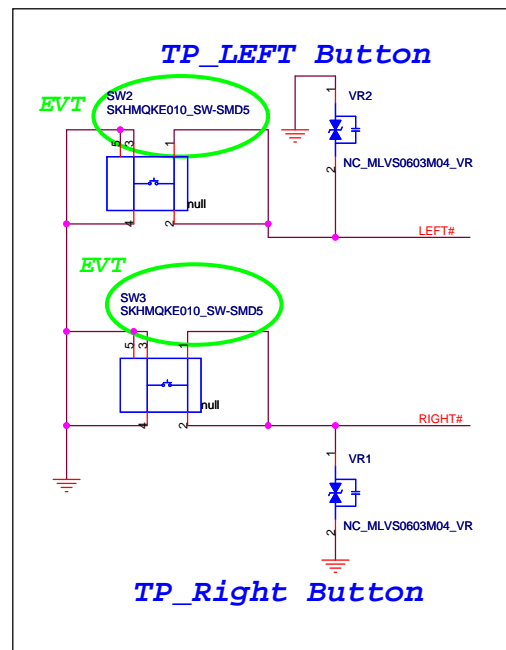
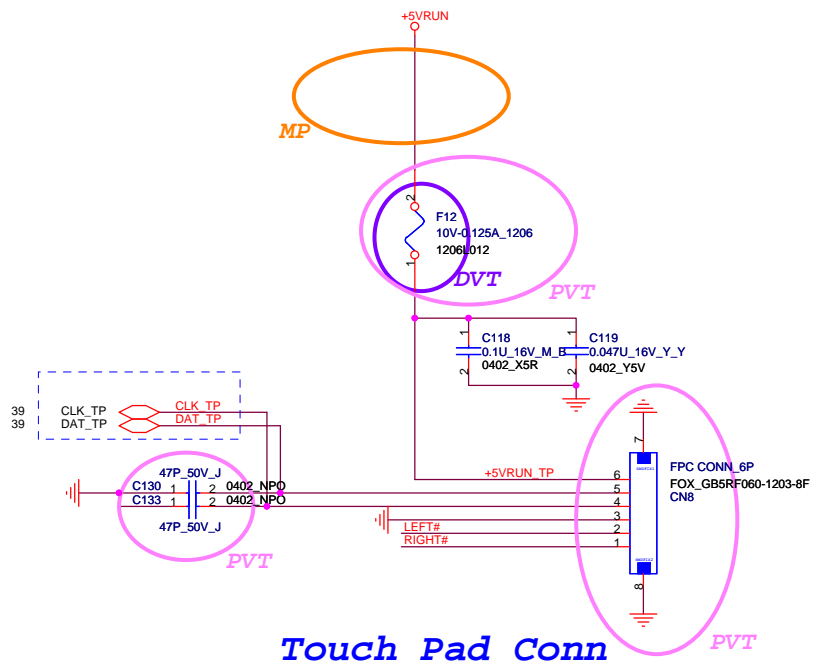


EVT

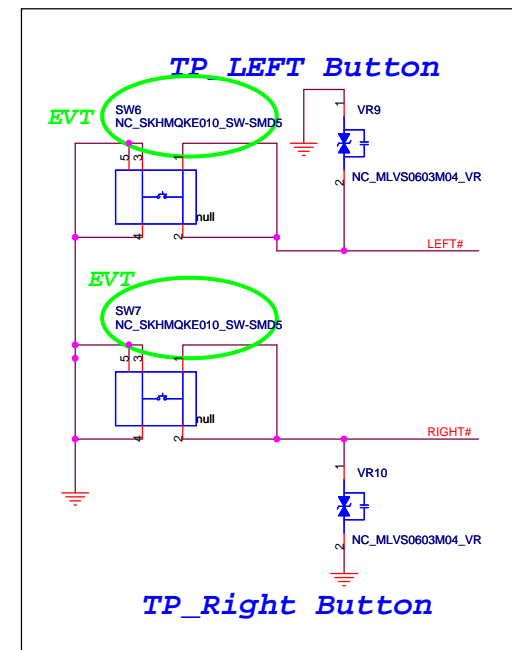
## POWER LED SUSPEND LED







For M960 Only



For M970 Only

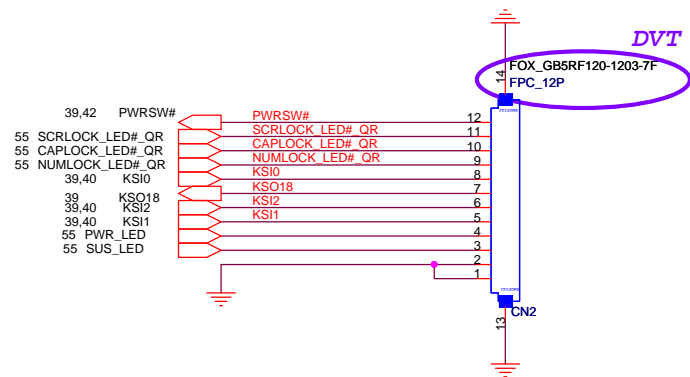
**M960/M970 T/P Control Table**

|             | SW2   | SW3   | SW6   | SW7   |  |  |  |  |
|-------------|-------|-------|-------|-------|--|--|--|--|
| <b>M960</b> | Stuff | Stuff | Dummy | Dummy |  |  |  |  |
| <b>M970</b> | Dummy | Dummy | Stuff | Stuff |  |  |  |  |



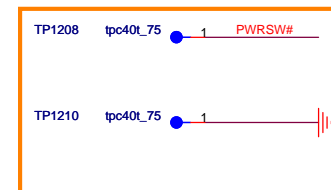
[illegible]

PVT

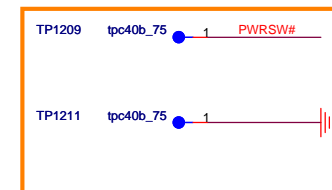


Switch DB Conn.

BFT Test Pad(Top)



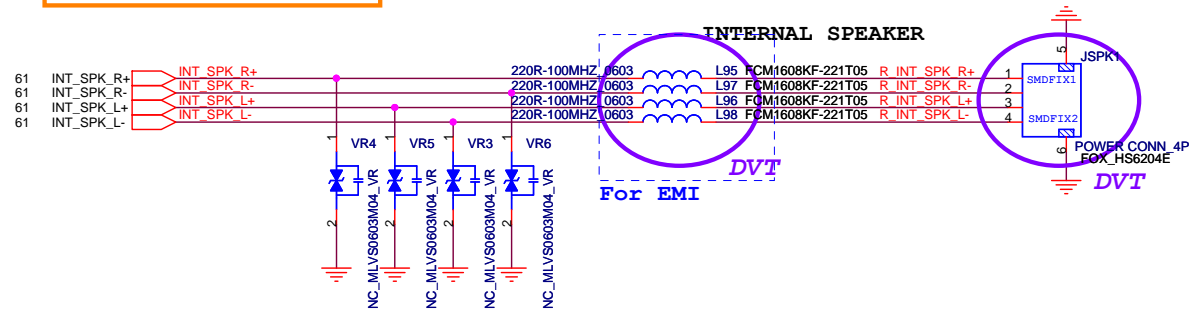
BFT Test Pad(Bottom)



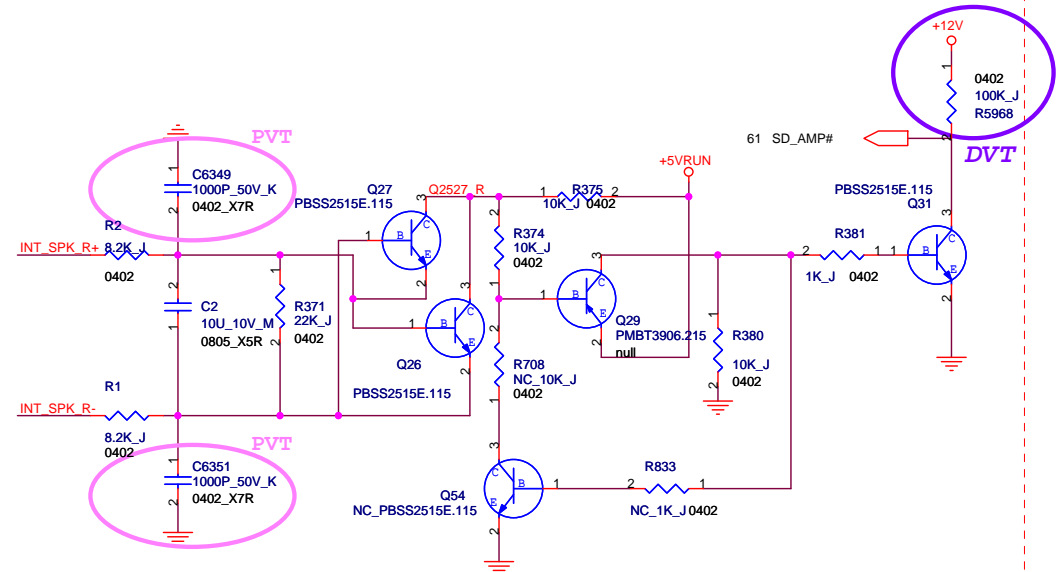
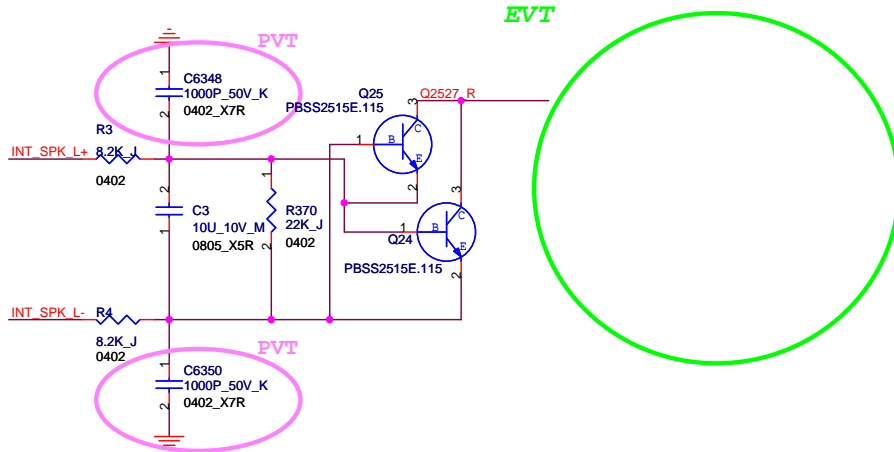
|                |                              |                                  |           |
|----------------|------------------------------|----------------------------------|-----------|
| <b>FOXCONN</b> |                              | HON HAI Precision Ind. Co., Ltd. |           |
|                |                              | CCPBG - R&D Division             |           |
| Title          | <b>SWITCH DB Connector</b>   |                                  |           |
| Size           | Document Number              |                                  | Rev       |
| Custom         | <b>M960&amp;M970 H Model</b> |                                  | <b>SA</b> |
| Date:          | Tuesday, December 29, 2009   | Sheet                            | 59 of 86  |

# BFT Test Pad(Bottom)

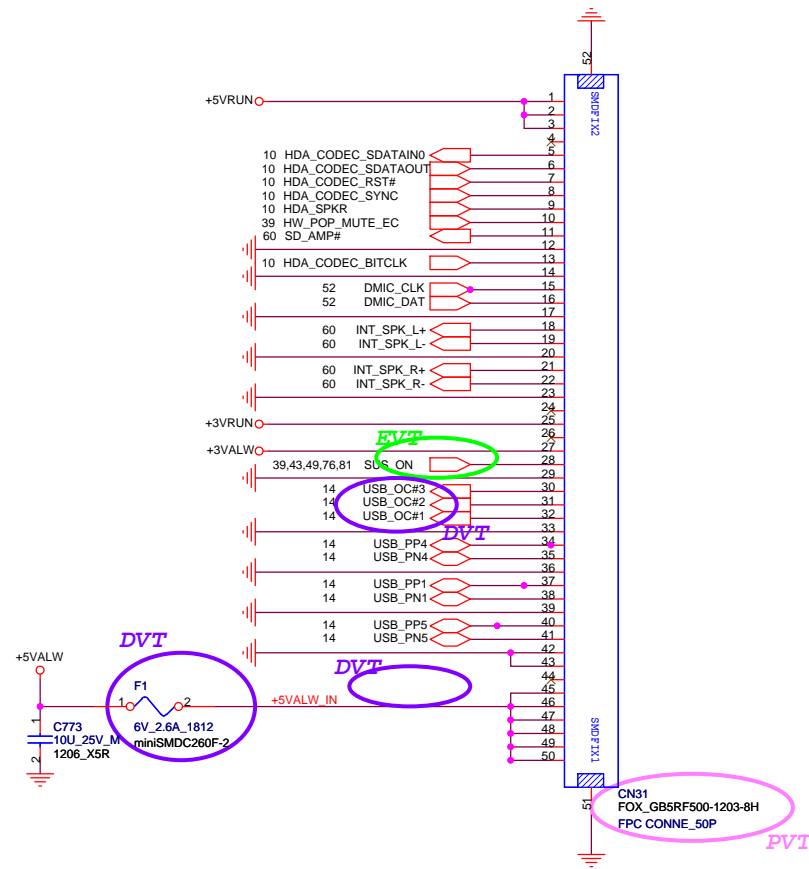
|        |           |   |              |
|--------|-----------|---|--------------|
| TP1194 | tpc40b_75 | 1 | R_INT_SPK_R- |
| TP1195 | tpc40b_75 | 1 | R_INT_SPK_R+ |
| TP1196 | tpc40b_75 | 1 | R_INT_SPK_L- |
| TP1197 | tpc40b_75 | 1 | R_INT_SPK_L+ |



If use ALC275 Codec, for Shut-down Codec Amp. power (PVDD1 and PVDD2)

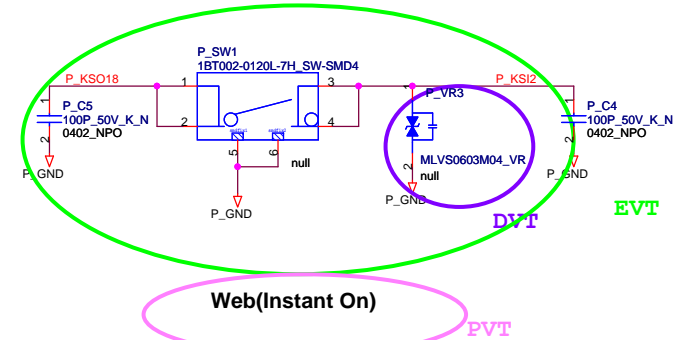
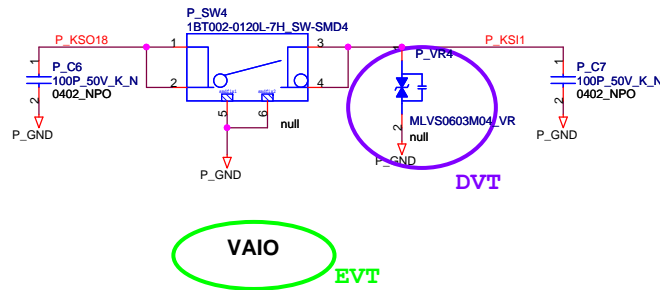
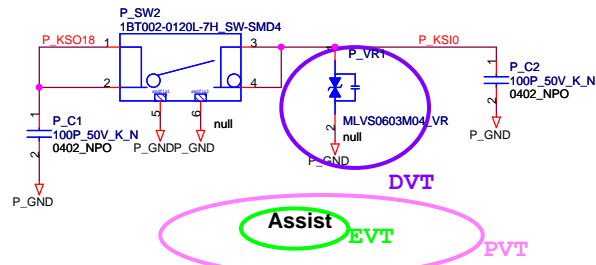
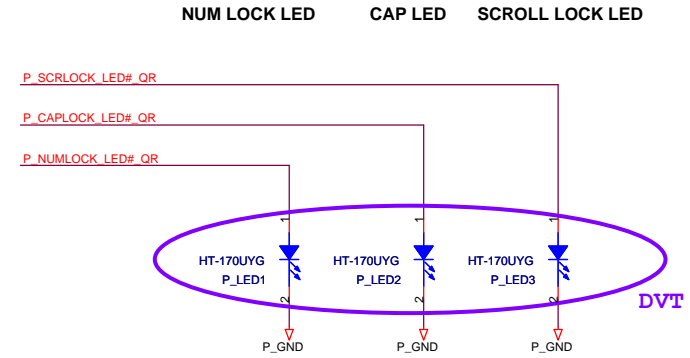
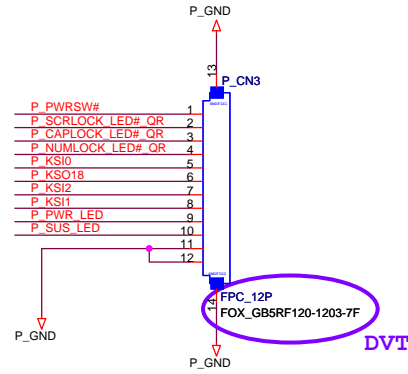
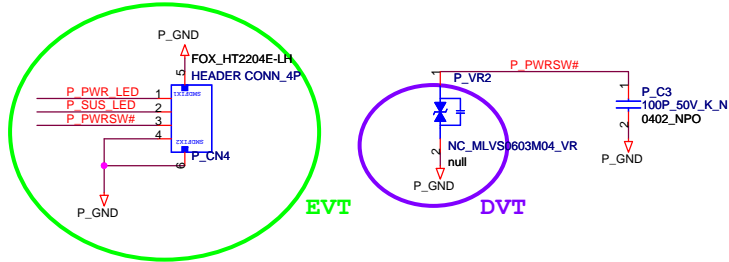


For Mor request,add the speaker cable short protection circuit



# Power Button Board

## POWER BUTTON

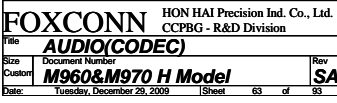


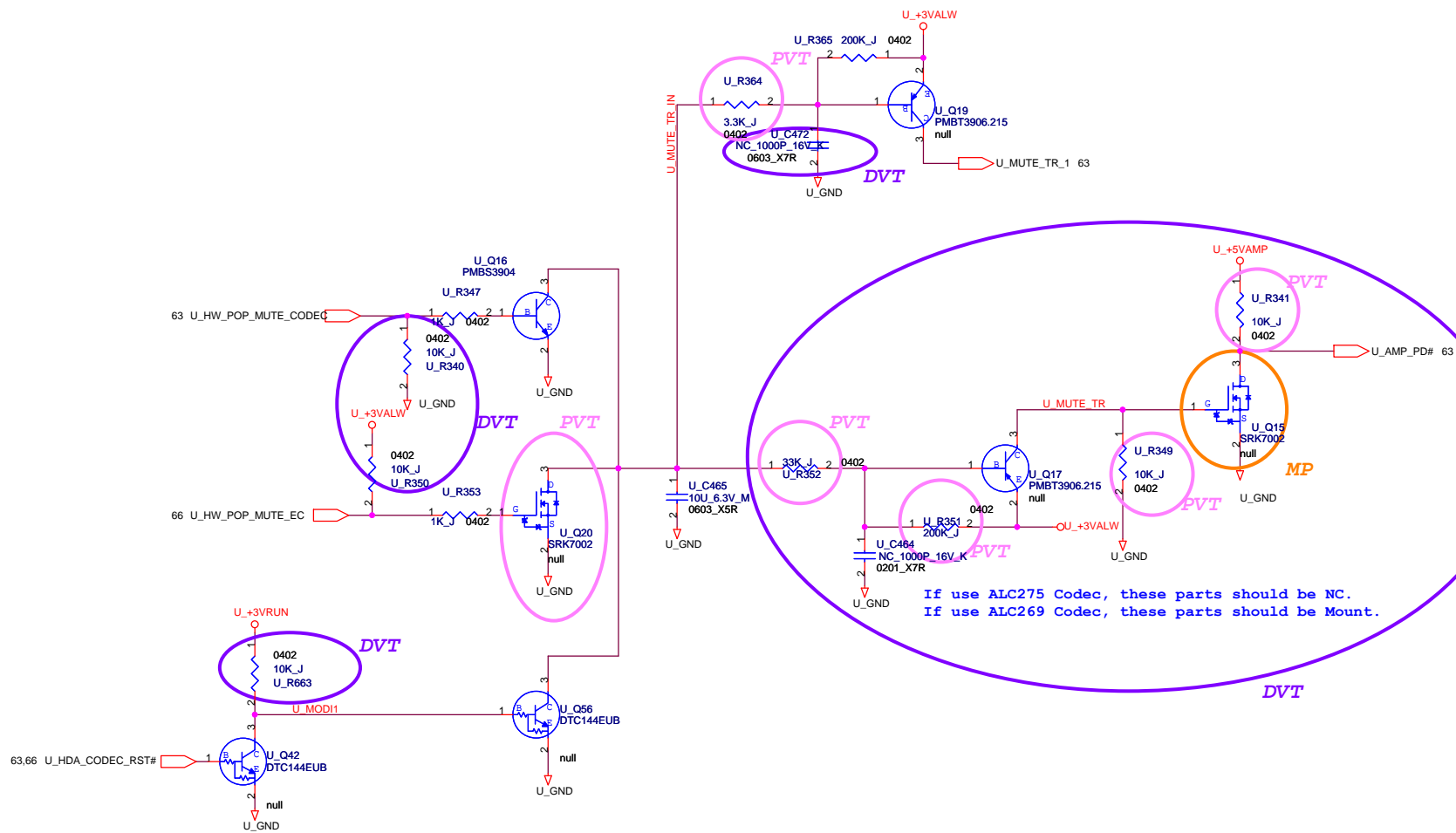
U\_DMIC\_MISC\_3      U\_R342\_0\_J      0402      U\_DMIC\_CLK

1      2

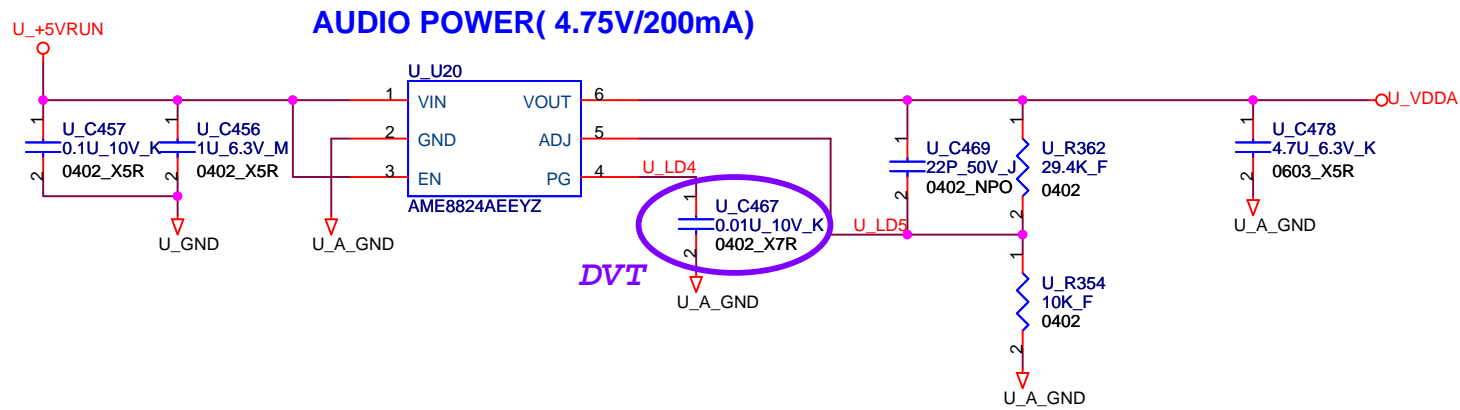
U\_DMIC\_MISC\_1      U\_R320\_0\_J      0402      U\_DMIC\_DAT

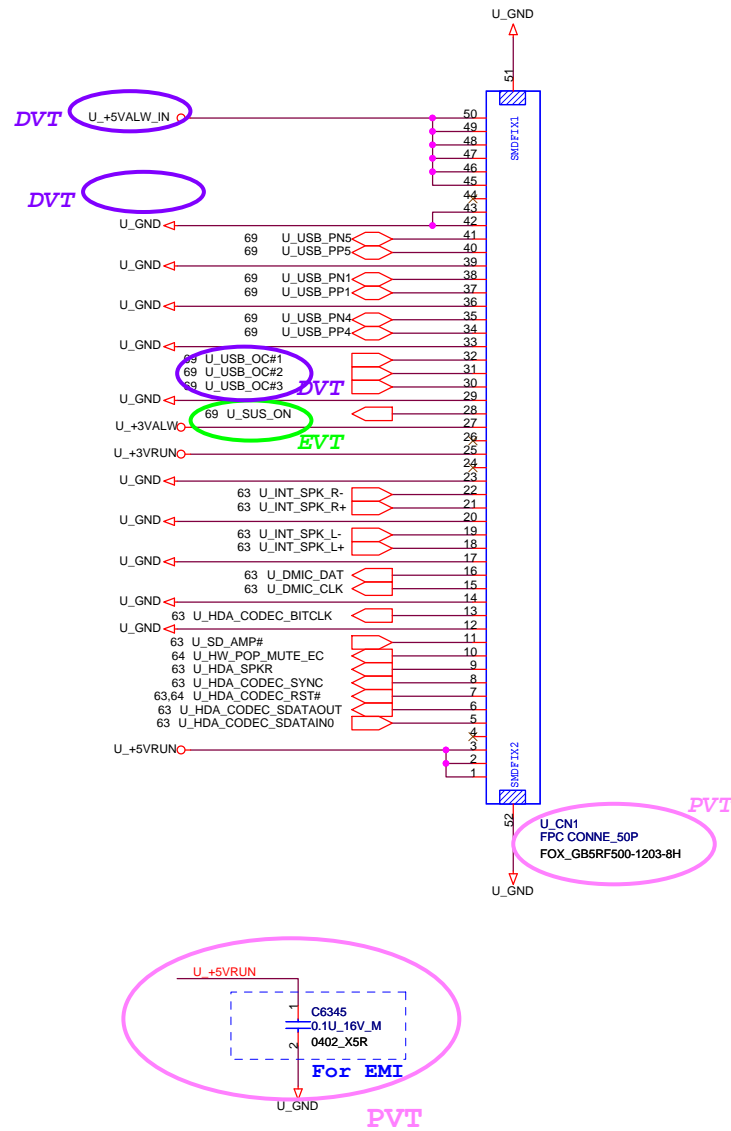
1      2

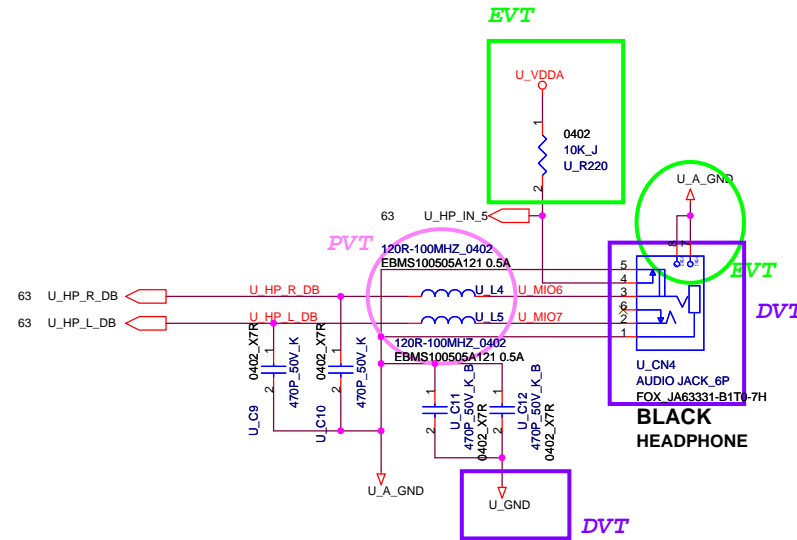


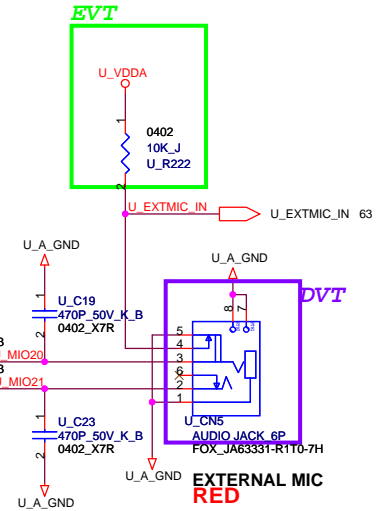
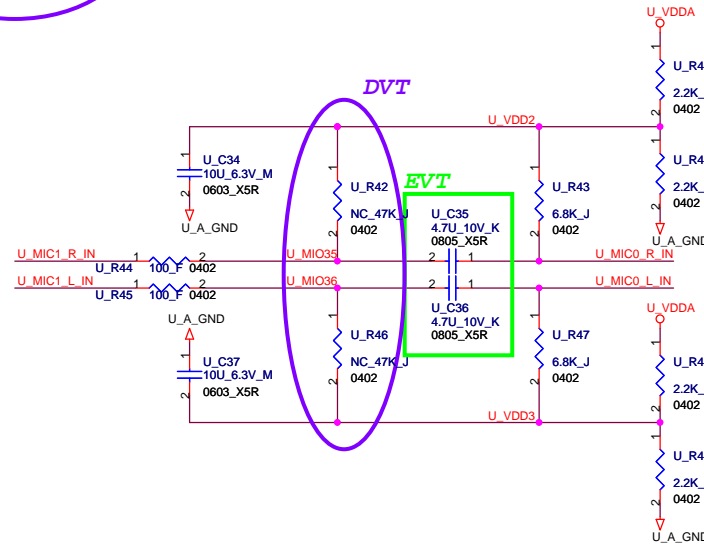
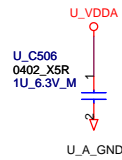
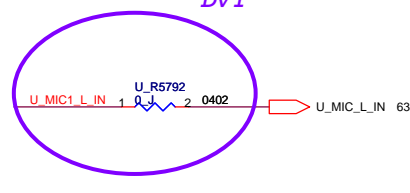
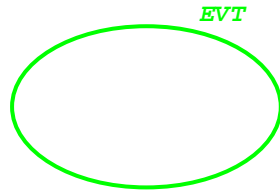
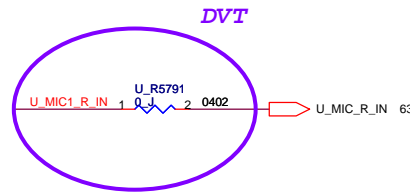
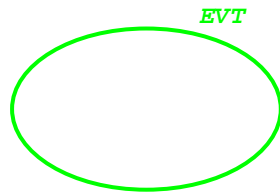


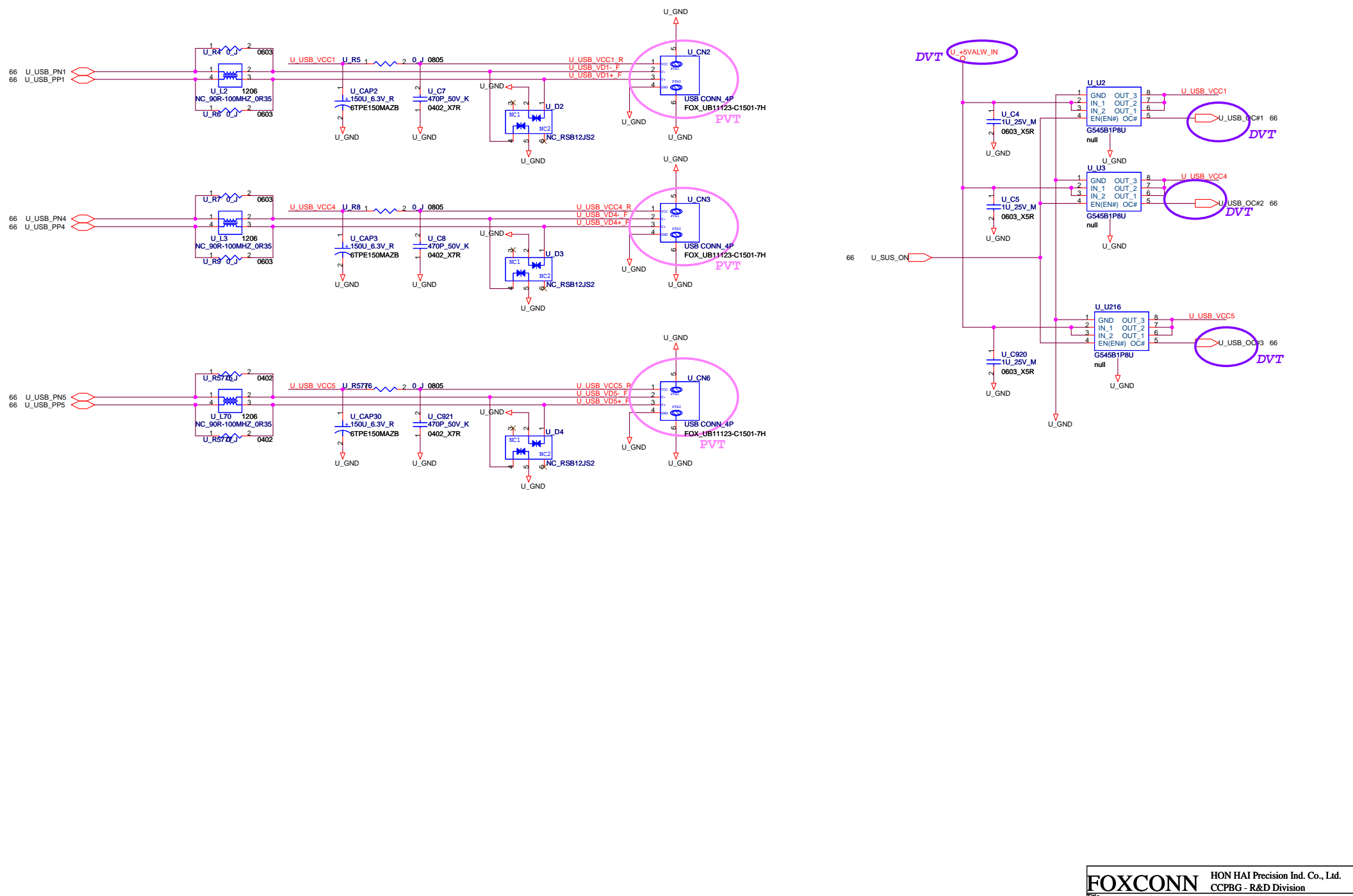


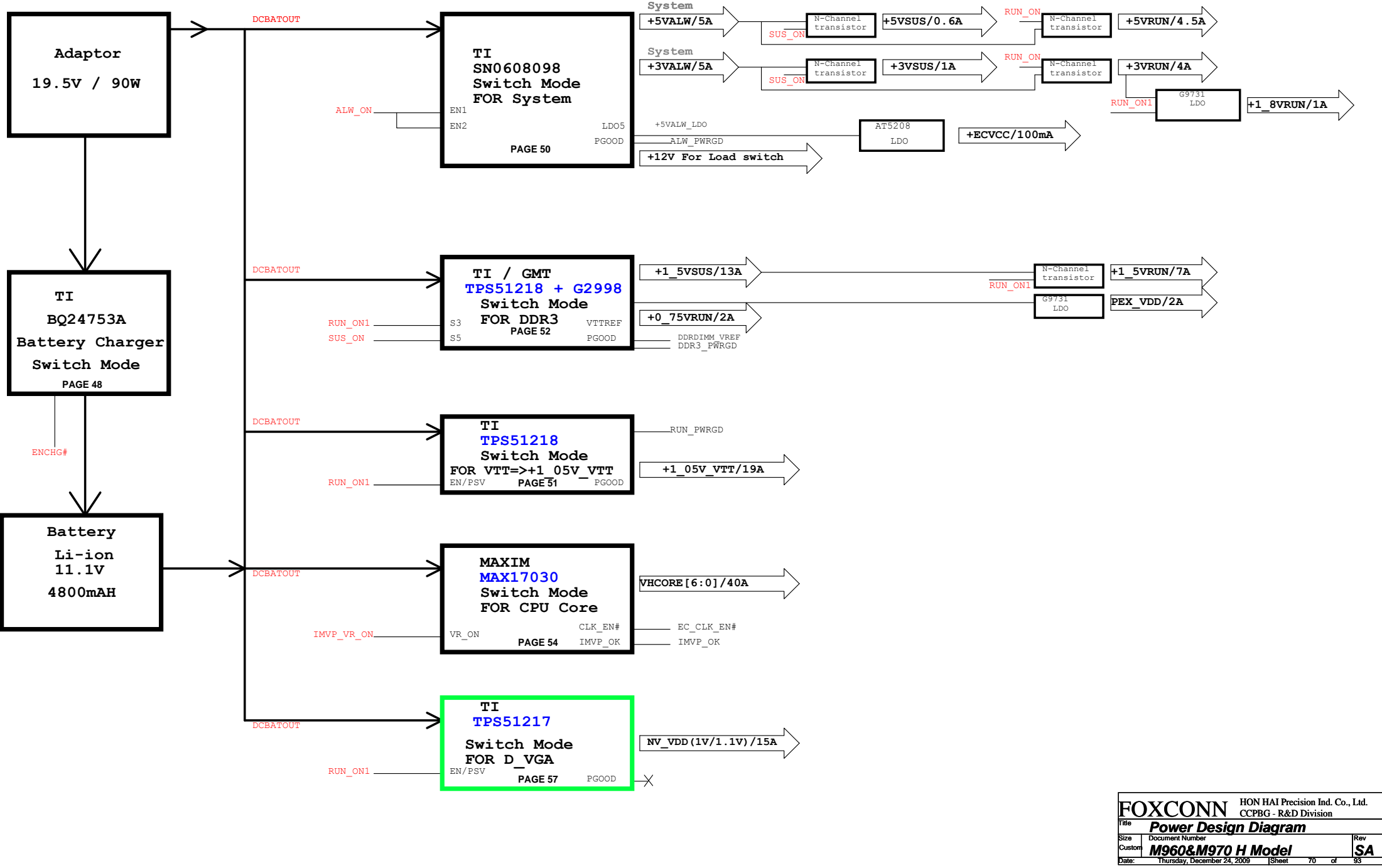




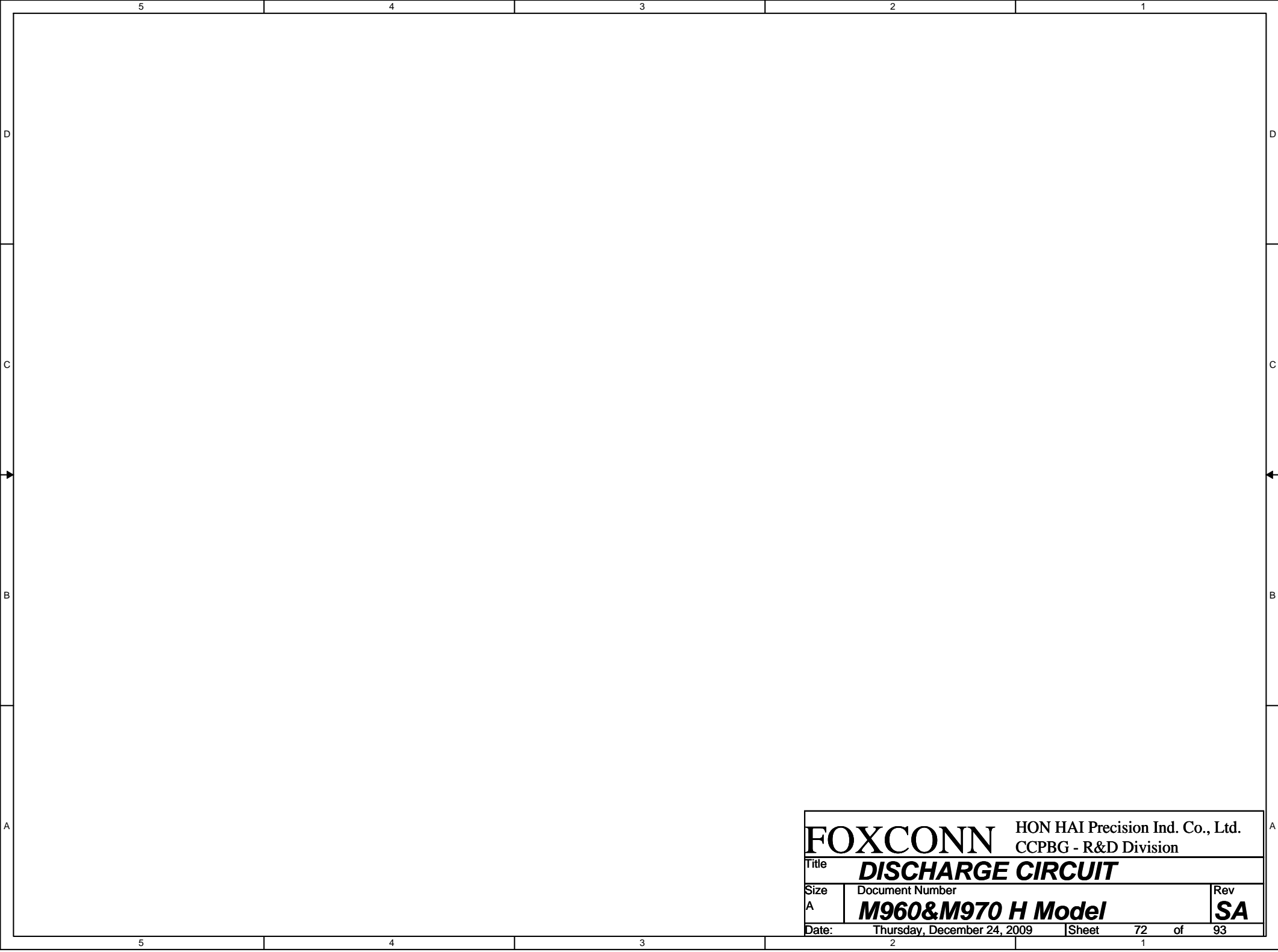






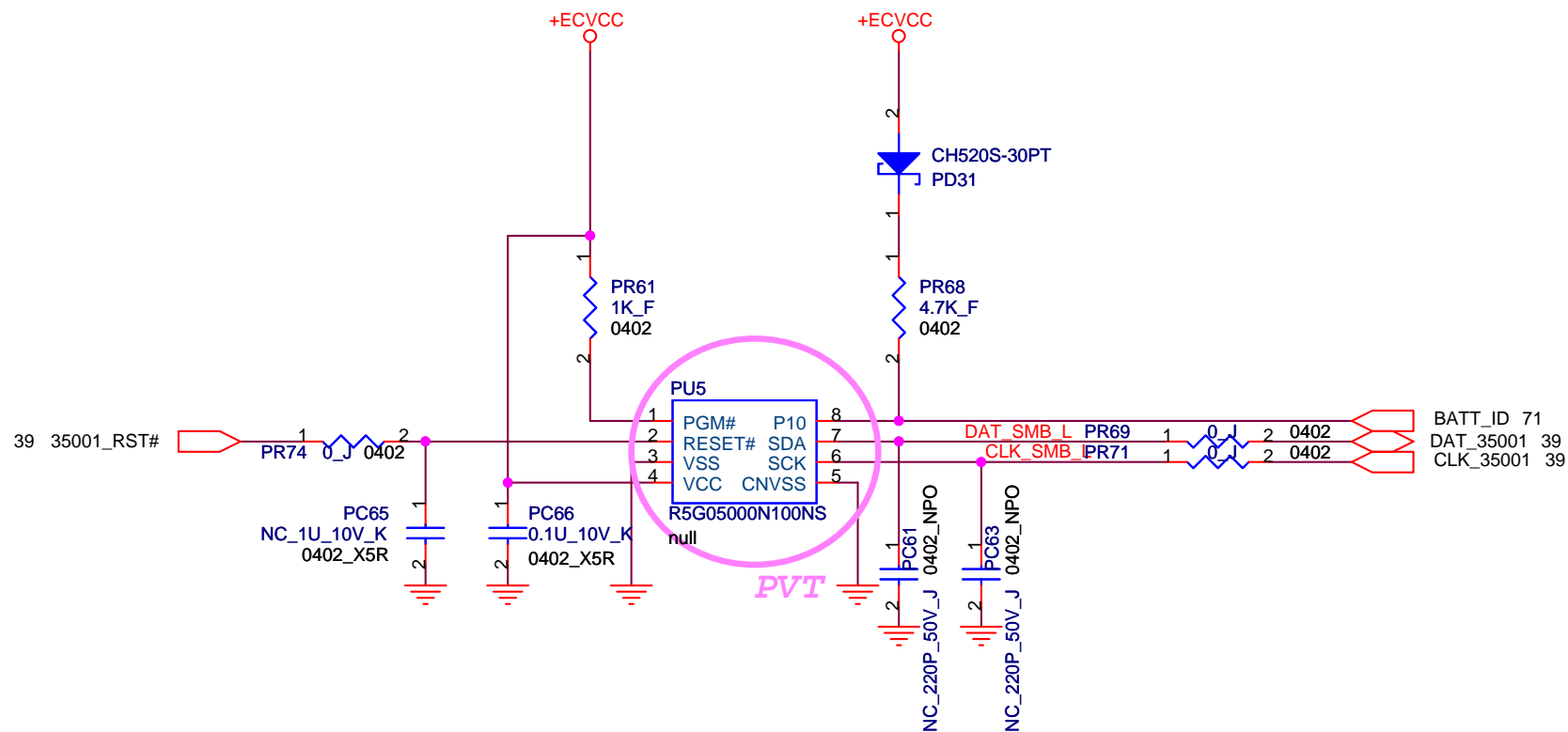






|                                |   |  |                  |
|--------------------------------|---|--|------------------|
| FOXCONN                        |   | HON HAI Precision Ind. Co., Ltd.<br>CCPBG - R&D Division |                  |
| Title <b>DISCHARGE CIRCUIT</b> |   |  |                  |
| Size<br>A                      | Document Number<br><b>M960&amp;M970 H Model</b> |  | Rev<br><b>SA</b> |
| Date:                          | Thursday, December 24, 2009                     | Sheet 72 of 93   |                  |



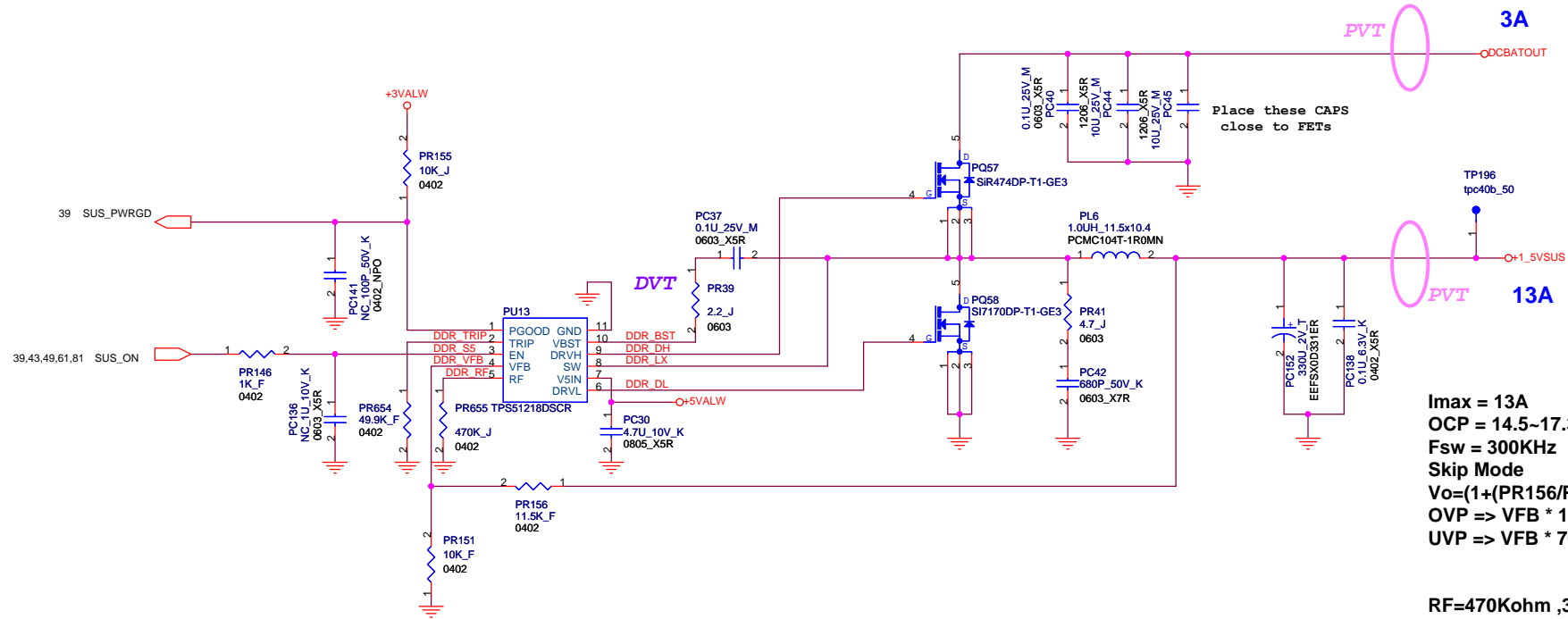


|                          |   |                                  |                  |
|--------------------------|---|----------------------------------|------------------|
| FOXCONN                  |   | HON HAI Precision Ind. Co., Ltd. |                  |
|                          |   | CCPBG - R&D Division             |                  |
| Title <b>Identify IC</b> |   |                                  |                  |
| Size<br>A                | Document Number<br><b>M960&amp;M970 H Model</b> |                                  | Rev<br><b>SA</b> |
| Date:                    | Tuesday, December 29, 2009                      | Sheet 73 of 93                   |                  |



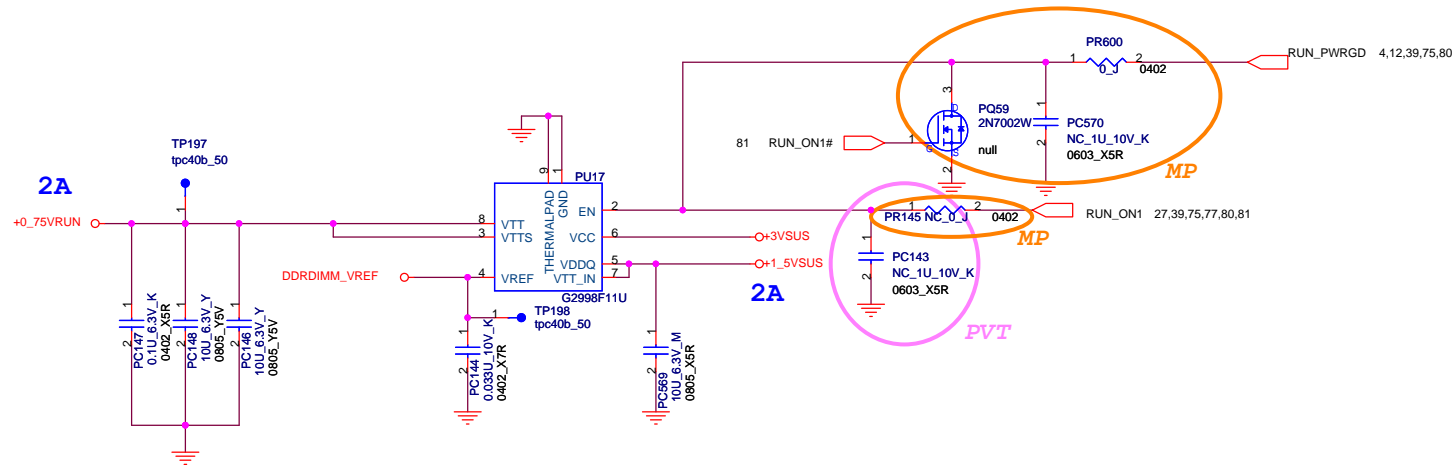


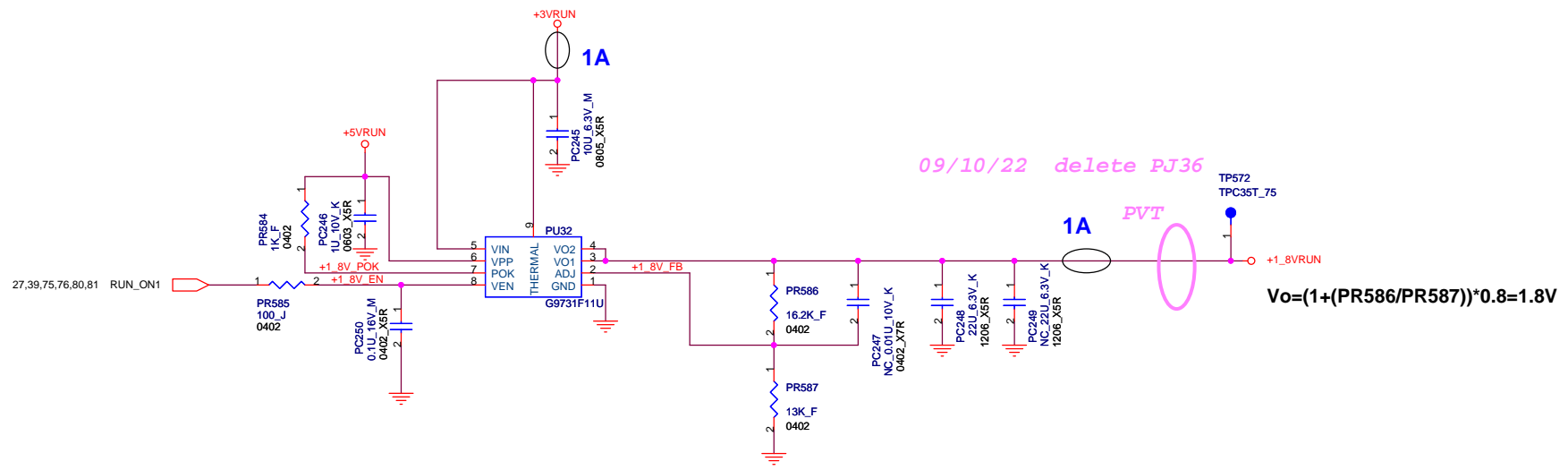
09/10/22 delete PJ26 and PJ27



**Imax = 13A**  
**OCp = 14.5~17.32A**  
**Fsw = 300KHz**  
**Skip Mode**  
 **$V_o = (1 + (PR156/PR151)) * 0.704 = 1.514V$**   
**OVP => VFB \* 120%**  
**UVP => VFB \* 70%**

RF=470Kohm ,300KHz  
200Kohm ,350KHz  
100Kohm ,390KHz  
47Kohm ,450KHz





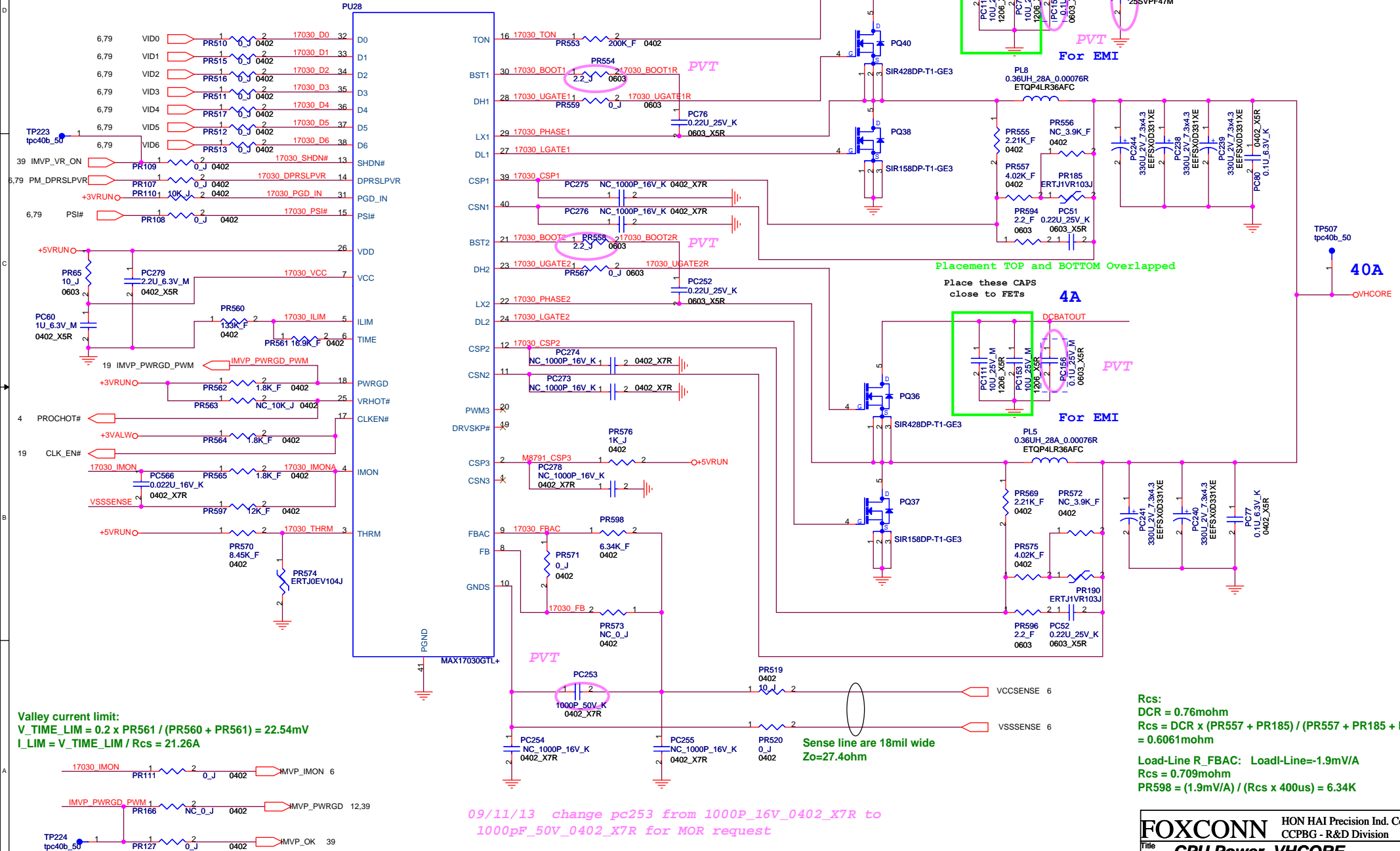
09/11/21 change PC151 and PC156 from NC to mount  
0.1uf for EMI request

Placement TOP and BOTTOM Overlapped

Place these CAPS  
close to FETs

4A

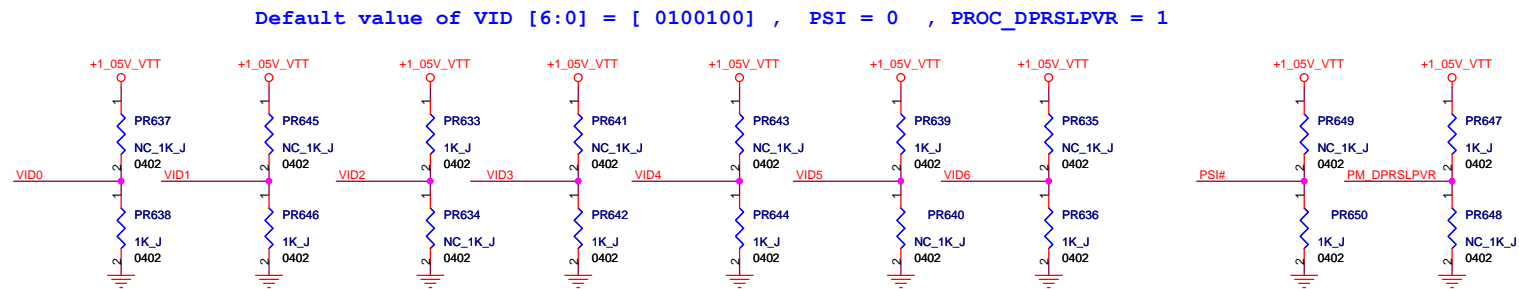
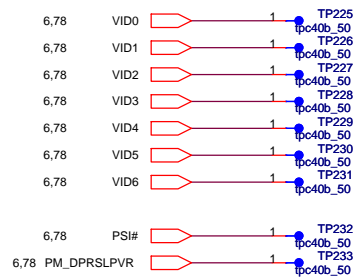
OCBATOUT



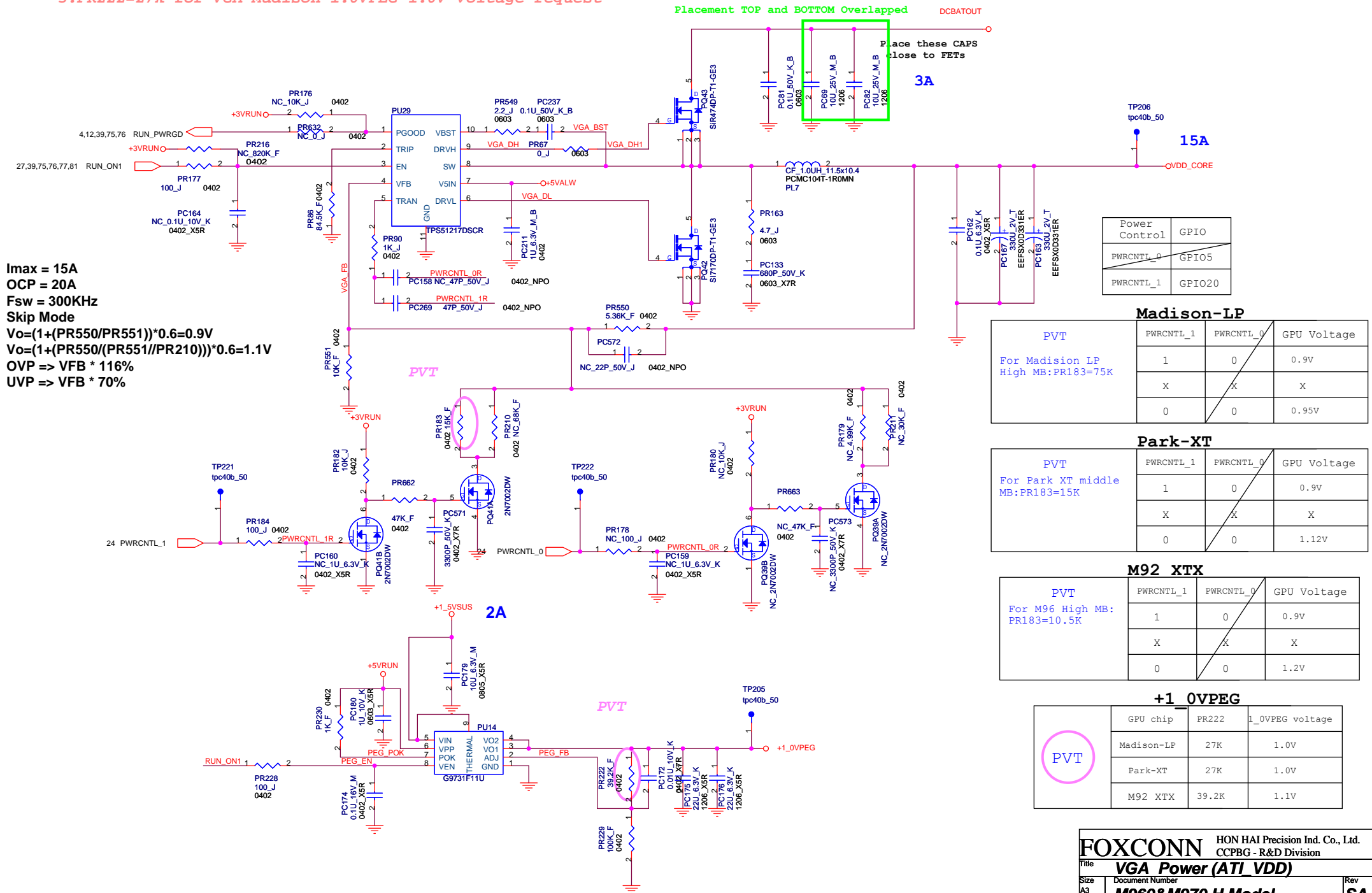
Rcs:  
DCR = 0.76mohm  
Rcs = DCR x (PR557 + PR185) / (PR557 + PR185 + PR555)  
= 0.6061mohm

Load-Line R\_FBAC: Load-Line=1.9mV/A  
Rcs = 0.709mohm  
PR598 = (1.9mV/A) / (Rcs x 400us) = 6.34K

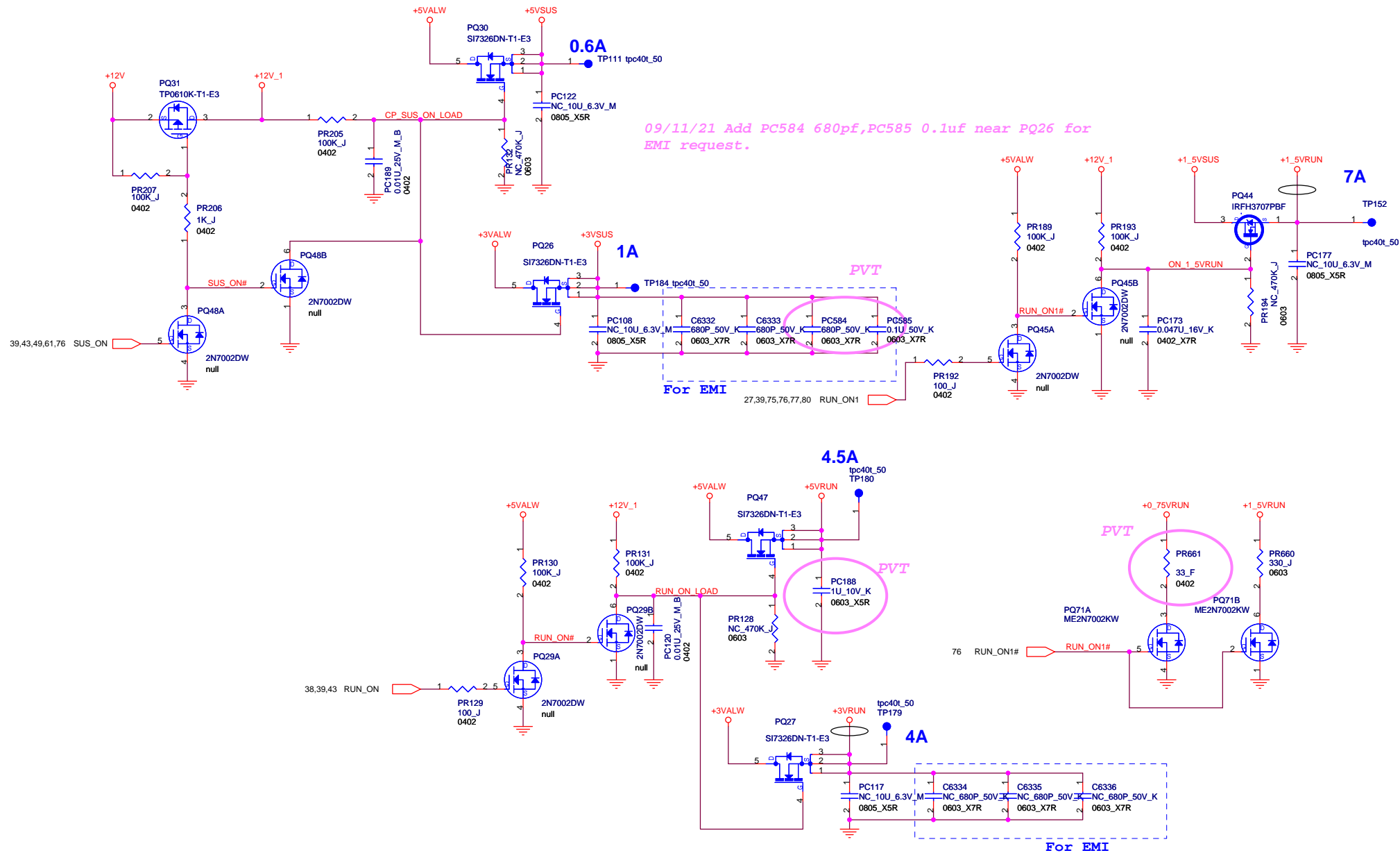
09/11/13 change pc253 from 1000P\_16V\_0402\_X7R to  
1000pF\_50V\_0402\_X7R for MOR request

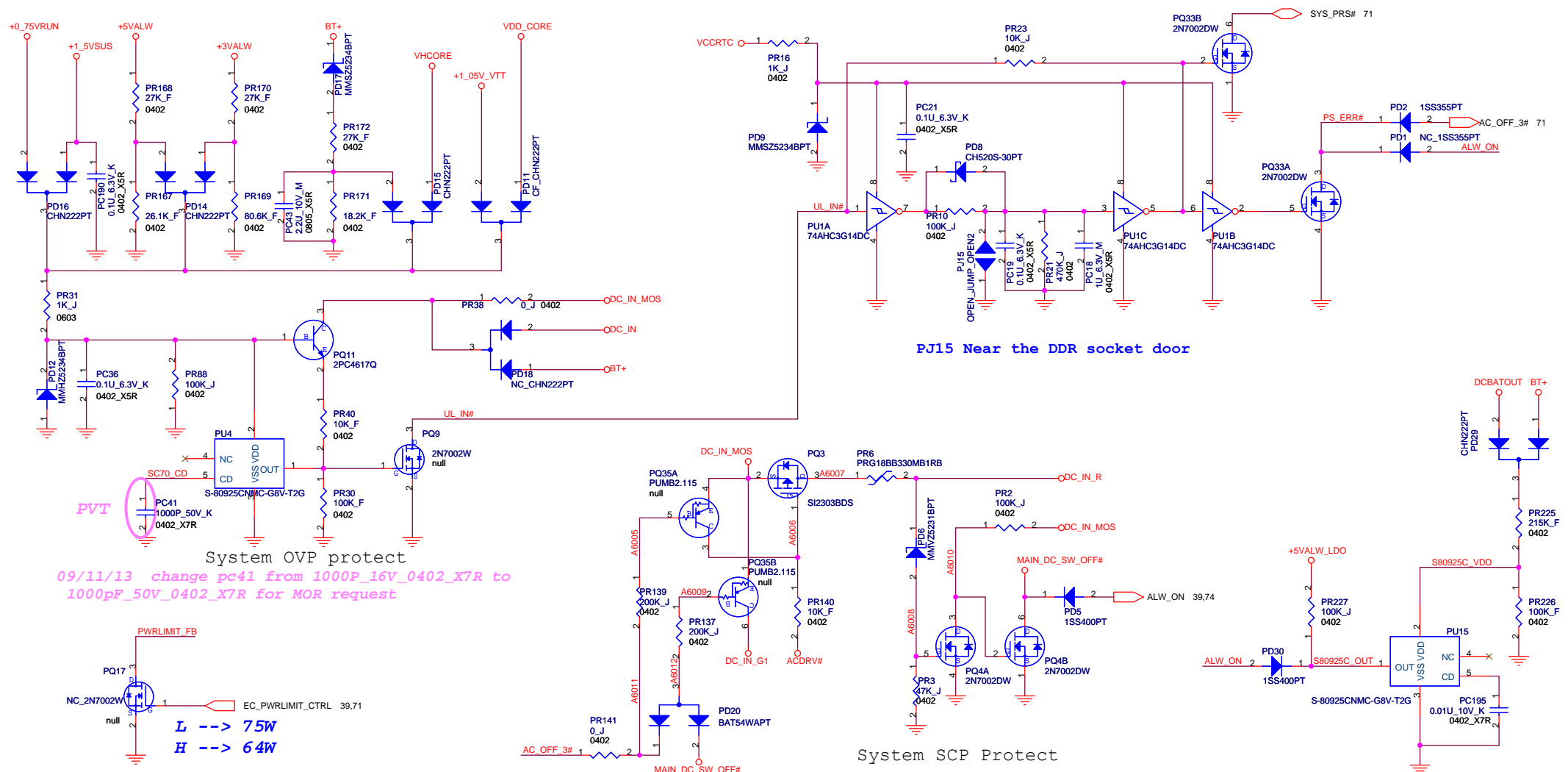


09/12/08 1.PR222=39.2k for VGA M92 XTX 1.0VPEG 1.1V voltage request  
 2.PR222=27k for VGA Park 1.0VPEG 1.0V voltage request  
 3.PR222=27k for VGA Madison 1.0VPEG 1.0V voltage request





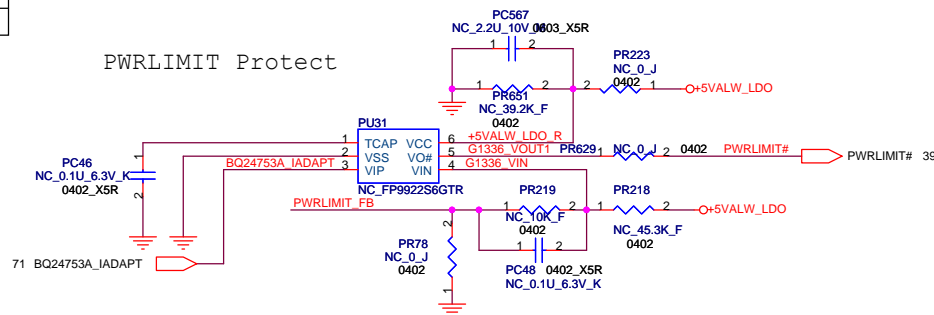


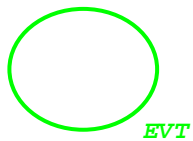


| DVT             | PQ17 | PR218 | PR78  |
|-----------------|------|-------|-------|
| For Power limit | NC   | 68.1K | 2.05K |

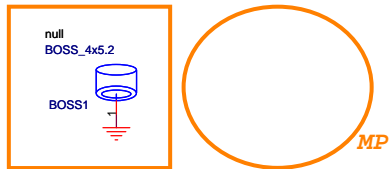
| DVT        | PWRLIMIT     |
|------------|--------------|
| H M/B(75W) | 3.76A/71.41W |
| L M/B(64W) | 3.2A/60.82W  |

PWRLIMIT Protect

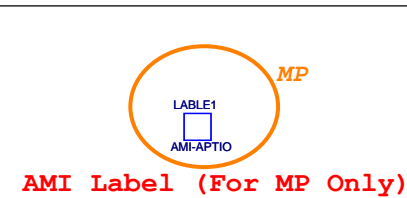
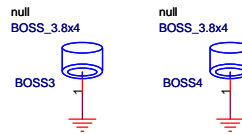




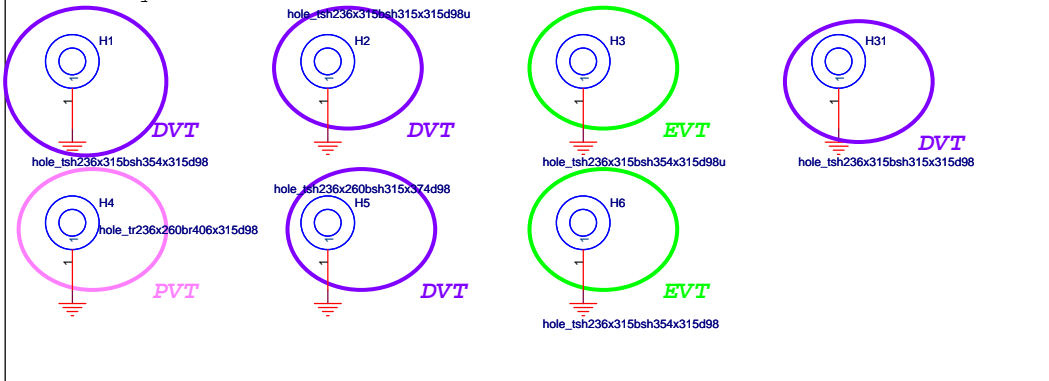
### Wireless card



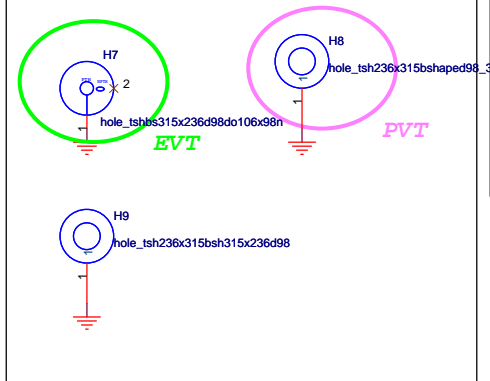
### Blue Tooth



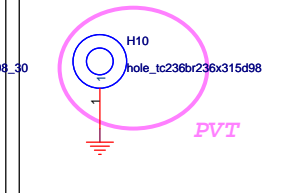
### System



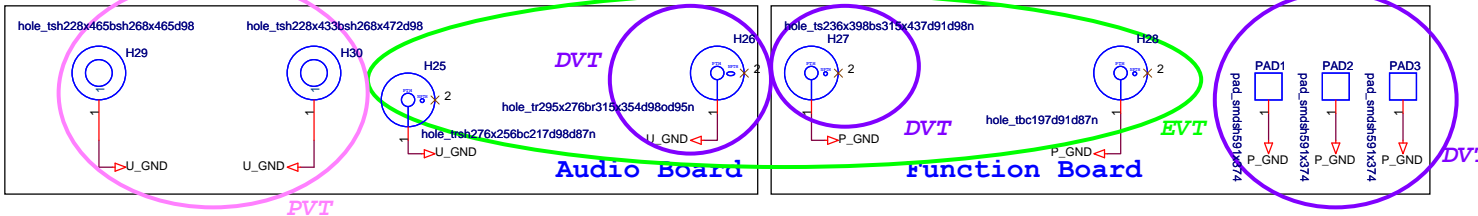
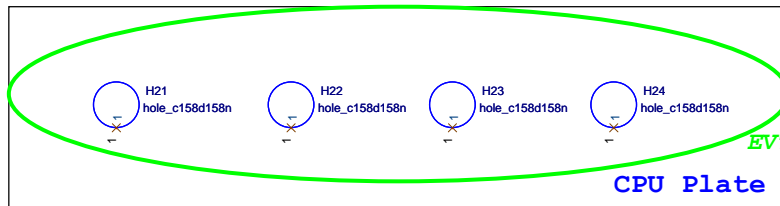
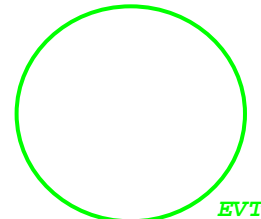
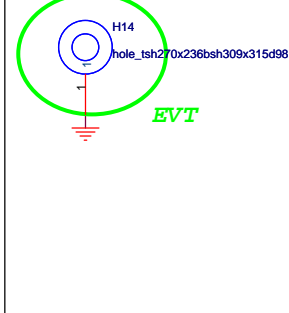
### Thermal



### KB



### ODD BKT



## M960/M970 EVT

(2009/06/22)

- P.25 [VGA(I/O)]Delete R5858 and R5859 for needless from AMD suggestion.
- P.25 [VGA(I/O)]Connect VDD2DI to +1\_8VRUN directly and delete.
- P.28 L98,C[6254:6256] for AMD suggestion.
- P.25 [VGA(I/O)]Connect A2VDD to +3V3\_DELAY directly and delete.
- P.28 L12,C529,C91,C85 for AMD suggestion.
- P.28 [VGA(Power)]Delete net BIF\_VDDC and C6156,C6157 for needless from AMD suggestion.
- P.28 [VGA(Power)]Change VDD3 power plan from +1\_8VRUN to +3V3\_DELAY from AMD suggestion.
- P.28 [VGA(Power)]Connect Ball AH29 to GND from AMD suggestion.
- P.28 [VGA(Power)]The power for DPB can be shared with DPA from AMD suggestion.
- P.28 [VGA(Power)]DPC and DPD can be powered directly without filters from AMD suggestion.
- P.40 [EC]Add R5877,R5878 for SYSTEM\_ID2 used from SW's requested.

(2009/06/23)

- P.25 [VGA(I/O)]Delete R5846, R5847, R5848, R5849, R5838, R5839, R5840, C6188, C6189, U215 for needless from AMD suggestion.
- P.73 [DCIN & Charger]Add test points TP1148~TP1155 for BFT test.
- P.53 [Camera Connector]Add test points TP1156~TP1161 for BFT test.
- P.57 [FAN]Add test points TP1162~TP1165 for BFT test.
- P.35 [LAN]Add test points TP1166~TP1181 for BFT test.
- P.43 [Debug Port]Add test points TP1186~TP1193 for BFT test.
- P.61 [AUDIO Speaker Conn]Add test points TP1194~TP1197 for BFT test.
- P.41 [KB Connector]Add test points TP1198~TP1207 for BFT test.
- P.60 [SWITCH DB Conn.]Add test points TP1208~TP1211 for BFT test.
- P.73 [DCIN&Charger]Add test points TP1212~TP1218 for BFT test.
- P.41 [KB Connector]Del CN4 because M960 and M970 KB connectors are decided to co-use.
- P.67 [AUDIO Speaker AMP]Del this page because AMP is combined with ALC275
- P.39 [PCIE (MS&I LINK)]Change the net name from "SDMS\_VCC" to "VCC\_MS" because this net is for MS power only.
- P.26 [VGA (Memory BUS) 4/6]Change the power source from +1\_8VRUN to +1\_5VRUN because the power source of DDR3 VRAM is +1\_5VRUN.

(2009/06/24)

- P.23 [CRT]Add and NC Q11,D9,R469,C279,R767,U9 for Semi-PNP.
- P.39 [HDMI]Del C100,C107,C105,C106,C108,C109,C111,C112 for redundant design.
- P.10 [PCH (HDA,JTAG,SAT)]Del R302 for redundant design.
- P.24 [VGA (Strap) 2/6]Change net name "ATI\_DVPDATA[23:20]" to ATI\_DVPDATA[3:0] for AMD recommend.
- P.24 [VGA (Strap) 2/6]Del R5767,R5768 for AMD recommend.
- P.25 [VGA (I/O) 3/6]Del R5837 for AMD recommend.
- P.26 [VGA (Memory BUS) 4/6]Add C6105,C6106,R5871,R5872 for AMD recommend.
- P.13 [PCH (LVDS,DDI)]Del R1571 and place TP1219 on DDPD\_HPD because this pin is not necessary for pull-low to GND.
- P.55 [Felica Connector]Del F14,R5874,R5875 because the F14 related circuit is out of Felica spec.
- P.55 [Felica Connector]Stuff C869,U48,R630,C845 because F14 related circuit is out of Felica spec.
- P.72 [DCIN&CHARGE]Change DC-IN current form 8A to 5A.
- P.72 [DCIN&CHARGE]Change PD7 from SMD15C to TVS2315PT.
- P.74 [Identify ID]Change PC61 from 1uF 10V k to 220Pf 50v J, then NC PC61.
- P.76 [VTT&PCH Power(+1\_05V)]Change PR116 from 100k to 470k.
- P.77 [DDR3 Power(+1\_5V/+0\_75V)]Change PR655 from 100k to 470k.
- P.79 [CPU Power\_VHCORE]Delete PC67,PC155.
- P.82 [Other plane power]Change PQ29,PQ45,PQ48: from 2N7002DW to 2N7002SPT.
- P.93 [OVP protection]Change PC41 from 0.01uF to 1000Pf.

(2009/06/25)

- P.45 [Mini-PCIE Card (WLAN)]Add R5901 on WLAN\_EN for RF VEDS test.
- P.23 [VGA (PCI-E) 1/6]NC R5831 for AMD M96.
- P.26 [VGA (Memory BUS) 4/6]NC R5798,R5800,R5799,R5802,R5803,R5804 for AMD M96.
- P.26 [VGA (Memory BUS) 4/6]NC R5779,R5880 for AMD M96.
- P.28 [VGA (Power) 6/6]NC L90,C6196,C6194,C6195,C6192,C6193 for AMD M96.
- P.28 [VGA (Power) 6/6]NC L91,C6197,C6194,C6199,C6200 for AMD M96.
- P.28 [VGA (Power) 6/6]NC L26 for AMD M96.
- P.28 [VGA (Power) 6/6]Add L30 and connect between VDD\_CORE and SPV10 for AMD M96.
- P.28 [VGA (Power) 6/6]NC L92,C6233,C6234,C6236 for AMD comment.
- P.28 [VGA (Power) 6/6]NC L96,L97,C6248,C6251,C6249,C6252,C6250,C6253 for AMD comment.
- P.26 [VGA (Memory BUS) 4/6]Change C6100 from 2200P to 1U for AMD comment.
- P.28 [VGA (Power) 6/6]NC R5833,R5834 because M96 not support for PowerXpress.
- P.28 [VGA (Power) 6/6]Add R587 and connect to GND for PowerXpress function of Park and Madison.
- P.29 [VRAM(DDR3)# 1/4]Change R4030,R4019,R4027,R4028 from 1.33K to 4.99K for AMD comment.
- P.29 [VRAM(DDR3)# 1/4]Add R5874,R5875,C6303 for AMD comment.
- P.63 [SWITCH (Botton & KB LED)\*]Change P\_VR1,P\_VR2,P\_VR3,P\_VR4,P\_VR5 for EMC team request.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]Del SPRI,J1.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]Connect CN34 207 Pin to GND.
- P.21 [DDRIII(SO-DIMM\_0) 2/2]Connect CN35 G2 Pin to GND.
- P.46 [LAN (88E8057) 1/2]Del R1462 for Marvell comment.
- P.46 [LAN (88E8057) 1/2]NC C997,R94 for Marvell comment.
- P.37 [Inverter Connector]Add U89C,R809,R684,C902,R772 for MOR's request.
- P.37 [Inverter Connector]Change the off-page from "BL\_OFF#" to "INV\_EN" for MOR's request.
- P.37 [Inverter Connector]Add U89A,U89B,C877,R687 for MOR's request.
- P.37 [Inverter Connector]Add an off-page of BL\_OFF# on U89D for MOR's request.
- P.38 [LVDS Connector]Change the off-page of 35/36 pin of CN13 to INV\_BRADJ/INV\_ENABLE for MOR's request.
- P.10 [PCH (HDA,JTAG,SAT)]Add R5905 to let JTAG\_TCK pull down for MOR's request.
- P.11 [PCH (PCI-E,SMBUS,CLK)]Add R539,R540 to let PCIECLKRQ3#,PCIECLKRQ4# to pull high to +3VRUN for MOR's request.
- P.11 [PCH (PCI-E,SMBUS,CLK)]Add R579 to connect WLAN\_CLKREQ# to +3VSUS for MOR's request.
- P.11 [PCH (PCI-E,SMBUS,CLK)]NC R577 for MOR's request.
- P.14 [PCH (PCI,USB,NVRAM)]Change Bluetooth function from port 13 to port10 to meet Freedom Project Product Specifications.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Del GPIO39 related circuit because this pin is for LCDID3
- P.51 [PCIE (MS&I LINK) 1/2]Delete i-Link function from Freedom\_specV0.6.

|                         |   |  |                  |
|-------------------------|---|--|------------------|
| <b>FOXCONN</b>          |   | HON HAI Precision Ind. Co., Ltd.<br>CCPBG - R&D Division |                  |
| Title <b>History(1)</b> |   |  |                  |
| Size<br>A3              | Document Number<br><b>M960&amp;M970 H Model</b> |  | Rev<br><b>SA</b> |
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M960/M970 EVT

(2009/06/26)

- P.19 [CLOCK GEN]Change U31 from SL28748ALC to SL28748CLC.
- P.14 [PCH (PCI,USB,NVRAM)]Del USB\_PN12,USB\_PP12 off-page and add TP365,TP452 on tha same ports.
- P.45 [Mini-PCIE Card (WLAN)]Del U45,C891 for disable WIMAX function
- P.45 [Mini-PCIE Card (WLAN)]NC 36pin,38pin of CN12 for disable WIMAX function
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Add an off-page "LCDID4" on GPIO48 and change the net name to LCDID4 for LCDID[4:0].
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Del R5867 for LCDID[4:0].
- P.63 [SWITCH (Botton & KB LED)\*]Del "VAIO" button from Freedom Project Product Specifications V0.6.
- P.63 [SWITCH (Botton & KB LED)\*]Change the button names "Web" and "Display Off" to "Instant On" and "VAIO" from Freedom Project Product Specifications V0.6.
- P.51 [PCIE (MS&iLINK) 1/2]Connect TPB+/- to GND and NC TPA0/TPAN0/TPBIAS0 to disable i-Link function for Realtek comment.
- P.51 [PCIE (MS&iLINK) 1/2]Add R1468 and NC it to disable i-Link function for Realtek comment.
- P.12 [PCH (DMI,FDI,GPIO)]Connect SYS\_PWROK line to ALW\_PWRGD through D33 for MOR's request.
- P.44 [Express Card]Add R5457 between the gate and the source of Q38 for MOR's request.
- P.68 [AUDIO (Head Phone Jack)\*]Add U\_R220 pull-high to U\_VDDA on U\_HP\_IN\_5 for Realtek comment.
- P.68 [AUDIO (Head Phone Jack)\*]Change U\_GND ground to U\_A\_GND for Realtek comment.
- P.69 [AUDIO (Ext MIC Jack)\*]Add U\_R221 pull-high to U\_VDDA on U\_EXTMIC\_IN for Realtek comment.
- P.69 [AUDIO (Ext MIC Jack)\*]Change U\_C35/U\_C36 to 4.7u X5R for Realtek comment.
- P.84 [HOLE & AMI LABEL]Add H1~H20 for ME request.
- P.25 [VGA (I/O) 3/6]Add 10K ohm resistors to let ATI\_JTAG TRSTB,ATI\_JTAG\_TDI,ATI\_JTAG\_TCLK,ATI\_JTAG\_TMS,ATI\_JTAG\_TDO pull up to +3V3\_DELAY.

(2009/06/29)

- P.68 [AUDIO (Head Phone Jack)\*]Change U\_A\_GND which is connected to U\_C9 pin2 to U\_GND.
- P.72 [DCIN&Charger]Change PCN1 connector to BP91071-B51E3-7H for ME request.
- P.50 [eSATA Combo Conn.]Change CN27 connector to 3Q38111-R21C3-8H for ME request.
- P.58 [Touch Pad]Change SW2/SW3/SW6/SW7 to 19-SKRPABE-1000 for ME request.
- P.22 [Braidwood Connector]Change NC39 to 1N-0078002-F1G0 for ME request.
- P.51 [PCIE (MS&iLINK) 1/2]Del R1468 and connect XOUT to U71 A2 for Ricoh's comment.
- P.28 [VGA (Power) 6/6]NC AH29 U204E for AMD's comment.
- P.16 [PCH (POWER) 1/2]Change R366,R325 to 100 ohm for Intel'comment.
- P.16 [PCH (POWER) 1/2]Change C141 to 1U for Intel'comment.
- P.09 [ARD (RESERVED)]Change R1274 to 3.3K for Intel's comment.

(2009/06/30)

- P.25 [VGA (I/O) 3/6]Change JTAG\_TCK to pull-low to GND through a 10K ohm resistor for MOR's request.
- P.25 [VGA (I/O) 3/6]Del R5910 for MOR's request.
- P.25 [VGA (I/O) 3/6]NC R5906,R5907,R5908,R5909 for MOR's request.
- P.26 [VGA (Memory BUS) 4/6]Del C6105,C6106,R5879,R5880 for MOR's request.
- P.28 [VGA (Power) 6/6]Del R5802,R5803 and connect DPE\_VDD18/DPE\_VDD10 to DPF\_VDD18 [2:1]/DPF\_VDD10 [2:1] for MOR's request.
- P.28 [VGA (Power) 6/6]Del L96/C6248/C6249/C6250/L97/C6251/C6252/C6253 for MOR's request.
- P.80 [CPU Power\_VID]Stuff PR638,PR646 for Power request.
- P.80 [CPU Power\_VID]NC PR637,PR645 for Power request.
- P.28 [VGA (Power) 6/6]Del L80/C859/C858/C860/L81/C862/C861/C6291/L82/C6165/C6164/C866 for MOR's comment.

- P.45 [Mini-PCIE Card (WLAN)]Del R824 for MOR's request.
- P.12 [PCH (DMI,FDI,GPIO)]Change R911 to 10K for MOR's request.
- P.54 [Bluetooth Connector]Del C378 for MOR's request.
- P.28 [VGA (Power) 6/6]Del L6,Q7,Q9,R5828,R5829,R5830 because M960/M970 do not use BBP function.
- P.45 [Mini-PCIE Card (WLAN)]NC CN12 15pin and del R18 for RF request.
- P.56 [Status LED & LID]Add LED6/LED7/LED8/LED9 for M970 only.
- P.45 [Mini-PCIE Card (WLAN)]Add R17 and NC it for MOR's request.

(2009/07/01)

- P.25 [VGA (I/O) 3/6]Del TP1104,TP1105,TP1106,TP1230 because these test points are redundant.
- P.28 [VGA (Power) 6/6]Change net name DPE\_VDD18/DPE\_VDD10 to DPEF\_VDD18/DPEF\_VDD10 for the co-use power DPE\_VDD/DPF\_VDD.
- P.84 [HOLE & AMI LABEL]Del BOSS9,BOSS10 for ME request.
- P.84 [HOLE & AMI LABEL]Add CPU hole H21,H22,H23,H24 for CPU socket.
- P.50 [eSATA Combo Conn.]Del eSATA repeater schematic (U214,C766,C776,C759,C745,R5754,R5835,R5756,R5755,R5757,R5758,R5759,C718,C387) for over-design.
- P.10 [PCH (HDA,JTAG,SAT)]Change SPI\_CLK\_SW/SPI\_MOSI\_SW/SPI\_MISO\_SW to SPI\_CLK\_L/SPI\_MOSI\_L/SPI\_MISO\_L for modifying the SW reserve design.
- P.28 [VGA (Power) 6/6]Del R5833,R5834,R5837 and connect U204F AL21 to GND because M960/M970 do not have PowerXpress function.
- P.25 [VGA (I/O) 3/6]Add two connection ATI\_LVDS\_SCL/ATI\_LVDS\_SDA to CN13 5/6 pin and pull-high 4.7K to +3V3\_DELAY for SW request to add EDID function.

(2009/07/02)

- P.38 [LVDS Connector]Connect CN13 Pin1 to LCDVCC for LCD power supply.
- P.38 [LVDS Connector]Connect CN13 Pin34 to GND for LCD power supply.
- P.51 [PCIE (MS&iLINK) 1/2]NC R820/C868/R817/C865/R818/C864 because SD\_CD#/SD\_WP#/MS\_CD# has an internal pull-up resistor and the debouching circuit.
- P.36 [LVDS]Update Panel ID and related information.

(2009/07/03)

- P.10 [PCH (HDA,JTAG,SAT)]Del TP119/TP123/TP133/TP136/TP137/TP138 and R442 because this is SW reserve design.
- P.14 [PCH (PCI,USB,NVRAM)]Del Q39/Q37/R5456/SW5/R300 for changing GNT1#/GNT0# control method.
- P.14 [PCH (PCI,USB,NVRAM)]Add R345/R346 pull-high to +3VRUN for controlling GNT1#/GNT0#.
- P.14 [PCH (PCI,USB,NVRAM)]Change R344/R392/R345/R346 to 10K ohm.
- P.45 [Mini-PCIE Card (WLAN)]Del R17 and change the net name "MINI\_PCIE\_+3\_3V\_R" to "MINI\_PCIE\_+3\_3V" to del RF reserve circuit.
- P.70 [AUDIO (USB)\*]Change U\_CN2/U\_CN3/U\_CN6 to 2N-0004009-MKG0 for ME request.
- P.64 [AUDIO (CODEC)\*]Change U\_R5774 to 100K ohm and change the power source on it from U\_VDDA to U\_+12V because Gate voltage of U\_Q55 is too low.
- P.67 [AUDIO (AUDIO & USB Conn)\*]Move U\_SUS\_ON to U\_CN1 Pin22 and add U\_+12V on Pin7.
- P.62 [AUDIO/USB DB Conn.]Move SUS\_ON to CN31 Pin29 and add +12V on Pin44.
- P.37 [Inverter Connector]Del R400 for MOR's request.
- P.38 [LVDS Connector]Add Q177/Q178/R5736/R5737/C575 and change L98 for rush current issue.
- P.36 [LVDS]Del R136 for redundant design.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Add a NC resistor R979 to let GPIO8 pull-low to GND.
- P.14 [PCH (PCI,USB,NVRAM)]Change Bluetooth USB port to port13.
- P.14 [PCH (PCI,USB,NVRAM)]Change USB External Port-1 to USB port5 and eSATA change to port0.

(2009/07/04)

- P.45 [Mini-PCIE Card (WLAN)]Restore U45,C891 for WIMAX function.
- P.45 [Mini-PCIE Card (WLAN)]Connect 36pin,38pin of CN12 to USB PN12 L/USB PP12 L for WIMAX function.
- P.45 [Mini-PCIE Card (WLAN)]Add J5 to connect Pin42 and Pin44 of CN12 for MOR's request.

|                         |                              |                                  |           |
|-------------------------|------------------------------|----------------------------------|-----------|
| <b>FOXCONN</b>          |                              | HON HAI Precision Ind. Co., Ltd. |           |
|                         |                              | CCPBG - R&D Division             |           |
| Title <b>History(2)</b> |                              |                                  |           |
| Size                    | Document Number              |                                  | Rev       |
| A3                      | <b>M960&amp;M970 H Model</b> |                                  | <b>SA</b> |
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(2009/07/07)

- P.54 [Bluetooth Connector]Add C378 pull-low to GND refer to M930.
- P.56 [Status LED & LID]Del POWER/SUSPEND LED and its related circuit for ID changing.
- P.12 [PCH (DMI,FDI,GPIO)]Change R973 to 2.2K ohm for MOR's requirement.
- P.28 [VGA (Power) 6/6]Add R5816 between GND to PX\_EN and set N.C for MOR's request.
- P.38 [LVDS Connector]Add Q177 and related RC for protecting rush current.
- P.61 [AUDIO Speaker Conn]Del Q28/Q30/Q53 and connect Q25 and Q27 because short protection circuit can marge L channel and R channel.
- P.04 [ARD (CLK,MISC,JTAG)]Add Q72 for Intel S3 Power Reduction issue.
- P.72 [DCIN&Charger]Delete PR17.
- P.75 [SYS Power (+3\_3V/+5V)]Delete close\_jump GP2.
- P.77 [DDR3 Power(+1\_5V/+0\_75V)]Change 1.5VSUS full load from 12A to 13A.
- P.77 [DDR3 Power(+1\_5V/+0\_75V)]Change PR654 from 46.4k to 49.9k
- P.82 [Others power plane]Change 1.5VRUN full load form 6A to 7A.
- P.82 [Others power plane]Add 1.5VRUN discharge circuit (add PR660 330ohm,PQ71 2N7002EPT).
- P.38 [LVDS Connector]Del R474/R473 and related EDID circuit for disabling EDID.

(2009/07/08)

- P.56 [Status LED & LID]Add Q18/Q21/Q48/Q51/R384/R390/R690/R691/R694/R695 for POWER/SUSPEND LED location changing.
- P.54 [Bluetooth Connector]Del C378 because C377 has the same function.
- P.40 [EC+KBC(NPCE783L)]Add SYSTEM\_ID3 (R5891/R5900) for SKU control.
- P.25 [LVDS Connector]NC CN13 Pin3 because EDID is disabled.
- P.63 [SWITCH (Botton & KB LED)\*]Del P\_SW3 and add P\_CN4 for POWER/SUSPEND LED location changing.
- P.56 [Status LED & LID]Change Q18/Q21/Q50 to DTC114EUB for MOR's request.
- P.07 [ARD (GRAPHICS POWER)]Change VDDQ power source from +1\_5VSUS to +1\_5VRUN for Intel S3 Power Reduction issue.
- P.60 [SWITCH DB Conn.]Change CN2 to 14pin type for POWER/SUSPEND LED location changing.
- P.63 [SWITCH (Botton & KB LED)\*]Change P\_CN3 to 14pin type for POWER/SUSPEND LED location changing.
- P.51 [PCIE (MS&iLINK) 1/2]Change CN36 type for ME request.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Set GPIO27 as RST\_GATE for Intel S3 Power Reduction issue.
- P.75 [SYS Power (+3\_3V/+5V)]Change NC PR118 to NO NC PR118 and NC PR234,PR235.
- P.83 [OVP protection]Delete reserved Power limit circuit(delete PU2,PU11,PD22 ,PR22,PR24,PR142,PR143,PR149,PR153,PR159,PR213,PR214,PC26,PC27,PC28) .
- P.83 [OVP protection]change PR218 from 37k to 45.3k.
- P.11 [PCH (PCI-E,SMBUS,CLK)]Del R1590/R1591/R1592/Q73/Q74 and rename SMB\_DATA\_SB/SMB\_CLK\_SB to SMB\_DATA\_R/SMB\_CLK\_R.
- P.10 [PCH (HDA,JTAG,SAT)]Del R1552/R1554 and rename SPI\_CLK\_L/SPI\_MOSI\_L to SPI0\_CLK/SPI0\_MOSI for redundant design.
- P.10 [PCH (HDA,JTAG,SAT)]Add R5910 on SATA\_LED# which is pull-high to +3VRUN for Intel comment.
- P.04 [ARD (CLK,MISC,JTAG)]NC R1451/R1452 and stuff R1450/R1453 refer to M930.
- P.52 [PCIE (SD) 2/2]Change CN29 type for ME request.
- P.58 [Touch Pad]Change SW2/SW3/SW6/SW7 type for ME request.

(2009/07/09)

- P.24 [VGA (Strap) 2/6]Change memory aperture size description for SW request.
- P.68 [AUDIO (Head Phone Jack)\*]Change Pin7/Pin8 of U\_CN4 to U\_A\_GND for Layout request.
- P.14 [PCH (PCI,USB,NVRAM)]Change USB\_OC#5/USB\_OC#4 to Pin7/Pin8 of RP18 for Layout request.
- P.07 [ARD (GRAPHICS POWER)]Add a Open-Jump PJ43 between +1\_5VRUN to VDDQ.
- P.06 [ARD (POWER)]Del R856/R857 for MOR's request.

- P.07 [ARD&CFD (GRAPHICS POWER)]Del R864/R866/R868/R869/R871 for MOR's request.
- P.51 [PCIE (MS&iLINK) 1/2]Add damping resistors (R5911~R5919) on each MS signal.
- P.52 [PCIE (SD) 2/2]Change C518/C522 to X5R type for MOR's request.
- P.52 [PCIE (SD) 2/2]Add damping resistors (R5920~R5924) on each SD signal.
- P.52 [PCIE (SD) 2/2]Change C767 to 10pF for MOR's request.
- P.56 [Status LED & LID]Del LED7/LED8/LED10 for ME request.
- P.38 [LVDS Connector]Add NC Cap. (C6306~C6313) between each LVDS differential lane.
- P.46 [LAN (88E8057) 1/2]Modify R94/R97/C997 description.
- P.46 [LAN (88E8057) 1/2]Change all resistors and caps to 88E8059 setting.
- P.84 [HOLE & AMI LABEL]Add H25/H26/H27/H28 for ME request.
- P.35 [CRT]Change CN20 type for ME request.
- P.70 [AUDIO (USB)\*]Change U\_CN2/U\_CN3/U\_CN6 type for ME request.
- P.84 [HOLE & AMI LABEL]Del H11/H12/H13/H15/H16/H17/H18/H19/H20 for ME request.
- P.44 [Express Card]Rename PCIE\_EXPRESS\_WAKE# to PCIE\_WAKE# to del reserve design.
- P.12 [PCH (DMI,FDI,GPIO)]Del R290 and PCIE\_EXPRESS\_WAKE# off-page to del reserve design.
- P.82 [Others power plane]Add 0.75V RUN discharge circuit(add PR661 330ohm) .
- P.82 [Others power plane]Change PQ71 from 2N7002EPT to ME2N7002KW.
- P.04 [ARD (CLK,MISC,JTAG)]Del the description of RST\_GATE and add a 1k ohm resister R5925 between +1\_5VSUS and DDR3\_DRAMRST#.
- P.04 [ARD (CLK,MISC,JTAG)]Add R5926/R5927/U217 for Intel S3 Power Reduction issue.
- P.04 [ARD (CLK,MISC,JTAG)]Del R928/R929 and related description for Intel S3 Power Reduction issue.
- P.53 [Camera Connector]Add R5928/R5929/C6314/C6315 For EMI verification.
- P.37 [Inverter Connector]Add R5930 For EMI verification.

(2009/07/10)

- P.22 [Braidwood Connector]Del P.22 and change the page number from 23~87 to 22~86 for removing Braidwood function.
- P.14 [PCH (PCI,USB,NVRAM)]Del all Braidwood-related off-page for removing Braidwood function.
- P.49 [eSATA Combo]Swap L62/L66/L67 for layout request.
- P.62 [SWITCH (Botton & KB LED)\*]Change the description "Instant On" to "Web(Instant On) for SW request".
- P.50 [PCIE (MS&iLINK) 1/2]Del R820/C868/R817/C865/R818/C864 for Ricoh's FAE suggest.
- P.50 [PCIE (MS&iLINK) 1/2]Add description of C794/C771/C774/C992 for Ricoh's FAE suggest.
- P.50 [PCIE (MS&iLINK) 1/2]Add description of C790/C769/C770/C772/C799 for Ricoh's FAE suggest.
- P.50 [PCIE (MS&iLINK) 1/2]Add description of C716/C717 for Ricoh's FAE suggest.
- P.38 [HDMI]Connect Q57 D/S to +5VRUN\_L188/+5VRUN\_F.
- P.37 [LVDS Connector]Connect Q177 D/S to DCBATOUT\_L/DCBATOUT.
- P.39 [EC+KBC(NPCE783L)]Change net name "KB\_PRESENCE#" to "INST\_ON\_SW#" for SW request.
- P.71 [DCIN&Charger]Delete NC PR12.
- P.71 [DCIN&Charger]Change charge voltage form 12.48V to 12.465V for MOR request (change PR25 form 200k\_F to 210K\_F, change PR27 from 100K\_F to 100K\_D) .
- P.73 [Identify IC]Change PC66 from 0.1u 16v 0402\_Y5V to 0.1u 10v 0402\_X5R.
- P.73 [Identify IC]Change NC PC65 1u 10v 0603\_X5R to NC PC65 1u 10v 0402\_X5R.
- P.78 [CPU Power\_VHOCORE]Change PC112 from 100U\_25V\_M\_φ6.3\*7.7mm to 68uF\_25V\_M\_φ6.3\*5.8mm.

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(2009/07/11)

- P.36 [Inverter Connector]Reverse CN5.
- P.62 [SWITCH (Botton & KB LED)\*]Reverse P\_CN3.
- P.37 [LVDS Connector]Add description on the circuit for inrush current issue of M870.
- P.34 [CRT]Change F2 type for PUR request.
- P.63 [AUDIO (CODEC)\*]Change U\_C459/U\_C476/U\_C787 type for PUR request.
- P.07 [ARD (GRAPHICS POWER)]Add net name "+1\_5VRUN\_J".
- P.14 [PCH (PCI,USB,NVRAM)]Del R344/R392 and the description about Boot-BIOS for SW request.
- P.52 [Camera Connector]Add net name DMIC\_CLK R/DMIC\_DAT R and connect TP1160/TP1161 to the new net for TE request.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]Reconnect SPR2/J2 to CN34 and CN35 for EMC request.
- P.10 [PCH (HDA,JTAG,SAT)]Reverse CN26.
- P.38 [HDMI]Change CN21 type for ME request.
- P.60 [AUDIO Speaker Conn]Swap JSPK1 for ME request.

(2009/07/13)

- P.51 [PCIE (SD) 2/2]Change U22 to G553E1P11U to meet MOR's request for SD.
- P.57 [Touch Pad]Reverse CN8 for ME request.
- P.62 [SWITCH (Botton & KB LED)\*]NC P\_VR2 for EMC reserve.
- P.50 [PCIE (MS) 1/2]Del all i-Link related description.
- P.36 [Inverter Connector]Reverse CN5.
- P.83 [HOLE & AMI LABEL]Change H2/H3/H4/H5/H6/H7/H10/H14 type for ME request.
- P.25 [VGA (Memory BUS) 4/6]Change C6100 type for PUR request.
- P.71 [DCIN&Charger]Delete EC3 and C907.
- P.79 [CPU Power VHCORE]Change PC566 from 0.1U\_6.3V\_K to 0.1U\_16V\_K (HH PN:1C-2B20104-K300).
- P.82 [OVP protection]Change PQ3 from IRLML5103TRPbF to SI2303BDS.
- P.04 [ARD (CLK,MISC,JTAG)]Change U217 SUS\_PWRGD to RUN\_PWRGD.
- P.63 [AUDIO (CODEC)\*]Paste the schematic from P.48 of L model for MOR's request and Layout concern.
- P.64 [AUDIO (MUTE)\*]Paste the schematic from P.49 of L model for MOR's request and Layout concern.
- P.65 [AUDIO (Power)\*]Paste the schematic from P.50 of L model for MOR's request and Layout concern.
- P.66 [AUDIO (AUDIO & USB Conn)\*]Paste the schematic from P.51 of L model for MOR's request and Layout concern.
- P.67 [AUDIO (Head Phone Jack)\*]Paste the schematic from P.52 of L model for MOR's request and Layout concern.
- P.68 [AUDIO (Ext MIC Jack)\*]Paste the schematic from P.53 of L model for MOR's request and Layout concern.
- P.69 [AUDIO (USB)\*]Paste the schematic from P.54 of L model for MOR's request and Layout concern.
- P.04 [ARD (CLK,MISC,JTAG)]Change R5926/R5927 to 1.5K/750 ohm for intel's comment.
- P.81 [Others power plane]Change PR661 from 330ohm to 33ohm.

(2009/07/14)

- P.38 [HDMI]Swap RP55/RP57/RP59/RP61 for Layout request.
- P.49 [eSATA Combo]Swap L62/L66/L67 for Layout request.
- P.37 [LVDS Connector]Swap Pin1 CN13 to Pin3 CN13 for cable design.
- P.83 [HOLE & AMI LABEL]Change H4/H5/H7 footprint for ME request.
- P.71 [DCIN&Charger]NC PR76 and PR77.
- P.78 [CPU Power\_VHCORE]Change PR555 and PR569 from 2.7K to 2.21K.
- P.78 [CPU Power\_VHCORE]NC PC260 ,NC PC261.
- P.39 [EC+KBC(NPCE783L)]Pull-high INST\_ON\_SW# to +ECVCC for SW request.
- P.76 [DDR3 Power(+1.5V/+0.75V)]Add PQ59(2N7002EPT)/PR600(100K)/PC570(1U\_10V\_K), then NC PQ59/PR600/PC570.

(2009/07/15)

- P.48 [SATA CD-ROM]NC CN37 for ME request.
- P.39 [EC+KBC(NPCE783L)]Del R5858 for redundant design.
- p.78 [CPU Power\_VHCORE]change PC112 from NOCHICON to Panasonic.
- P.24 [VGA (I/O) 3/6]Connect GPIO\_3/GPIO\_4 to SMB\_THRM\_DATA/SMB\_THRM\_CLK for MOR's request.
- P.09 [ARD (RESERVED)]Del RP83 and DQ\_VREF off-page and add two test point to CPU for Intel's comment.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]Del C35/C45/R1283 and DQ\_VREF0 off-page for Intel's comment.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]Connect VREF\_DQ ato VREF\_CA for Intel's comment.
- P.21 [DDRIII(SO-DIMM\_1) 2/2]Del C37/C44/R1284 and DQ\_VREF1 off-page for Intel's comment.
- P.21 [DDRIII(SO-DIMM\_1) 2/2]Connect VREF\_DQ ato VREF\_CA for Intel's comment.
- P.83 [HOLE & AMI LABEL]Add H29/H30/PAD1/PAD2/PAD3 for EMC request.
- P.83 [HOLE & AMI LABEL]Change H28/H25 type for ME request.

(2009/07/16)

- P.83 [HOLE & AMI LABEL]Change PAD1/PAD2/PAD3 for CIS request.
- P.23 [VGA (Strap) 2/6]Modify description of VRAM.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]Restore C35/C41 for MOR's request.
- P.21 [DDRIII(SO-DIMM\_1) 2/2]Restore C37/C44 for MOR's request.

(2009/07/17)

- P.78 [CPU Power\_VHCORE]Change PR565 from 10k to 1.8k, change PC566 from 0.1u to 0.022u.

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(2009/07/21)

- p.1~88 [Page Data]Update all page data.

(2009/07/24)

- P.84 [Braidwood Connector]Add CN39 and its related schematic for layout estimation.
- P.14 [PCH (PCI,USB,NVRAM)]Add Braidwood related schematic for layout estimation.

(2009/07/30)

- P.84 [Braidwood Connector]Del CN39 and its related schematic for layout estimation.
- P.78 [CPU Power\_VHCORE]Delete PJ42.
- P.80 [VGA Power(ATI\_VDD)]Delete PJ30, NC PR210, Change PR183 from 20K to 15.4K, Change PR550 from 2.7k to 5.36k.

(2009/08/13)

- P.39 [EC+KBC(NPCE783L)]Del R5852 for OVT\_EC# double pull-high.
- P.13 [PCH (LVDS,DDI)]Change R223 from 0.5% to 5% for RGB disable guide.
- P.60 [AUDIO Speaker Conn]Change JSPK1 to 1N-0004003-MIT0 for ME request.
- P.66 [AUDIO (AUDIO & USB Conn)\*]Reverse U\_CN1 for moving U\_CN1 from TOP to BOT side.
- P.67 [AUDIO (Head Phone Jack)\*]Changen U\_CN4 to 2N-000600N-FKG0.
- P.68 [AUDIO (Ext MIC Jack)\*]Change U\_CN5 to 2N-000600C-FRG0.
- P.69 [AUDIO (USB)\*]Change U\_USB\_OC#1/2/3 to U\_USB\_OC#0/2.
- P.66 [AUDIO (AUDIO & USB Conn)\*]NC U\_USB\_OC#3 and Change U\_USB\_OC#1/2 to U\_USB\_OC#0/2.
- P.61 [AUDIO/USB DB Conn.]NC U\_USB\_OC#3 and Change U\_USB\_OC#1/2 to U\_USB\_OC#0/2.
- P.14 [PCH (PCI,USB,NVRAM)]Del off-page USB\_OC#1/3.
- P.27 [VGA (Power) 6/6]Change Q77 to 17-2N7002W-0000 for PUR request.
- P.04 [ARD (CLK,MISC,JTAG)]Change Q72 to 17-2N7002W-0000 for PUR request.
- P.38 [HDMI]Change Q13 to 17-2N7002W-0000 for PUR request.
- P.78 [CPU Power\_VHCORE]Delete NC\_PC260, NC\_PC261.

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| Title <b>History(4)</b> |   |  |                  |
| Size<br>A3              | Document Number<br><b>M960&amp;M970 H Model</b> |  | Rev<br><b>SA</b> |
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(2009/08/18)

- P.34 [CRT]Change F2 to 0.35A.
- P.83 [HOLE & AMI LABEL]Add H31 and change H1/H27/PAD1/PAD2/PAD3 for ME request.
- P.49 [eSATA Combo]Swap CN27B.
- P.43 [Express Card]Change R5457 to 470K and add NC R686 for MOR request.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Change RST\_GATE from GPIO27 to GPIO46 , Stuff R982,NC R977.
- P.46 [LAN (Transformer) 2/2]Change L70 for cost down.
- P.51 [AUDIO (CODEC)\*]Change U\_U215.
- P.25 [VGA (Memory BUS) 4/6]Change R5795,R5809,R5796,R5810 from 1R-000402X-F200 to 1R-0000101-F200 for vendor request.
- P.27 [VGA (Power) 6/6]Stuff R5816 for vendor request.
- P.24 [VGA (I/O) 3/6]Change R5793 from 1R-0000000-J200 to 1R-0000101-F200 and change R5794 from 1R-0000000-J200 to 1R-0000121-F200 for vendor request.
- P.31 [VRAM(DDR3)# 4/4]NC R5727 for vendor request.
- P.55 [Status LED & LID]Change U21 to 15-EC2648B-0000 for cost down.
- P.71 [DCIN&Charger] Change PQ5,PQ16,PQ34 to 17-2N7002W-0000 for materials shortage.
- P.76 [DDR3 Power(+1.5V/+0.75V)] Change PQ59 to 17-2N7002W-0000 for materials shortage.
- P.82 [OVP protection] Change PQ9,PQ17 to 17-2N7002W-0000 for materials shortage.
- P.81 [Others power plane] Change PQ29,PQ45,PQ48 to 17-2N7002D-W001 for materials shortage.
- P.83 [HOLE & AMI LABEL]Change H29/H30 for ME request.

(2009/08/24)

- P.69 [AUDIO (USB)\*]Change U\_CN2/U\_CN3/U\_CN6 for ME request.
- P.60 [AUDIO Speaker Conn]Change JSPK1 for ME request.
- P.34 [CRT]Change CN20 for ME request.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Change R977 from NC to Stuff and change R982 from Stuff to NC.

(2009/08/25)

- P.83 [HOLE & AMI LABEL]Change H26 for ME request.

(2009/08/27)

- P.83 [HOLE & AMI LABEL]Change H30 for ME request.

(2009/08/31)

- P.71 [DCIN&Charger]Change PCN1 to BP92071-B81E2-7H for ME request.
- P.48 [SATA HDD]Change CN33 to LN21131-D40L-9H for ME request.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Add R5931/R5932/R5933/R5934 and change R5866 to 100K to pull-high LCDID for PE request.
- P.35 [LVDS]Add R5935/R5936/R5937/R5938/R5939/R5940 to pull-low LCDID for PE request.

(2009/09/01)

- P.56 [FAN]Del TP1163.
- P.63 [AUDIO (CODEC)\*]Add ALC269 co-lay schematic and del U\_TP229, U\_TP231, U\_TP228.
- P.14 [PCH (PCI,USB,NVRAM)]Del R1575 for redundant design (double pull-low).
- P.64 [AUDIO (MUTE)\*]Add ALC265 co-lay schematic.
- P.10 [PCH (HDA,JTAG,SAT)]NC R5910 for redundant design (double pull-high).
- P.74 [SYS Power (+3.3V/+5V)]Move TP215 from +5VALW\_PWM to +5VALW for power test.
- P.74 [SYS Power (+3.3V/+5V)]Move TP219 from +3VALW\_PWM to +3VALW for power test.
- P.75 [SYS Power(+1.05V\_VTT)]Add TP504 for +1.05V\_VTT power test.
- P.78 [CPU Power\_VHCORE]Add TP507,TP223,TP224 for VHCORE power test.
- P.79 [CPU Power\_VID]Add TP225~ TP233 for power test.
- P.80 [VGA Power (ATI\_VDD)]Change PR184 rome 1K to 100ohm, NC PC160 for vendor suggest.
- P.80 [VGA Power (ATI\_VDD)]Add TP221,TP222 for power test.
- P.80 [VGA Power (ATI\_VDD)]Add PR662 and PC571 for vendor suggest.
- P.80 [VGA Power (ATI\_VDD)]Add PC572(NC) for vendor suggest.

(2009/09/03)

- P.25 [VGA (Memory BUS) 4/6]Stuff R5798, R5800, R5799, R5802, R5803, R5804 for Madison/Park only.
- P.25 [VGA (Memory BUS) 4/6]Change R5806, R5807 to 0 ohm for Madison/Park only.
- P.27 [VGA (Power) 6/6]Stuff L89,C6187,C6186,C6185 for Madison/Park only.
- P.27 [VGA (Power) 6/6]Stuff R5811 for Madison/Park only.
- P.22 [VGA (PCI-E) 1/6]Stuff R5831 for Madison/Park only.
- P.27 [VGA (Power) 6/6]NC L76,L77,C6155,C6158 for Madison/Park only.
- P.27 [VGA (Power) 6/6]Stuff L92, C6233, C6234, C6236, R5812 for Madison/Park only.
- P.27 [VGA (Power) 6/6]Stuff L26, NC L30 for Madison/Park only.
- P.27 [VGA (Power) 6/6]Stuff L90, C6192, C6193, C6194, C6195, C6196 for Madison/Park only.
- P.27 [VGA (Power) 6/6]Stuff L91, C6197, C6199, C6200 for Madison/Park only.
- P.27 [VGA (Power) 6/6]NC R5815 for Madison/Park only.
- P.55 [Status LED & LID]Move R390/R384 to Drain side of Q51/Q48 for MOR comment.
- P.37 [LVDS Connector]Change CN13 to M870 type (1N-0040000-FWG0).
- P.59 [SWITCH DB Conn.]Change CN2 to 12pin type (1N-0012002-F0T0).
- P.62 [SWITCH (Botton & KB LED)\*]Change P\_CN3 to 12pin type (1N-0012002-F0T0).
- P.62 [SWITCH (Botton & KB LED)\*]Move NUM LOCK LED/CAP LED/SCROLL LOCK LED driving circuit to MB for MOR comment.
- P.55 [Status LED & LID]Add NUM LOCK LED/CAP LED/SCROLL LOCK LED driving circuit for MOR comment.
- P.09 [ARD (RESERVED)]Del test points for MOR comment.
- P.11 [PCH (PCI-E,SMBUS,CLK)]Del test points for MOR comment.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Del test points for MOR comment.
- Test Points[TP109/TP193/TP181/TP208/TP209/TP211/TP210/TP212/T213/TP214/TP235/TP236/TP265/TP266/TP237/TP239/TP327/TP328/TP329/TP256/TP257/TP259/TP260/TP262/TP263/TP264/TP284/TP287/TP288/TP289/TP290/TP291/TP292/TP293/TP294/TP295/TP296/TP297/TP298/TP425/TP1116/TP1117/TP1118/TP1119/TP140/TP147/TP148/TP149/TP148/TP145/TP144/TP134TP1120/TP1121/TP1122/TP1123/TP1124/TP188/TP183/TP88/TP91/TP93/TP101/TP412/TP416/TP415/TP417/TP414/TP421/TP422/TP423/TP424]
- P.09 [ARD (RESERVED)]Del RP87 for MOR and Intel comment.
- P.43 [Status LED & LID]Add LED test points TP1223/TP1224/TP1225/TP1226/TP1227/TP1228/TP1229/TP1230.
- P.10 [PCH (HDA,JTAG,SAT)]Change U98 to W25Q32BVSSIG.
- P.63 [AUDIO (CODEC)\*]Del U\_U7 and U\_C155 for Realtek suggestion.
- P.16 [PCH (POWER) 1/2]Del R897, R989 for MOR comment.
- P.17 [PCH (POWER) 2/2]Del R428, R958 for MOR comment.
- P.04 [ARD (CLK,MISC,JTAG)]Add R5950, C6316, R5951, R5949, R5948, C6317 for Intel S3 issue.



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(2009/09/08)

- P.63 [AUDIO (CODEC)\*]Change U\_R327 to 1K.
- P.71 [DCIN&Charger]NC PR33 for costdown.
- P.80 [VGA Power (ATI VDD)]Add PR663(NC) and PC573(NC) for vendor suggest.
- P.82 [OVP protection]PR167 change to 26.1K, PR169 change to 80.6K , PR171 change to 18.2K for OVP Adjust
- P.82 [OVP protection]Use SW PWRLIMIT function replaced HW PWRLIMIT circuit for costdown. (NC PU31, PC567, PR223, PR629, PR219, PR218, PR78, PC46.)
- P.62 [SWITCH (Botton & KB LED)\*]Change P\_VR1/P\_VR2/P\_VR3/P\_VR4 to 19-MLVS060-5000.
- P.39 [EC+KBC (NPCE783L)]Change C27/C26 to 15p for Crystal vendor comment.
- P.10 [PCH (HDA,JTAG,SAT)]Change C727/C702 to 15p for Crystal vendor comment.
- P.50 [PCIE (MS) 1/2]Change C785/C786 to 22p for Crystal vendor comment.
- P.49 [eSATA Combo Conn.]Add eSATA reperator schematic and NC it.
- P.10 [PCH (HDA,JTAG,SAT)]Change CN18 to GB5RF120-1203-7F for Halgen Free.
- P.42 [Debug Port]Change CN30 to GB5RF120-1203-7F for Halgen Free.
- P.54 [Felica Connector]Add Felica power supply schematic as Pokerman type for MOR request.
- P.14 [PCH (PCI,USB,NVRAM)]Change USB OC# signal to EVT type for MOR request.
- P.41 [SPI Flash ROM]Change U23 to W25X10BVSNIG for SW comment.
- P.63 [AUDIO (CODEC)\*]Move U\_R5774 to P.60 and rename to R5968.
- P.61 [AUDIO/USB DB Conn.]NC +12V and add a +5VALW pin for USB VEVS test.
- P.66 [AUDIO (AUDIO & USB Conn)\*]NC U\_+12V to a U\_+5VALW pin for USB VEVS test.
- P.61 [AUDIO/USB DB Conn.]Change CN31 to 1N-00500004-F0T0 for ME request.
- P.66 [AUDIO (AUDIO & USB Conn)\*]Change U\_CN1 to 1N-00500004-F0T0 for ME request.
- P.45 [LAN (88E8057) 1/2]Add R5965/R5966/R5967 for 88E8057/88E8059 co-lay.
- P.61 [AUDIO/USB DB Conn.]Change CN31 Pin 43 to GND.
- P.66 [AUDIO (AUDIO & USB Conn)\*]Change U\_CN1 Pin 43 to GND.
- P.55 [Status LED & LID]Change Q49/Q179/Q180/Q181 to 17-DTA114Y-UB00 for PUR suggest.
- P.44 [Mini-PCIE Card (WLAN)]Change Q5 to 17-DTC144E-UB00 for PUR suggest.
- P.56 [FAN]Change Q80 to 17-DTC144E-UB00 for PUR suggest.
- P.71 [DCIN&Charger]Change TP1148,TP1149,TP1150,TP1151 from DC\_IN\_1 to P+ for power test.
- P.71 [DCIN&Charger]Change PQ16,PR76,PR77 from NC to mount for EC PWRLIMIT function.
- P.71 [DCIN&Charger]Change PR79 from 0 to 3.48K, change PR11 from 20K to 12K for EC PWRLIMIT function.
- P.73 [Identify IC]Add PD31 and change PR68 from 10K to 4.7K for MOR side request.
- P.81 [Others power plan]Delete TP189,TP203 for power test.

(2009/09/09)

- P.42 [Debug Port]Del TP1186~TP1193.
- P.24 [VGA (I/O) 3/6]Add ATI\_LVDS\_SCL/ATI\_LVDS\_SDA for EDID function.
- P.37 [LVDS Connector]Add ATI\_LVDS\_SCL/ATI\_LVDS\_SDA for EDID function.
- P.74 [SYS Power (+3.3V/+5V)]Change PR652,PR245 from NC to mount 4.7ohm. Change PC568,PC272 from NC to mount 680pF for EMI suggest.
- P.75 [SYS Power(+1.05V\_VTT)]Change PR188 from NC to mount 4.7ohm, Change PC170 from NC to 680pF for EMI suggest.
- P.76 [DDR3 Power(+1.5V/+0.75V)]Change PR41 from NC to mount 4.7ohm, Change PC42 from NC to mount 680pF for EMI suggest.
- P.80 [VGA Power (ATI VDD)]Change PR163 from NC to mount 4.7ohm, Change PC133 from NC to mount 680pF for EMI suggest.
- P.52 [Camera Connector]Del R5928/R5929 and add L93/L94 for EMC request for DMIC noise.
- P.52 [Camera Connector]Mount C6314/C6315 for EMC request for DMIC noise.
- P.60 [AUDIO Speaker Conn]Del R5870, R5871, R5872, R5873 and Add L95, L96, L97, L98 for EMC request to filtrate SPK noise.
- P.37 [LVDS Connector]Add C6324/C6325 for EMC request for 150MHz powerbase issue.

- P.42 [Felica Connector]Change Felica power supply from +5VSUS to +3VSUS.
- P.51 [PCIE (SD) 2/2]Change R391 to 100K for MOR request.
- P.43 [Express Card]NC Q38, R5457 and mount R686 for MOR comment.

(2009/09/10)

- P.37 [LVDS Connector]Add CN13 Pin40 for EDID function.
- P.44 [Mini-PCIE Card (WLAN)]Add C6329/C6330 for EMI request.
- P.16 [PCH (POWER) 1/2]Add C6326/C6327/C6328 for EMI request.
- P.62 [SWITCH (Botton & KB LED)\*]Change P\_LED1/P\_LED2/P\_LED3 to HT-170UYG.
- P.81 [Others power plane]Add C6332/C6333 on +3VSUS for EMI request.
- P.81 [Others power plane]Add C6334/C6335/C6336 on +3VRUN for EMI request.
- P.45 [LAN (88E8059) 1/2]Del R97 and add C6341 for Marvell FAE request.
- P.45 [LAN (88E8059) 1/2]Del R5966, R5967 for Marvell FAE request.
- P.45 [LAN (88E8059) 1/2]Change C993 to 10u for Marvell FAE request.
- P.43 [Express Card]Correct Express Card SPEC.
- P.48 [SATA CD-ROM]Del CN37 for MOR request.
- P.61 [AUDIO/USB DB Conn.]Add F1 for MOR comment.
- P.66 [AUDIO (AUDIO & USB Conn)\*]rename U\_+5VALW to U\_+5VALW\_IN for MOR comment.
- P.69 [AUDIO (USB)\*]Del U\_F1 and rename U\_+5VALW to U\_+5VALW\_IN for MOR comment.
- P.83 [HOLE & AMI LABEL]Del BOSS2 for MOR request.
- P.63 [AUDIO (CODEC)\*]Change U\_R321 to 100K for MOR request.
- P.64 [AUDIO (MUTE)\*]NC U\_C472 for MOR comment.
- P.68 [AUDIO (Ext MIC Jack)\*]NC U\_R42, U\_R46 for MOR comment.
- P.68 [AUDIO (Ext MIC Jack)\*]Del U\_C26, U\_C31 and add U\_R5791, U\_R5792 for MOR comment.
- P.68 [AUDIO (Ext MIC Jack)\*]NC U\_R42, U\_R46 for MOR comment.
- P.63 [AUDIO (CODEC)\*]NC U\_C923.
- P.67 [AUDIO (Head Phone Jack)\*]Change U\_GND to U\_A\_GND for Realtek FAE suggest.
- P.37 [LVDS Connector]NC CN13 Pin7.

(2009/09/11)

- P.71 [DCIN&Charger]Change PR15 to RLM12FTSR020 for PUR request.
- P.71 [DCIN&Charger]Change PF1 to 0437007.WR for PUR request.
- P.37 [LVDS Connector]Change CN13 for Halgen-free.
- P.60 [AUDIO Speaker Conn]Swap JSPK1 for layout concern.
- P.44 [Mini-PCIE Card (WLAN)]Change SW4 to 1BS007-12110-002-7H for ME request.
- P.55 [Status LED & LID]Change LED3/LED4 vendor to Everlight.
- P.67 [AUDIO (Head Phone Jack)\*]Change U\_A\_GND to U\_GND for Realtek FAE suggest.
- P.63 [PCIE (SD) 2/2]Change CN29 to WK21923-S6P3-4H for ME request.
- P.10 [PCH (HDA,JTAG,SAT)]Change CN18 to No Halgen-free.
- P.42 [Debug Port]Change CN30 No Halgen-free.
- P.62 [SWITCH (Botton & KB LED)\*]Change P\_CN3 to No Halgen-free.
- P.59 [SWITCH DB Conn.]Change CN2 to No Halgen-free.
- P.56 [FAN]Change CN14 to No Halgen-free.
- P.60 [AUDIO Speaker Conn]Change JSPK1 to No Halgen-free.
- P.83 [HOLE & AMI LABEL]Change H2/H4/H5 for ME request.
- P.39 [EC+KBC (NPCE783L)]NC U216 Pin8 and del R575.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Connect DIS\_FAN\_MON# to U69F GPIO57 and pull-high to +3VRUN.
- P.39 [EC+KBC (NPCE783L)]NC U4A Pin20 and add SYSTEM\_ID1 off-page.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Connect SYSTEM\_ID1 to U69F GPIO17 and del R965.
- P.39 [EC+KBC (NPCE783L)]NC U4A Pin27 and add SYSTEM\_ID0 off-page.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Connect SYSTEM\_ID0 to U69F GPIO16 and NC RP19 Pin7.
- P.39 [EC+KBC (NPCE783L)]NC U216 Pin9.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Connect PM\_SLP\_ME# to U4B GPIO26.
- P.39 [EC+KBC (NPCE783L)]Del R5853 and connect INST\_ON\_SW# to GPIO12.
- P.39 [EC+KBC (NPCE783L)]NC U216 Pin3 and connect WLAN\_EN to U4A Pin20.
- P.39 [EC+KBC (NPCE783L)]NC U216 Pin4 and connect BT\_ON to U4A Pin27.

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(2009/09/11)

- P.39 [EC+KBC(NPCE783L)]NC U216 Pin5/Pin6 and connect AC\_OFF/EC\_PWRLIMIT\_CTRL to U4A Pin119/Pin120.
- P.39 [EC+KBC(NPCE783L)]Del R5855/R5856/C6201/C6202.
- P.39 [EC+KBC(NPCE783L)]Connect AC\_Present to U4A Pin124.
- P.39 [EC+KBC(NPCE783L)]Del U216/R5857/C6203.
- P.25 [VGA (Memory BUS) 4/6]Change C6100 to UMK105CH680KW-F for PUR request.
- P.34 [CRT]Del F2 for MOR comment.
- P.63 [AUDIO (CODEC)\*]Del U\_R5773/U\_Q64/U\_R5771/U\_R5783/U\_U215/U\_R5784 for MOR comment.
- P.63 [AUDIO (CODEC)\*]Move U\_AMP\_PD# to U\_U18 Pin4.
- P.64 [AUDIO (MUTE)\*]Mount U\_R352/U\_R351/U\_Q17/U\_R349/U\_Q15/U\_R341 for MOR comment.
- P.25 [VGA (Memory BUS) 4/6]Change R5795/R5796/R5809/R5810 to 40.2 ohm for AMD comment.
- P.34 [CRT]NC R5752 for no need of semi-PNP function.

(2009/09/12)

- P.80 [VGA Power (ATI\_VDD)] Change PC159/PC160 to 1C-2B20105-K100(NC) for more stability.
- P.01 [Index page]Update information.
- P.02 [BLOCK DIAGRAM]Update information.
- P.10 [PCH (HDA,JTAG,SAT)]Update SPI ROM information.
- P.49 [eSATA Combo Conn.]Del F10 for no need.
- P.49 [LVDS Connector]Add F15/L99 to follow M870.
- P.10 [PCH (HDA,JTAG,SAT)]Add 100K pull-low resistors R5969/R5970/R5971 on SPI0\_MOSI/SPI0\_CLK/SPI0\_CS# for Intel EDS request.
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)]Change R943/R974/R982/R1626 to 1R-0000103-J200.
- P.63 [AUDIO (MUTE)\*]Change U\_R340/U\_R350/U\_R663 to 1R-0000103-J200.
- P.62 [AUDIO (CODEC)\*]Change U\_R652/U\_R662 to 1R-0000103-J200.
- P.52 [Camera Connector]Add R5972/F16 for adding fuse solution.
- P.25 [LVDS Connector]NC CN13 Pin1/Pin5/Pin6 for del EDID function.
- P.24 [VGA (I/O) 3/6]NC U204B ATI\_LVDS\_SCL/ATI\_LVDS\_SDA for del EDID function.
- P.20 [DDRIII(SO-DIMM\_0) 1/2]NC CAP13 for no need.
- P.21 [DDRIII(SO-DIMM\_1) 2/2]NC CAP22 for no need.
- P.25 [VGA (Memory BUS) 4/6]Change Madison/Park description.
- P.25 [VGA (Memory BUS) 4/6]NC R5806/R5807/R5808 for AMD comment.
- P.63 [AUDIO (CODEC)\*]Change the setting to ALC269 (NC: U\_C441/R5943/U\_R5789, Stuff U\_C930/R5944/U\_R5790).
- P.71 [DCIN&Charger]Change PL3 to NC for costdown.
- P.75 [VTT&PCH Power(+1\_05V)]Change PR44 from 0ohm to 2.2ohm for vendor suggest.
- P.76 [DDR3 Power (+1\_5V/+0\_75V)]Change PR39 from 0ohm to 2.2ohm for vendor suggest.
- P.80 [VGA Power (ATI\_VDD)]Change PR549 from 0ohm to 2.2ohm for vendor suggest.
- P.57 [Touch Pad]Del F12 for no need.
- P.35 [LVDS]Update Panel ID information.
- P.51 [AUDIO (CODEC)\*]Change U\_C787/U\_C476/U\_C459 to 1C-2B20103-K200.
- P.28 [VRAM(DDR3)# 1/4]Change C6303 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.29 [VRAM(DDR3)# 2/4]Change C6304 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.30 [VRAM(DDR3)# 3/4]Change C6257 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.31 [VRAM(DDR3)# 4/4]Change C6258 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.28 [VRAM(DDR3)# 1/4]Change C4028/C4036 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.80 [VGA Power(ATI\_VDD)]Change PC172 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.77 [SYS Power(+1\_8V)]Change PC247 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.

- P.65 [AUDIO (Power)\*]Change U\_C467 to 1C-2B20103-K200 for MOR comment to use the same kind of Capacitor.
- P.50 [PCIE (MS) 1/2]Change R5912/R5913/R5914/R5911/R5915/R5916/R5917/R5918 /R5919 to 33ohm for correcting SI test fail.
- P.51 [PCIE (SD) 2/2]Change R5920/R5921/R5922/R5923/R5924 to 33ohm for correcting SI test fail.

(2009/09/13)

- P.34 [CRT]Change CN20 to DZ11A91-SB281-4H for different package.
- P.68 [AUDIO (Ext MIC Jack)\*]Change U\_CN5 to JA63331-R1T0-7H for ME request.

(2009/09/14)

- P.45 [LAN (88E8059) 1/2]Change C995 to 10uF for Marvell comment.
- P.74 [SYS Power (+3\_3V/+5V)] Change PR122/PR201 to 2.2 ohm for RF noise.
- P.78 [CPU Power VHCORE] Change PR563 to NC, change PU28 pin25 connect to PROCHOT# for design change.
- P.04 [ARD (CLK,MISC,JTAG)]Add off-page PROCHOT#.
- P.54 [Felica Connector]NC R5963/F14, stuff C869/U48/R630/C845/R5964 for Felica fuse solution fail.
- P.49 [eSATA Combo Conn.]Add R5974/R5975/R5976/R5977 to reduce the trace length on U214 for vendor request.

(2009/09/15)

- P.11 [PCH (PCI-E,SMBUS,CLK)]Make R902/R903 from +3VRUN pull-high to +3VALW pull-high for Intel recommendation.
- P.38 [HDMI]Change CN21 to DF03-577-1931.

(2009/09/16)

- P.14 [PCH (PCI,USB,NVRAM)]NC R1466 for Intel Braidwood disable guideline.

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(2009/09/19)

- P.25 [VGA (Memory BUS) 4/6]Change R5805 to 10k for AMD comment.
- P.25 [VGA (Memory BUS) 4/6]Add R5981 pull-high to +3VRUN on TESTEN for AMD hang-up workaround.
- P.24 [VGA (I/O) 3/6]Add R5978 pull-low to GND on ATI\_JTAG\_RST for AMD hang-up workaround.
- P.24 [VGA (I/O) 3/6]Add R5979 pull-high to +3VRUN on ATI\_JTAG\_TMS for AMD hang-up workaround.
- P.24 [VGA (I/O) 3/6]Add R5980 between R\_XTALSSIN and ATI\_JTAG\_TCLK for AMD hang-up workaround.

(2009/11/04)

- P.07 [ARD (GRAPHICS POWER)] Delete PJ43 for redundant design of EVT & DVT
- P.34 [CRT] Add F17 for current limit by MOR comment
- P.74 [SYS Power (+3\_3V/+5V)] Delete PJ11 and PJ12 for redundant design of EVT & DVT
- P.75 [VTT&PCH Power(+1\_05V)] Delete PJ22 and PJ23 for redundant design of EVT & DVT
- P.76 [DDR3 Power(+1\_5V/+0\_75V)] Delete PJ26 and PJ27 for redundant design of EVT & DVT
- P.77 [SYS Power(+1\_8V)] Delete PJ36 for redundant design of EVT & DVT
- P.78 [CPU Power\_VHOCORE] Change PC112 from 68u\_25V to OS\_Con cap 47u 25V by MOR request
- P.80 [VGA Power(ATI\_VDD)] Delete PJ31 and PJ37 for redundant design of EVT & DVT

(2009/11/12)

- P.25 [VGA (Memory BUS)] Change R5805 to NC & Mount R5981 for AMD suggestion
- P.39 [EC+KBC(NPCE783L)] Add R5982 on OVT\_EC# for GPIO70 need pull high
- P.62 [SWITCH (Botton & KB LED)\*] Exchange function name for Assist & Web button
- P.35 [LVDS] No mount R5940 to cancell Instant\_On function by MOR request
- P.39 [EC+KBC(NPCE783L)] No mount R5851 to cancell Instant\_On function by MOR request
- P.55 [Status LED & LID] R689 change resistor value to 300 Ohm, R692 change resistor value to 909 Ohm, R693 change value to 300 Ohm, R5945~R5947 change resistor value to 392 Ohm for LED brightness by MOR request
- P.37 [LVDS Connector] Change CN13 to 1N-004000E-FKG0 for better L6 process
- P.40 [KB Connector] Add TP1233,TP1234 for BFT test
- P.35 [LVDS] Add TP1231,TP1232 for BFT test
- P.51 [PCIE(SD) 2/2] Add TP1239,TP1240 for BFT test
- P.57 [Touch Pad] Add TP1245~TP1250 for BFT test
- P.54 [Felica Connector] Add TP1241~TP1244 for BFT test

(2009/11/16)

- P.71 [DCIN&Charger] Change pcl26 from 1000P\_50V\_0603\_X7R to 1000pF\_50V\_0402\_X7R for MOR request
- P.78 [CPU Power\_VHOCORE] Change pc253 from 1000P\_16V\_0402\_X7R to 1000pF\_50V\_0402\_X7R for MOR request
- P.82 [OVP protection] Change pc41 from 1000P\_16V\_0402\_X7R to 1000pF\_50V\_0402\_X7R for MOR request
- P.10 [PCH (HDA,JTAG,SAT)] Update U43 schematic symbol
- P.73 [Identify IC] Update PU5 schematic symbol
- P.52 [Camera Connector] L93,L94 change to Bead,MAX ECHO,EBMS100505A121 0.5A, 120ohm/100MHz,25%,0402(1005mm) by MOR request
- P.67 [Audio] U L4,U L5 change to Bead,MAX ECHO,EBMS100505A121 0.5A, 120ohm/100MHz,25%,0402(1005mm) by MOR request
- P.45 [LAN (88E8059) 1/2] C6077 change to SMD,MLCC,X7R,1000pF,50V,10%,0402 by MOR request

- P.63 [AUDIO (CODEC)\*] U\_C440 change to SMD,MLCC,X7R,1000pF,50V,10%,0402 by MOR request
- P.46 [LAN (Transformer) 2/2] C568 change to SMD,MLCC,X7R,1000pF,50V,10%,0402 by MOR request
- P.57 [Touch Pad] C130,C133 change to SMD,MLCC,NPO,47pF,50V,5%,0402 by MOR request
- P.39 [EC+KBC(NPCE783L)] C22 change to SMD,MLCC,NPO,22pF,50V,5%,0402 by MOR request
- P.50 [PCIE (MS) 1/2] C544,C785,C786 change to SMD,MLCC,NPO,22pF,50V,5%,0402 by MOR request
- P.63 [AUDIO (CODEC)\*] U\_C439 change to SMD,MLCC,NPO,22pF,50V,5%,0402 by MOR request
- P.64 [AUDIO (MUTE)\*] U\_R351 change to SMD,RES,200K,1/16W,5%,0402 by MOR request
- P.64 [AUDIO (MUTE)\*] U\_R352 change to SMD,RES,33K,1/16W,5%,0402 by MOR request
- P.64 [AUDIO (MUTE)\*] U\_R341,U\_R349, change to SMD,RES,10K,1/16W,5%,0402 by MOR request
- P.10 [PCH (HDA,JTAG,SAT)] R5905, change to SMD,RES,51ohm,1/16W,5%,0402 by MOR request
- P.39 [EC+KBC(NPCE783L)] RP1,RP20,RP90 change to SMD,RES,10K,1/16W,5%,0402 and locations are R5991~R5996 by MOR request
- P.39 [EC+KBC(NPCE783L)] RP21, change to SMD,RES,2.2K,1/16W,5%,0402 and locations are R5987,R5988 by MOR request
- P.39 [EC+KBC(NPCE783L)] RP22, change to SMD,RES,4.7K,1/16W,5%,0402 and locations are R5989,R5990 by MOR request
- P.43 [Express Card] Update U42 Schematic symbol
- P.55 [Status LED & LID] Change TP1224~TP1230 to top for BFT test

(2009/11/17)

- P.83 [HOLE & AMI LABEL] Add BOSS2 for M960 wireless card use only
- P.44 [Mini-PCIE Card (WLAN)] Add TP1235~TP1238 on BT\_WLAN\_SW# & GND for BFT test
- P.45 [LAN (88E8059) 1/2] LAN chip 88E8059 change packing method to tapping for better L6 process
- P.24 [VGA (I/O) 3/6]Connect a stable clock source (from clock gen SS 27MHz) to GPIO26\_TCK. Add 5991 pull-down with 10K ohm to ground for the Park/Madison JTAG test block intermittently fails to initialize correctly. Incorrect initialization may result in a failure to boot.
- P.35 [LVDS] SW1 change from 12-pin to 8-pin panel ID SW
- P.15 [PCH (GPIO,VSS\_NCTF,RSVD)] NC\_R5931 & move R5939 from P.35 to P.15
- P.39 [EC+KBC(NPCE783L)] Move R5940 from P.35 to P.39

(2009/11/18)

- P.57 [Touch Pad] Add F12 for cable short test fail
- P.35 [LVDS] Add test point from TP1251~TP1260 for panel ID switch BFT test
- P.58 [Thermal Sensor] Delete VGA thermal sensor function, NC\_U26, NC\_R946, NC\_C534, NC\_C547 because GPU support DTS function
- P.25 [VGA (Memory Bus) 4/6] Change R5878 resistor value from 680 Ohm to 51 Ohm for memory reset circuit update from AMD
- P.55 [Status LED & LID] Change U21 to E-CMOS EC2618NLB1GR for distance can't meet MOR spec

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(2009/11/19)

- P.24 [VGA (I/O) 3/6] Add TP1261,TP1262 on GPIO8 & GPIO 22 for reserve AMD errata solution
- P.11 [PCH (PCI-E,SMBUS,CLK)] Reserve R5992~R6000 for Intel FCIM function
- P.78 [CPU Power\_VHCORE] Change PR554 and PR558 from 0ohm to 2.20hm for EMI request
- P.80 [VGA Power(ATI\_VDD)] Change PR183 from 15.4k to 15k for VGA Park high level request  
change PR210 from NC\_7.15K to 68k for VGA Madison high level request

(2009/11/20)

- P.24 [VGA (I/O) 3/6]Delete R5978,R5979,R5980 for needless
- P.24 [VGA (I/O) 3/6]NC R5991 and add R6001(NC) for AMD Errata suggestion
- P.25 [VGA (Memory BUS)]NC R5981 for AMD Errata suggestion
- P.15 [PCH]Change R5939 to mount for Panel ID setting requirement
- P.64 [Audio(Mute)]Change U\_R364 from 33kohm to 3.3kohm for satisfy hFE under 100 as MOR's suggestion.
- P.45 [LAN]Change R84 from 4.7kohm to 0ohm for vendor modification

(2009/11/21)

- P.24 [VGA]Add R6002,R6003,Y9,C6342,C6343 and NC them, it reserve for Intel FCIM function.
- P.69 [Audio (USB)\*]Change the footprint of U\_CN2,U\_CN3,U\_CN6 as SMT suggestion.
- P.42 [Debug Port]Add C6344 for EMI request.
- P.66 [AUDIO]Add C6345 for EMI request.
- P.46 [LAN]Change L47 from 100R to 300R for EMI request.
- P.71 [DCIN&Charger]: Dcbatout Add PC574 0.1uf,PC575 0.1uf,PC576 4700pf , PC577 4700pf for EMI request
- P.74 [SYS Power (+3 3V/+5V)]:Add PC578 and PC579 680pf near PQ70 for EMI request
- P.78 [CPU Power\_VHCORE]:change PC151 and PC156 from NC to mount 0.1uf for EMI request
- P.81 [Others power plane]:Add PC584 680pf,PC585 0.1uf near PQ26 for EMI request.

(2009/11/22)

- P.60 [Audio]Add C6348~C6351 for speaker noise issue.
- P.10 [PCH]Add C6352,C6353 and NC them, reserve for EMI request.
- P.63 [AUDIO]NC U\_C439 and add U\_C931(NC) for EMI request.
- P.55 [LED]Change R5945,R5946,R5947 from 392ohm to 649ohm and R390 from 120ohm to 261ohm as DQA&ME request.
- P.63 [Audio]Change U\_R668,U\_R665,U\_R660,U\_R670,U\_R672,U\_R659(22ohm) from 0402 to 0201 for implement ME solution and layout space is not enough. And change U\_R667,U\_R664(33kohm), and R5943(NC),R5944(0ohm), and U\_R339(20kohm), and U\_R338(39.2kohm), and U\_R652,U\_662(10kohm) from 0402 to 0201 for implement ME solution and layout space is not enough.

(2009/11/23)

- P.39 [EC]Delete R5983,R5984 and add RP20 for layout space concern
- P.81 [Other power plane]Change PR661 from 0603 to 0402 for MOR request to cost down.
- P.15 [PCH]Delete RP19 and add R6004,R6005,R6006 for MOR request to cost down.
- P.52 [Camera]Change C9 from 1C-2Y70106-Y001 to 1C-2Y70106-Y000 for MOR request to cost down.
- P.64 [Audio]Change U\_Q20 form 2N7002W to SRK7002 for ESD issue.
- P.25 [VGA]Change R5805 from NC to mount for AMD suggestion.
- P.83 [HOLE]Change H30,H29,H8,H10,H4 hole size as ME's request.
- P.34 [CRT]Change CN20 from FOX\_DZ11A91-SB281-4H to FOX\_DZ11AE1-SB1SD-4H as ME's request.
- P.61 [Audio/USB DB CONN]Change CN31 from FOX\_GB5RF500-1203-7H to FOX\_GB5RF500-1203-8H for ME's request.
- P.66 [Audio (Audio/USB CONN)\*]Change U\_CN1 from FOX\_GB5RF500-1203-7H to FOX\_GB5RF500-1203-8H as ME's request.
- P.54 [Felica]Change CN7 from FOX\_GB5RF060-1203-7H to FOX\_GB5RF060-1203-8F as ME's request.

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- P.57 [TouchPad]Change CN8 from FOX\_GB5RF060-1203-7H to FOX\_GB5RF060-1203-8F as ME's request.
- P.10 [PCH]Change C6352 from 0.1uF to 33pF(mount) and R618 from 33ohm to 47ohm as EMC request.
- P.81 [Other power plan]Change PC188 from 10uF to 1uF(mount) for improve power signal.
- P.63 [Audio]Change U\_R661,U\_R671,U\_R676,U\_673,U\_R321 from 0402 to 0201 for layout space concern.

(2009/11/24)

- P.25 [VGA]Change R5805 from 10k to 5.1k as AMD's suggestion
- P.35 [LVDS]Change SW1 from DHNF-04-T-Q-T-R\_SW-SMD8P to DHNF-06-T-Q-T/R\_SW-SMD12 for shortage issue.

(2009/11/28)

- P.74 [SYS Power]Change PC578,PC579 from 1C-2B20681-M000 to 1C-2B20681-K000 for PUR's suggestion.
- P.46 [LAN]Change L47 from 1L-BACMS16-0809 to 1L-BTB1608-080D for PUR's suggestion.
- P.42 [Debug Port]NC CN30 for EMC solution.
- P.41 [SPI Flash ROM]NC U3,R43,C20 and mount R775 for EMC solution.
- P.80 [VGA Power(ATI\_VDD)]:
  - 1.PR183=10.5k for VGA M92 XT high voltage level request
  - 2.PR183=10.5k for VGA M92 XTX high voltage level request
  - 3.PR183=34.8k for VGA M96 high level request
  - 4.PR183=75k for VGA madision high level request
  - 5.PR183=15K for VGA Park high level request
  - 6.NC PR210

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- P.76 [DDR3 Power(+1\_5V/+0\_75V)] Mount PQ59, change PR600 resistor to 0 Ohm & no mount PR145 to change the enable signal to RUN\_PWRGD by MOR request.
- P.38 [HDMI] Change CN21 symbol from 2N-0019007-MKG0 to 2N-0019003-MKG0 to improve factory process

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- P.80 [VGA Power(ATI\_VDD)]
  - 1.PR222=39.2k for VGA M92 XTX 1.0VPEG 1.1V voltage request
  - 2.PR222=27k for VGA Park 1.0VPEG 1.0V voltage request
  - 3.PR222=27k for VGA Madison 1.0VPEG 1.0V voltage request
- P.25 [VGA (Memory Bus 4/6)]
  - 1.R5795, R5796, R5809, R5810=100 for VGA M92XTX voltage reference
  - 2.R5795, R5796, R5809, R5810=40.2 for VGA Park voltage reference
  - 3.R5795, R5796, R5809, R5810=40.2 for VGA Madison voltage reference
- P.83 [HOLE & AMI LABEL] Mount AMI label for AMI certificate
- P.10 [PCH (HDA,JTAG,SAT)] No mount CN18, U43, C815, R542 & Mount R1551 for needless in MP
- P.64 [AUDIO (MUTE)\*] Change U\_Q15 with ESD protection for factory ESD issue

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- P.83 [HOLE & AMI LABEL]Delete BOSS2 for needless from ME's request
- P.46 [LAN(Transformer)]Change L70 from LANKOM to DELTA for LANKOM transformer issue in PVT
- P.45 [LAN]Add R6010 reserve for 8057 solution
- P.04 [ARD]Delete R937,R930 for MOR's request
- P.06 [ARD]Delete R860 for MOR's request
- P.24 [VGA]Delete R5785,R5788,R5789 for MOR's request
- P.39 [EC]Delete R39,R46 for MOR's request
- P.44 [Mini-PCIE Card]Delete R5901 for MOR's request
- P.57 [Touch Pad]Delete R5869,R5868 for MOR's request

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- P.10 [PCH]Change R618 from 47ohm to 68ohm and Change C6353 from NC\_0.1uF to mount 22pF for EMC audio FFC issue
- P.63 [Audio]Change U\_R326 from 22ohm to 0ohm for EMC audio FFC issue