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

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**Project Code & Schematics Subject:** **H901 Main Board_6L**

| | |
|---|---|
| **PCB P/N:** | **1P-0099J00-6000 (IRIS)**<br>**1P-0099500-6000 (HANNSTAR)**<br>**1P-0099200-6000 (NANYA)** |
| **BT DB P/N:** | **1P-1099J01-6000 (IRIS)**<br>**1P-1099502-6000 (HANNSTAR)**<br>**1P-1099201-6000 (NANYA)** |
| **LED DB P/N:** | **1P-1099J02-6000 (IRIS)**<br>**1P-1099501-6000 (HANNSTAR)**<br>**1P-1099200-6000 (NANYA)** |
| **P/B DB P/N:** | **1P-1099J00-6000 (IRIS)**<br>**1P-1099500-6000 (HANNSTAR)**<br>**1P-1099202-6000 (NANYA)** |

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



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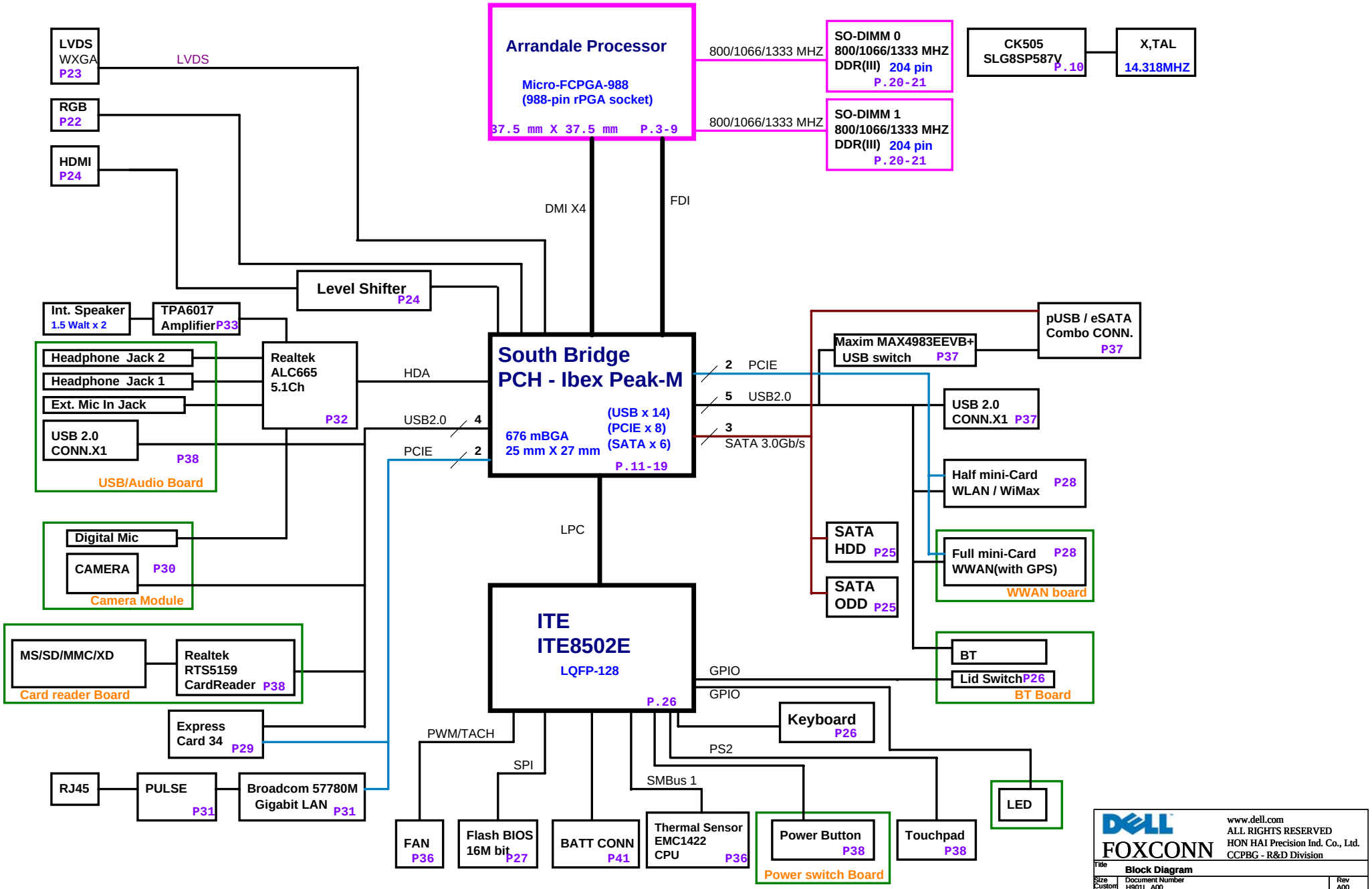
# H901L Arrandale






| | | | |
|---|---|---|---|
| Title | Block Diagram | | |
| Size: Custom | Document Number: H901L_A00 | | Rev: A00 |
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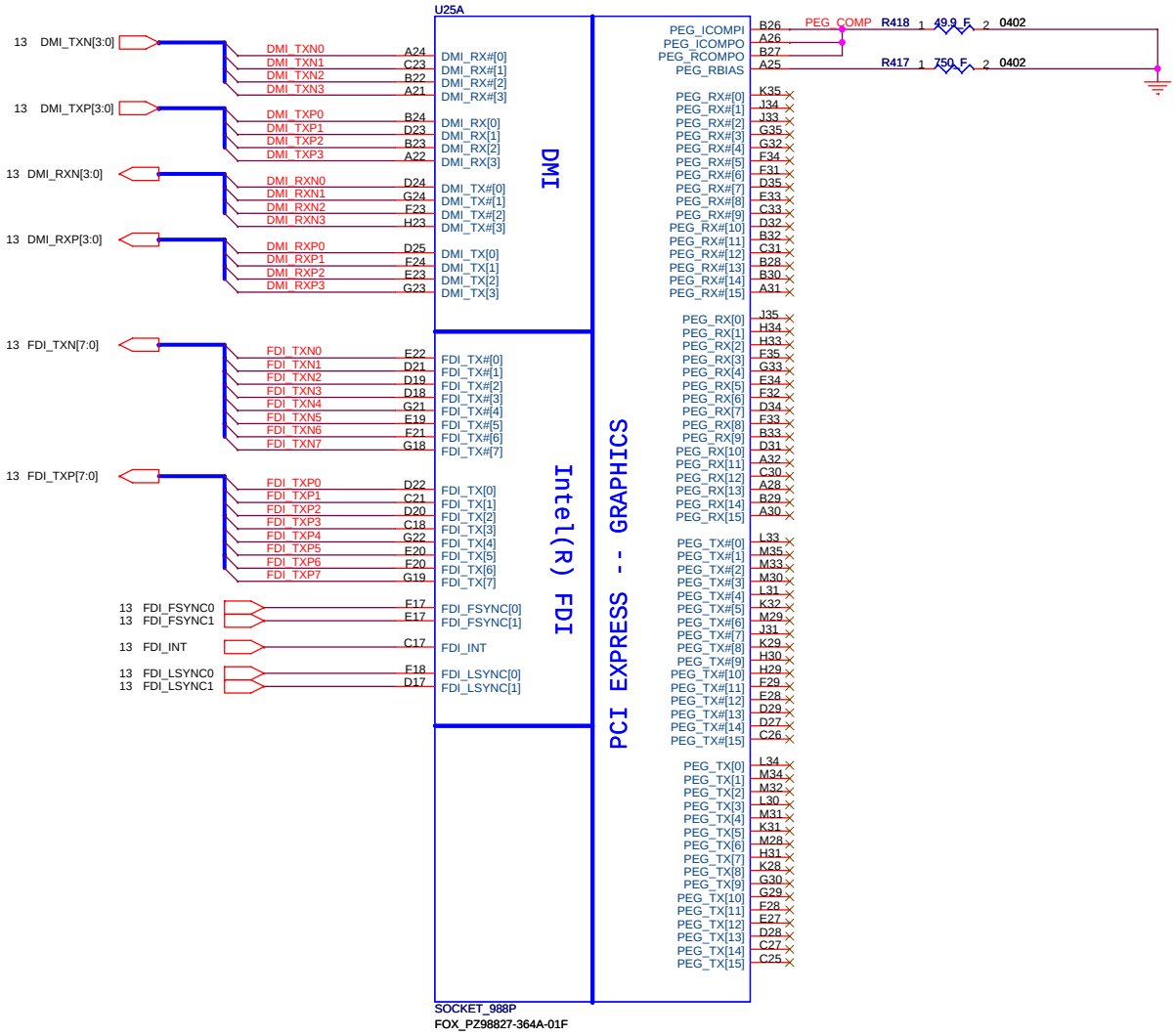




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| | | |
|---|---|---|
| Title | Arrandale (DMI,PEG,FDI) | |
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Layout Note:
Comp0,2 connect with Zo=27.4 ohm, make trace
length shorter then 0.5". Width=20mil(MS)
Comp1,3 connect with Zo=55 ohm, make trace
length shorter then 0.5". Width=5mil(MS)

Place close to chip

**Layout Check-thermal, power manager**

U25B
SOCKET_988P
FOX_PZ98827-364A-01F

MISC THERMAL
CLOCKS
DDR3 MISC
JTAG & BPM
PWR MANAGEMENT

R465 20_F 0402 COMP3 AT23 COMP3
R466 20_F 0402 COMP2 AT24 COMP2
R106 49.9_F 0402 COMP1 G16 COMP1
R460 49.9_F 0402 COMP0 AT26 COMP0
26 CPU_DET# AH24 SKTOCC#
H_CATERR# AK14 CATERR#
16 H_PECI R176 0_J 0402 H_PECI_R AT15 PECI
48 PROCHOT# PROCHOT# AN26 PROCHOT#
16,26 PM_THRMTRIP# R192 0_J 0402 PM_THRMTRIP#_1 AK15 THERMTRIP#
H_CPURST#_R AP26 RESET_OBS#
13 H_PM_SYNC R193 0_J 0402 H_PM_SYNC_R AL15 PM_SYNC
R180 0_J 0402 CPUPWRGD1_R AN14 VCCPWRGOOD_1
16 H_CPUPWRGD R195 0_J 0402 CPUPWRGD_R AN27 VCCPWRGOOD_0
13 PM_DRAM_PWRGD R183 0_J 0402 DRAM_PWRGD AK13 SM_DRAMPWROK
VTTPWRGOOD AM15 VTTPWRGOOD
TAPPWRGOOD AM26 TAPPWRGOOD
15,26,27,28,29,31 PLT_RST# R149 1.5K_F 0402 BUF_PLT_RST#_R AL14 RSTIN#
R148 750_F 0402

BCLK A16 CPU_BCLK R63 0_J 0402 CLK_PCH_CPU_CLK 16
BCLK# B16 CPU_BCLK# R414 NC_0_J 0402 CLK_CPU_BCLK 10
R413 NC_0_J 0402 CLK_CPU_BCLK# 10
R64 0_J 0402 CLK_PCH_CPU_CLK# 16
BCLK_ITP AR30 BCLK_ITP
BCLK_ITP# AT30 BCLK_ITP#
PEG_CLK E16 CLK_EXP_P_R R59 0_J 0402 CLK_EXP_P 12
PEG_CLK# D16 CLK_EXP_N_R R60 0_J 0402 CLK_EXP_N 12
DPLL_REF_SSCLK A18 CLK_DP_P_R R708 0_J 0402 CLK_DP_P 12
DPLL_REF_SSCLK# A17 CLK_DP_N_R R709 0_J 0402 CLK_DP_N 12
SM_DRAMRST# F6 DDR3_DRAMRST# DDR3_DRAMRST# 20,21
SM_RCOMP[0] AL1 SM_RCOMP0 R457 100_F 0402
SM_RCOMP[1] AM1 SM_RCOMP1 R458 24.9_F 0402
SM_RCOMP[2] AN1 SM_RCOMP2 R459 130_F 0402
PM_EXT_TS#[0] AN15 PM_EXTTS#0
PM_EXT_TS#[1] AP15 PM_EXTTS#1
PRDY# AT28 XDP_PRDY#
PREQ# AP27 XDP_PREQ#
TCK AN28 XDP_TCLK
TMS AP28 XDP_TMS
TRST# AT27 XDP_TRST#
TDI AT29 XDP_TDI_R
TDO AR27 XDP_TDO_R
TDI_M AR29 XDP_TDI_M
TDO_M AP29 XDP_TDO_M
DBR# AN25 XDP_DBRESET#
BPM#[0] AJ22
BPM#[1] AK22
BPM#[2] AK24
BPM#[3] AJ24
BPM#[4] AJ25
BPM#[5] AH22
BPM#[6] AK23
BPM#[7] AH23

TP841

+1_1V_VTT
R179 10K_J 0402
R178 10K_J 0402
R712 NC_0_J 0402
PM_EXTTS#0 20,21
DDR_ALERT# 36
PM_EXTTS#1 21
R177 NC_12.4K_F 0402
+3VRUN
R1292 51_J 0402
XDP_DBRESET#

XDP_TDO R468 51_J 0402
XDP_TMS R471 NC_51_J 0402
XDP_TDI R469 NC_51_J 0402
XDP_PREQ# R472 NC_51_J 0402
XDP_TCLK R470 NC_51_J 0402
XDP_TRST#
R461 51_J 0402

TCK 50 PD
TMS 2k~5k PU
TRST 2k~5k PU
TDI 50 PU
TDO unconnect
TDI_M 50 PU
TDO_M unconnect

+3VRUN
R200 2.2K_J 0402
A0205
Q19A 2N7002DW-7-F
Q19B 2N7002DW-7-F
26,36 OVT_EC#
R174 68_J 0402
PROCHOT#

XDP_TDI_R R965 0_J 0201 XDP_TDI
XDP_TDO_M R966 NC_0_J 0201 XDP_TDO
R969 0_J 0402
XDP_TDI_M R967 NC_0_J 0201
XDP_TDO_R R968 0_J 0201

+3VRUN
R201 10K_J 0402
C374 0.1U_6.3V_K 0402_X5R
U17
MC74VHC1G08DFT2G
VTTPW_IR R197 2K_F 0402 VTTPWRGOOD
R181 1K_F 0402
13,26,38,44,46,47,49 RUN_PWRGD

+1_5VSUS
R184 1.1K_F 0402
DRAM_PWRGD
R182 3.01K_F 0402

+1_1V_VTT
R194 49.9_F 0402
R173 NC_68_J 0402
H_CATERR#
Confirm with Intel.
H_CPURST#_R



| | | |
|---|---|---|
| Title | Arrandale (CLK,MISC,JTAG) | |
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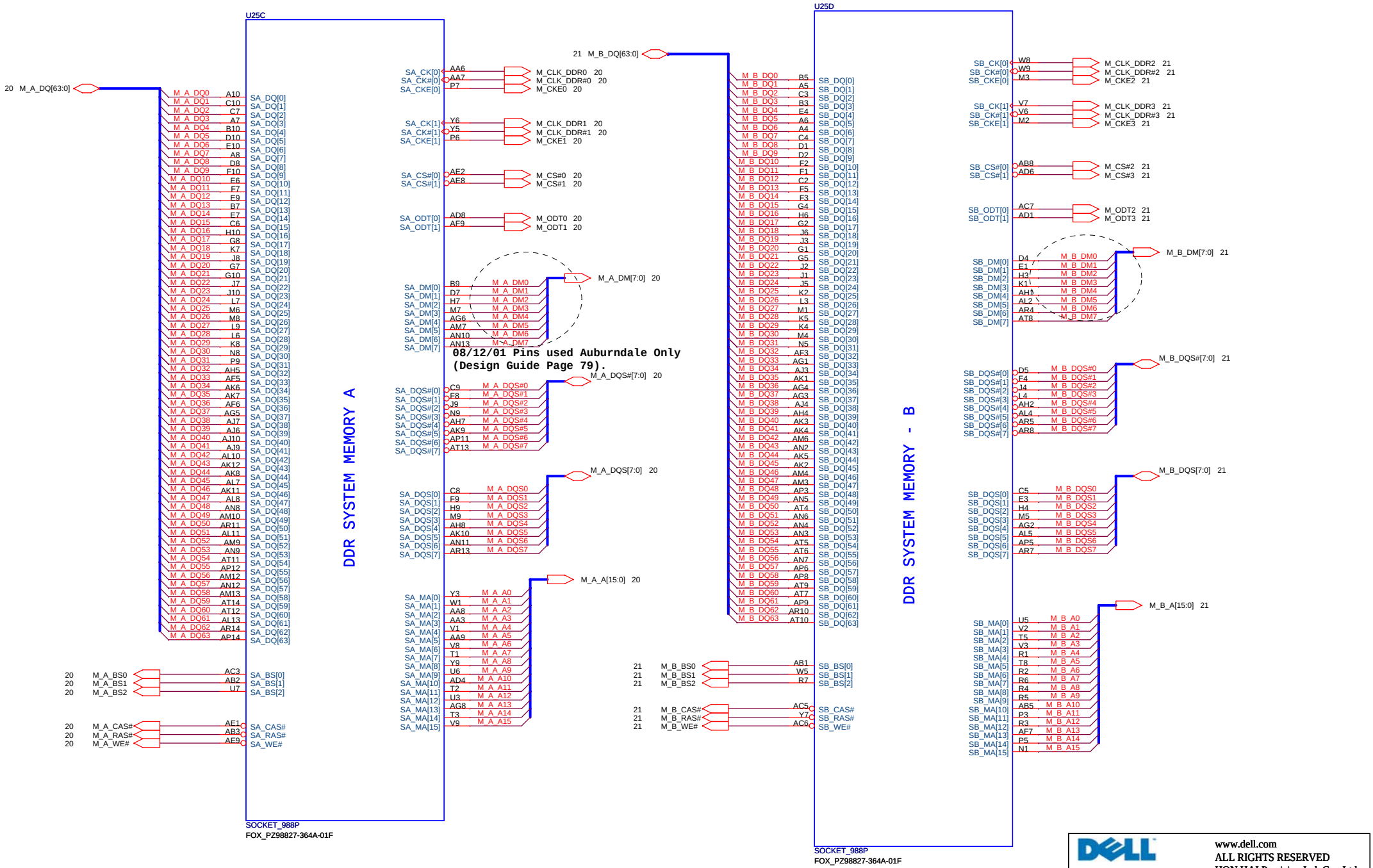


| | |
|---|---|
| Title | Arrandale (DDR3) |
| Size | A3 |
| Document Number | H901L_A00 |
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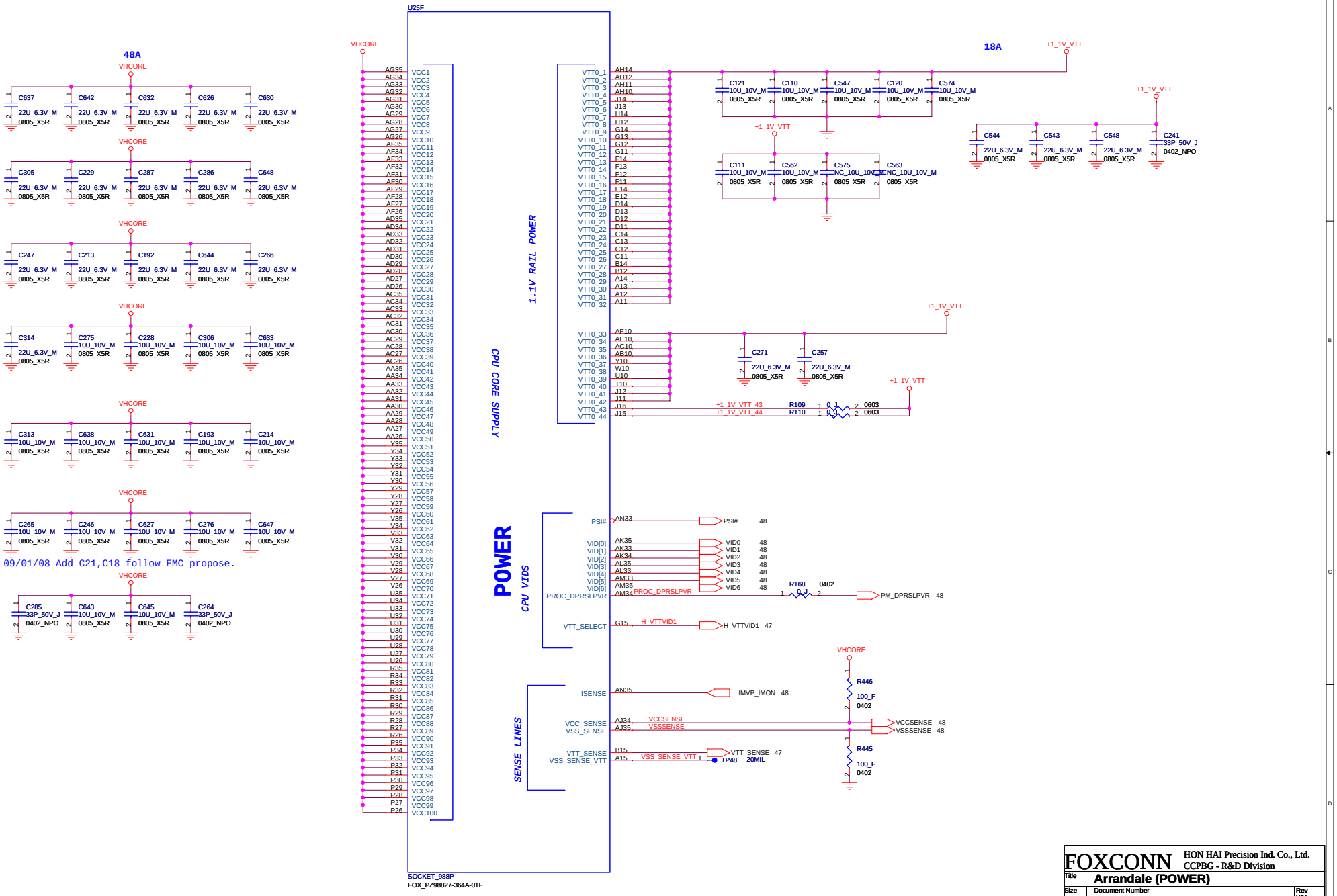


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| | | |
|---|---|---|
| Title | Arrandale (POWER) | |
| Size: Custom | Document Number: H901L-X01 | Rev: X01 |
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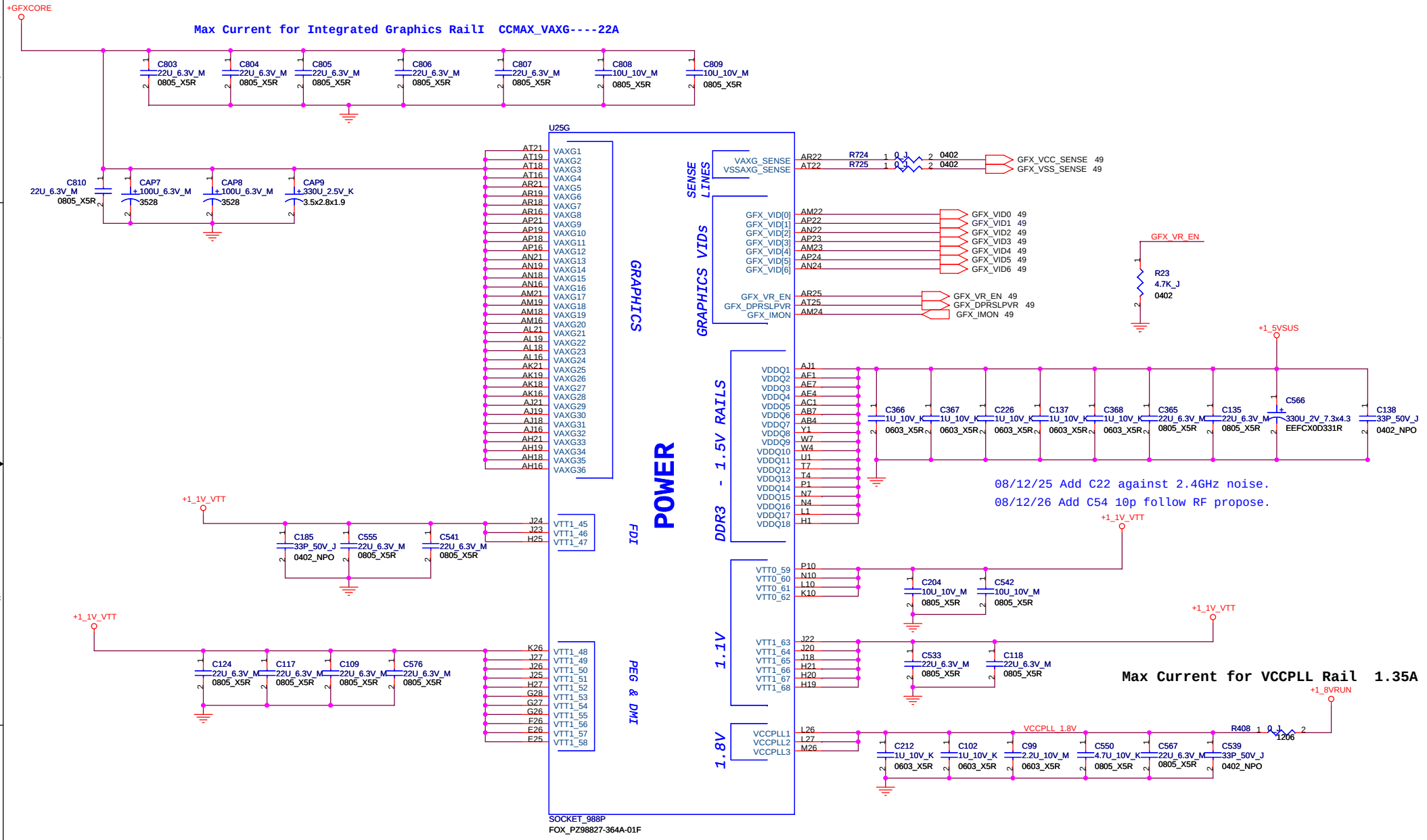


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| Title | Arrandale (GRAPHIC POWER) |
| Size A3 | Document Number H9011L_A00 — Rev A00 |
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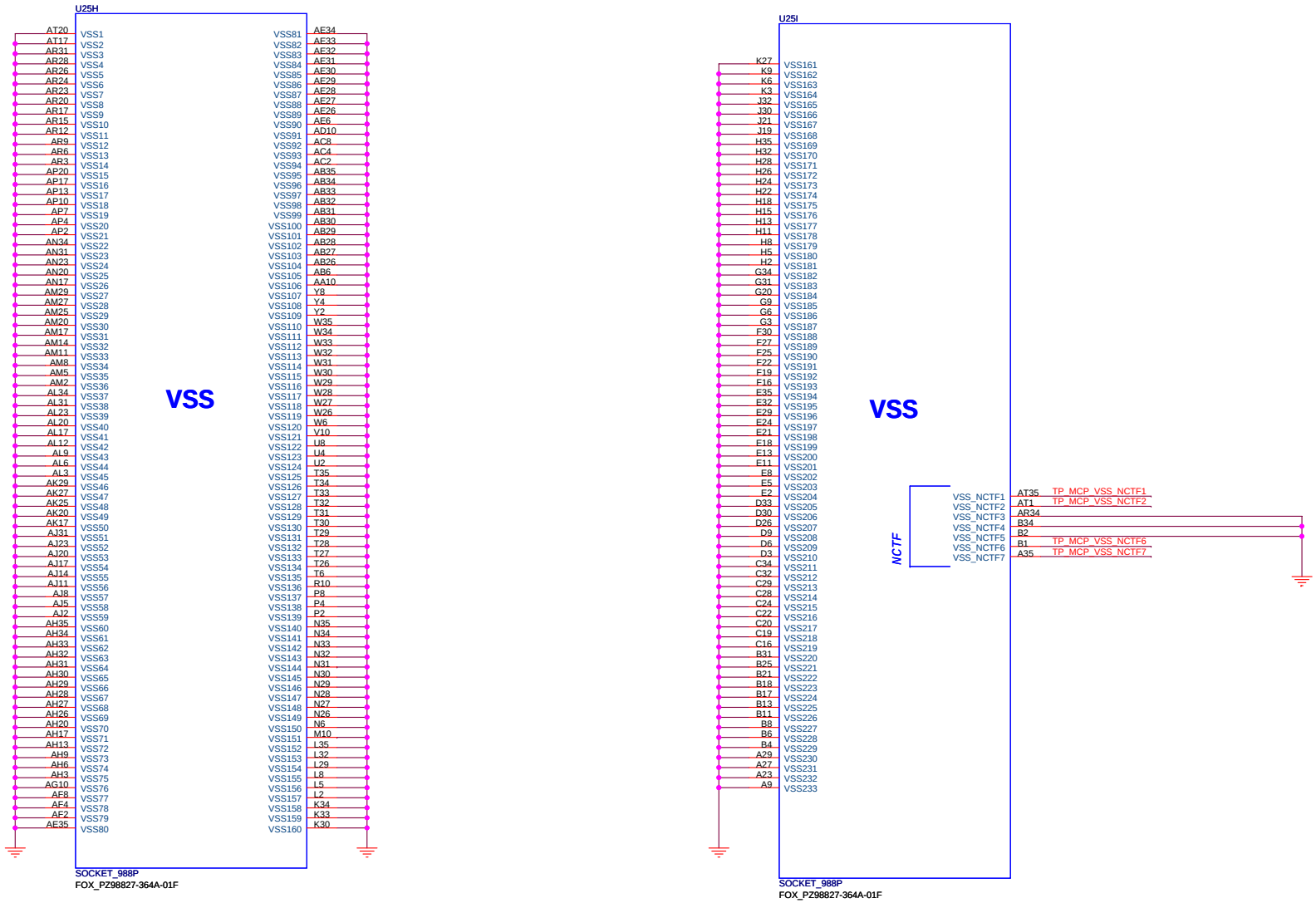




| | | |
|---|---|---|
| Title | Arrandale (GND) | |
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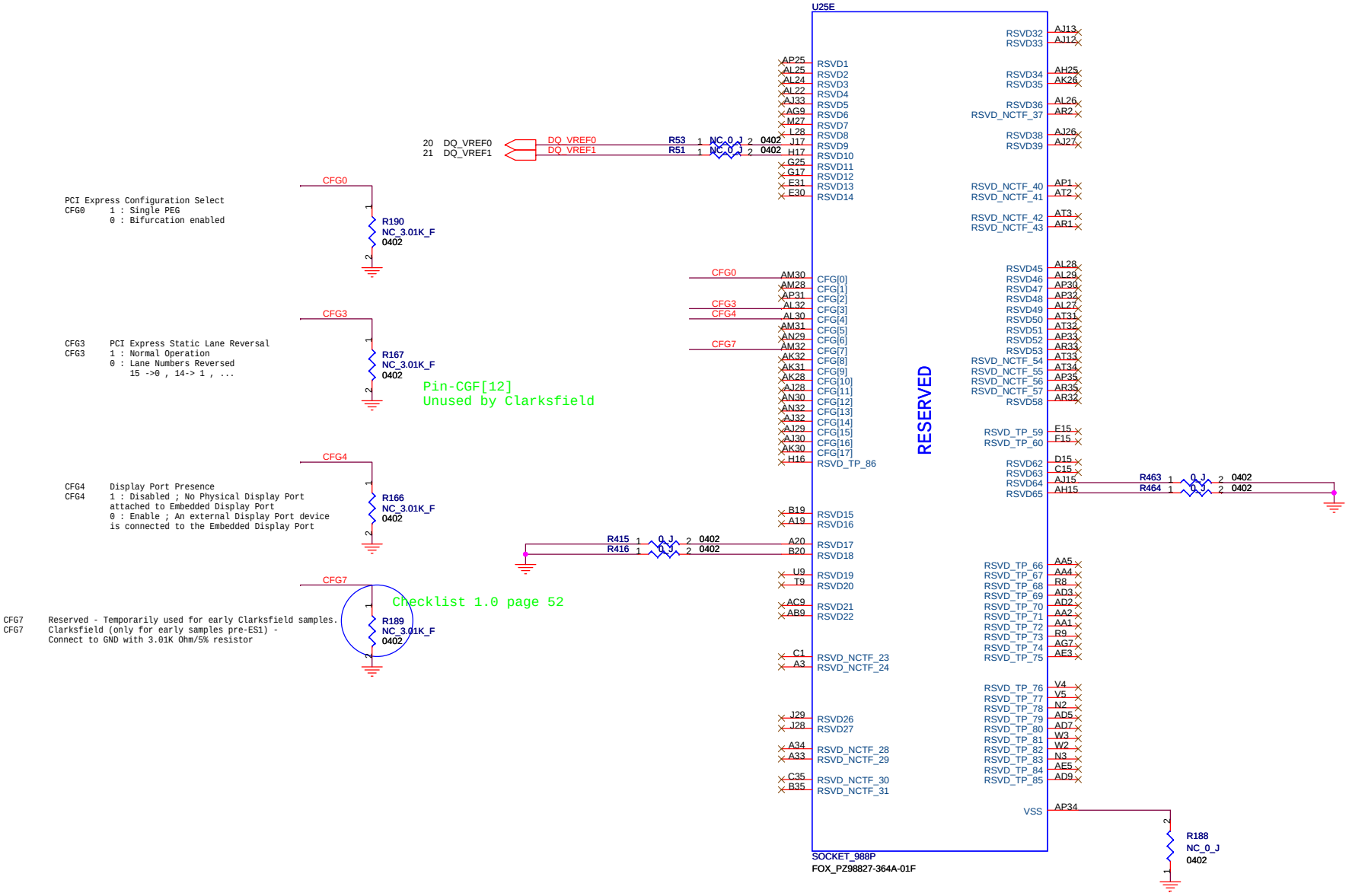




| | | | |
|---|---|---|---|
| Title | Arrandale (RESERVED) | | |
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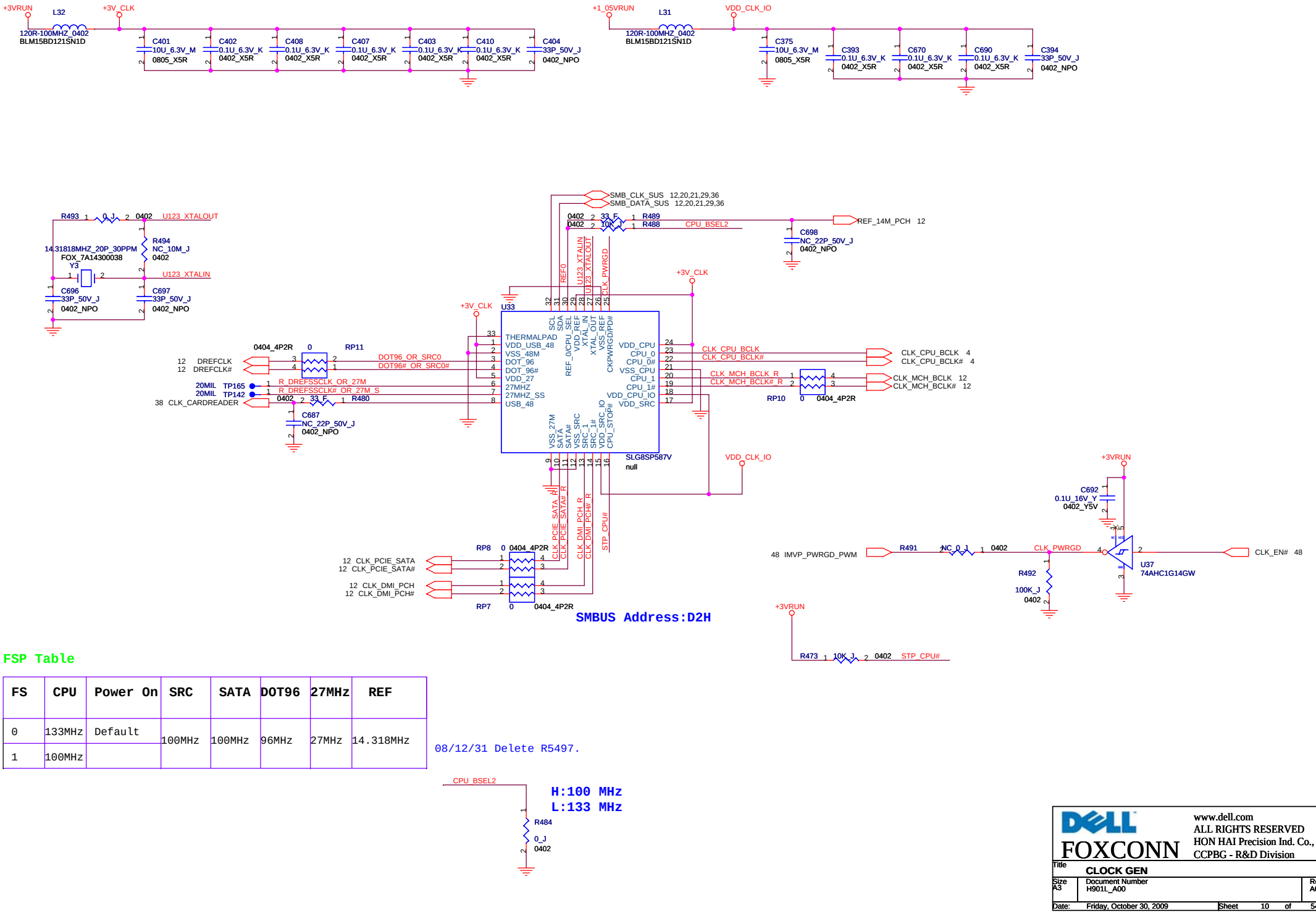


## FSP Table

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

08/12/31 Delete R5497.



| | | | |
|---|---|---|---|
| Title | CLOCK GEN | | |
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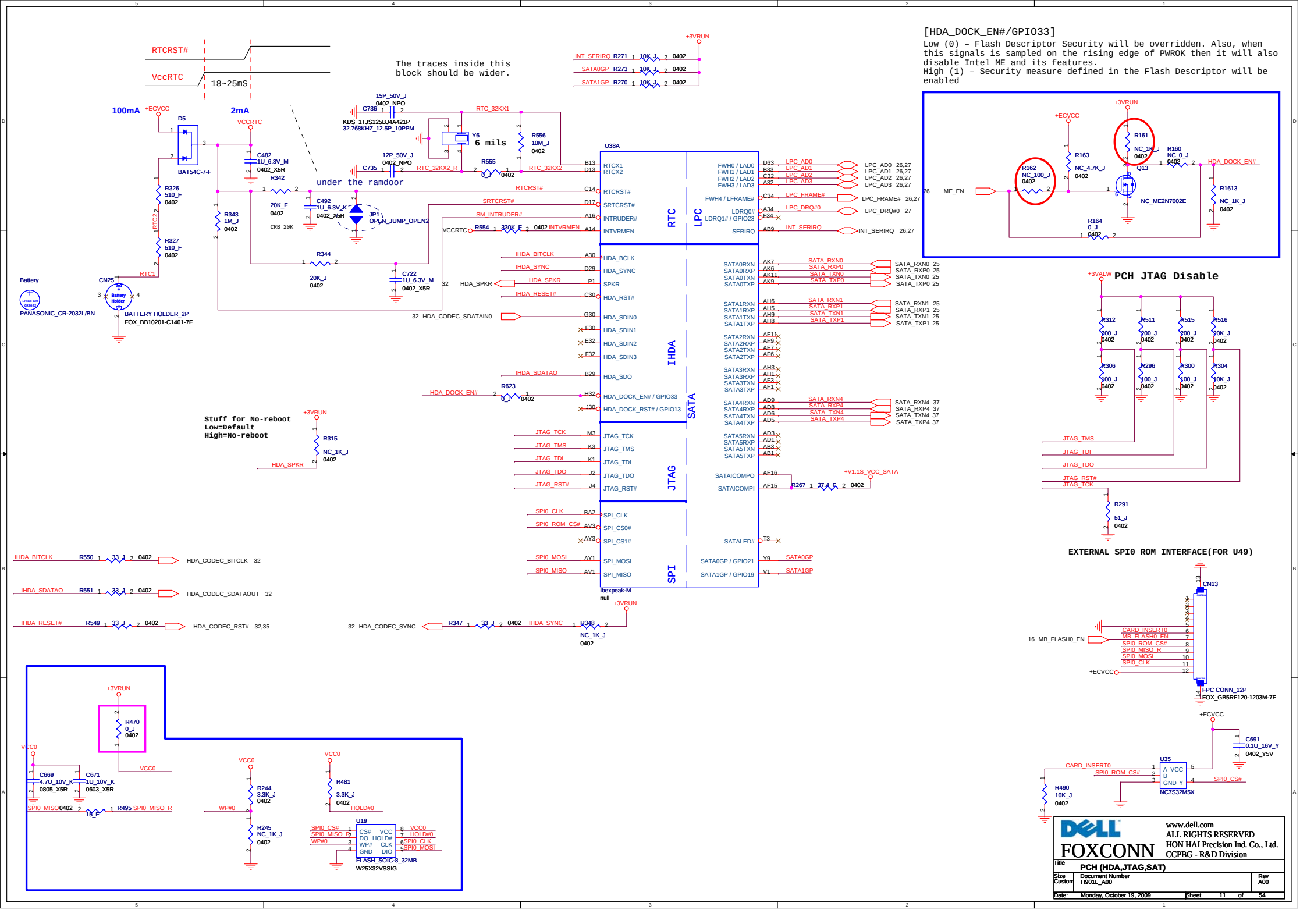
RTCRST#
VccRTC
18~25mS
The traces inside this block should be wider.
100mA
2mA
+ECVCC
VCCRTC
D5
BAT54C-7-F
C482 1U_6.3V_M 0402_X5R
R342
under the ramdoor
15P_50V_J 0402_NPO
C736
KDS_1TJS125BJ4A421P 32.768KHZ_12.5P_10PPM
Y6 6 mils
12P_50V_J 0402_NPO
C735
RTC_32KX1
RTC_32KX2
RTC_32KX2_R
R556 10M_J 0402
R555 0_J 0402
R326 510_F 0402
R327 510_F 0402
R343 1M_J 0402
20K_F 0402
CRB 20K
C492 1U_6.3V_K 0402_X5R
JP1 OPEN_JUMP_OPEN2
R344 20K_J 0402
C722 1U_6.3V_M 0402_X5R
Battery
CN25
PANASONIC_CR-2032L/BN
BATTERY HOLDER_2P FOX_BB10201-C1401-7F
INT_SERIRQ R271 10K_J 0402
SATA0GP R273 10K_J 0402
SATA1GP R270 10K_J 0402
+3VRUN
U38A
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
SM_INTRUDER#
VCCRTC
R554 330K_F 0402
INTVRMEN
RTC
LPC
FWH0 / LAD0
FWH1 / LAD1
FWH2 / LAD2
FWH3 / LAD3
FWH4 / LFRAME#
LDRQ0#
LDRQ1# / GPIO23
SERIRQ
LPC_AD0 26,27
LPC_AD1 26,27
LPC_AD2 26,27
LPC_AD3 26,27
LPC_FRAME# 26,27
LPC_DRQ#0 27
INT_SERIRQ 26,27
IHDA_BITCLK
IHDA_SYNC
HDA_SPKR
IHDA_RESET#
32 HDA_CODEC_SDATAIN0
HDA_BCLK
HDA_SYNC
SPKR
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
IHDA
IHDA_SDATAO
HDA_SDO
HDA_DOCK_EN# / GPIO33
HDA_DOCK_RST# / GPIO13
SATA
SATA0RXN
SATA0RXP
SATA0TXN
SATA0TXP
SATA1RXN
SATA1RXP
SATA1TXN
SATA1TXP
SATA2RXN
SATA2RXP
SATA2TXN
SATA2TXP
SATA3RXN
SATA3RXP
SATA3TXN
SATA3TXP
SATA4RXN
SATA4RXP
SATA4TXN
SATA4TXP
SATA5RXN
SATA5RXP
SATA5TXN
SATA5TXP
SATA_RXN0 25
SATA_RXP0 25
SATA_TXN0 25
SATA_TXP0 25
SATA_RXN1 25
SATA_RXP1 25
SATA_TXN1 25
SATA_TXP1 25
SATA_RXN4 37
SATA_RXP4 37
SATA_TXN4 37
SATA_TXP4 37
HDA_DOCK_EN#
R623 0_J 0402
JTAG
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_RST#
SATAICOMPO
SATAICOMPI
+V1.1S_VCC_SATA
R267 37.4_F 0402
SPI
SPI0_CLK
SPI0_ROM_CS#
SPI0_MOSI
SPI0_MISO
SATALED#
SATA0GP / GPIO21
SATA1GP / GPIO19
SATA0GP
SATA1GP
Ibexpeak-M
null
Stuff for No-reboot
Low=Default
High=No-reboot
R315 NC_1K_J 0402
HDA_SPKR
IHDA_BITCLK R550 33_J 0402 HDA_CODEC_BITCLK 32
IHDA_SDATAO R551 33_J 0402 HDA_CODEC_SDATAOUT 32
IHDA_RESET# R549 33_J 0402 HDA_CODEC_RST# 32,35
32 HDA_CODEC_SYNC R347 33_J 0402 IHDA_SYNC R348 NC_1K_J 0402
[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
+3VRUN
+ECVCC
R161 NC_1K_J 0402
R163 NC_4.7K_J 0402
R160 NC_0_J 0402
R162 NC_100_J 0402
Q13
NC_ME2N7002E
HDA_DOCK_EN#
R1613 NC_1K_J 0402
R164 0_J 0402
26 ME_EN
+3VALW
PCH JTAG Disable
R312 200_J 0402
R511 200_J 0402
R515 200_J 0402
R516 20K_J 0402
R306 100_J 0402
R296 100_J 0402
R300 100_J 0402
R304 10K_J 0402
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_RST#
JTAG_TCK
R291 51_J 0402
EXTERNAL SPI0 ROM INTERFACE(FOR U49)
CN13
16 MB_FLASH0_EN
CARD_INSERT0
MB_FLASH0_EN
SPI0_ROM_CS#
SPI0_MISO_R
SPI0_MOSI
SPI0_CLK
+ECVCC
FPC CONN_12P FOX_GB5RF120-1203M-7F
+3VRUN
R470 0_J 0402
VCC0
C669 4.7U_10V_K 0805_X5R
C671 1U_10V_K 0603_X5R
SPI0_MISO 0402
15_F
R495 SPI0_MISO_R
R244 3.3K_J 0402
WP#0
R245 NC_1K_J 0402
R481 3.3K_J 0402
HOLD#0
U19
SPI0_CS#
SPI0_MISO_R
WP#0
HOLD#0
SPI0_CLK
SPI0_MOSI
FLASH_SOIC-8_32MB
W25X32VSSIG
+ECVCC
C691 0.1U_16V_Y 0402_Y5V
CARD_INSERT0
SPI0_ROM_CS#
U35
NC7S32M5X
SPI0_CS#
R490 10K_J 0402
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PCH (HDA,JTAG,SAT)
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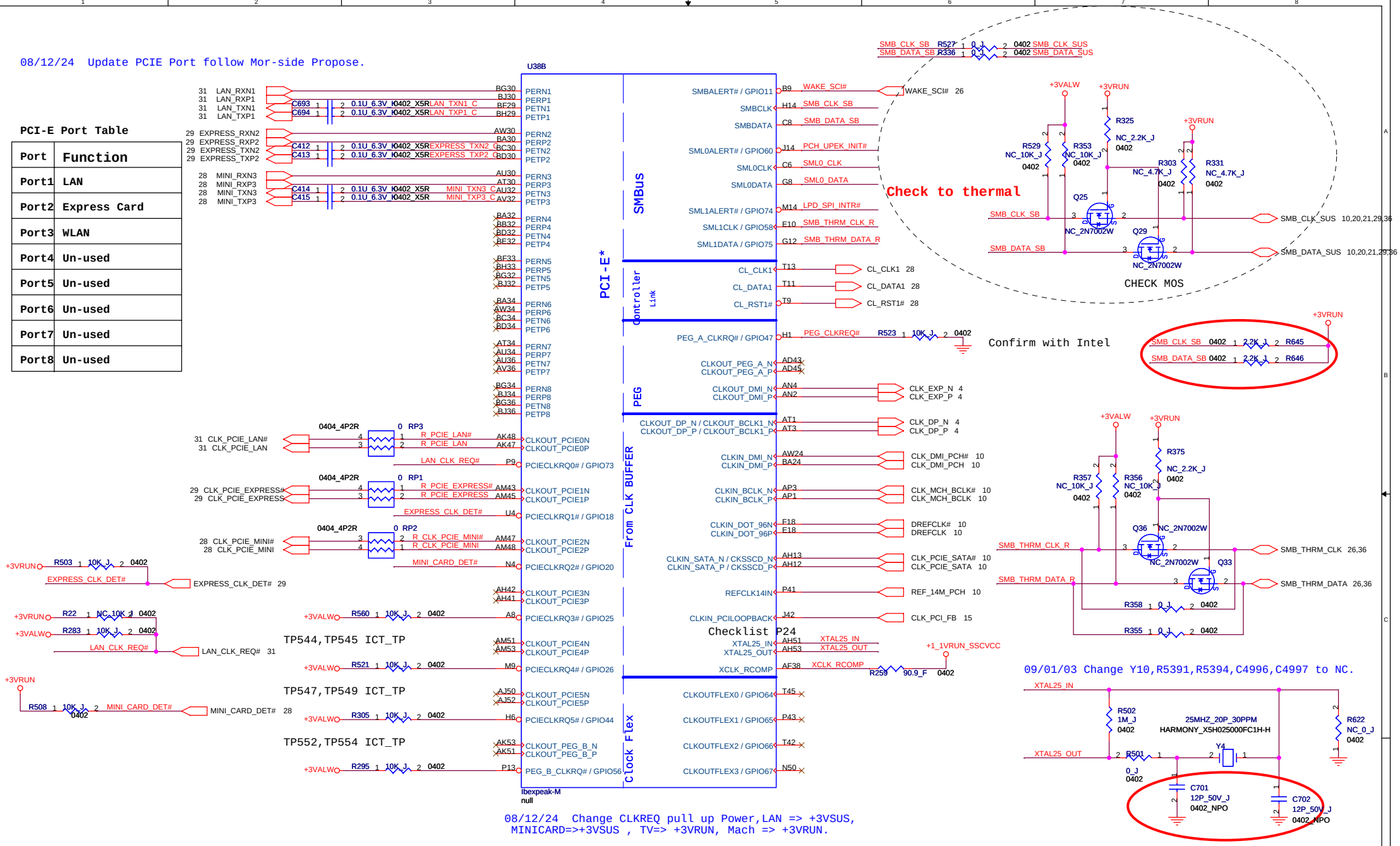
08/12/24 Update PCIE Port follow Mor-side Propose.

**PCI-E Port Table**

| Port | Function |
|---|---|
| Port1 | LAN |
| Port2 | Express Card |
| Port3 | WLAN |
| Port4 | Un-used |
| Port5 | Un-used |
| Port6 | Un-used |
| Port7 | Un-used |
| Port8 | Un-used |

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| Title | PCH (PCI-E,SMBUS,CLK) |
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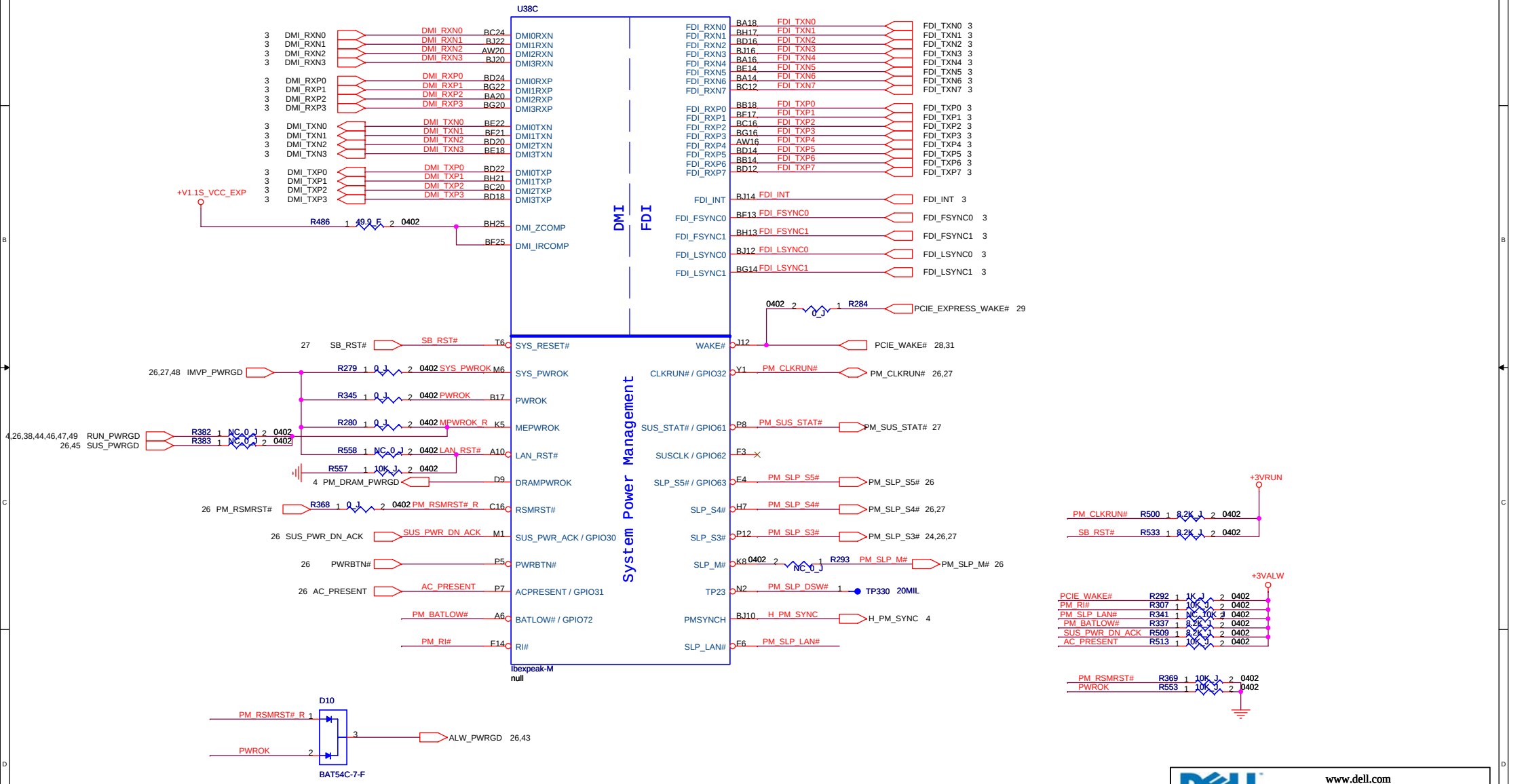


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| | | |
|---|---|---|
| Title | PCH (DMI,FDI,GPIO) | |
| Size A3 | Document Number H901L_A00 | Rev A00 |
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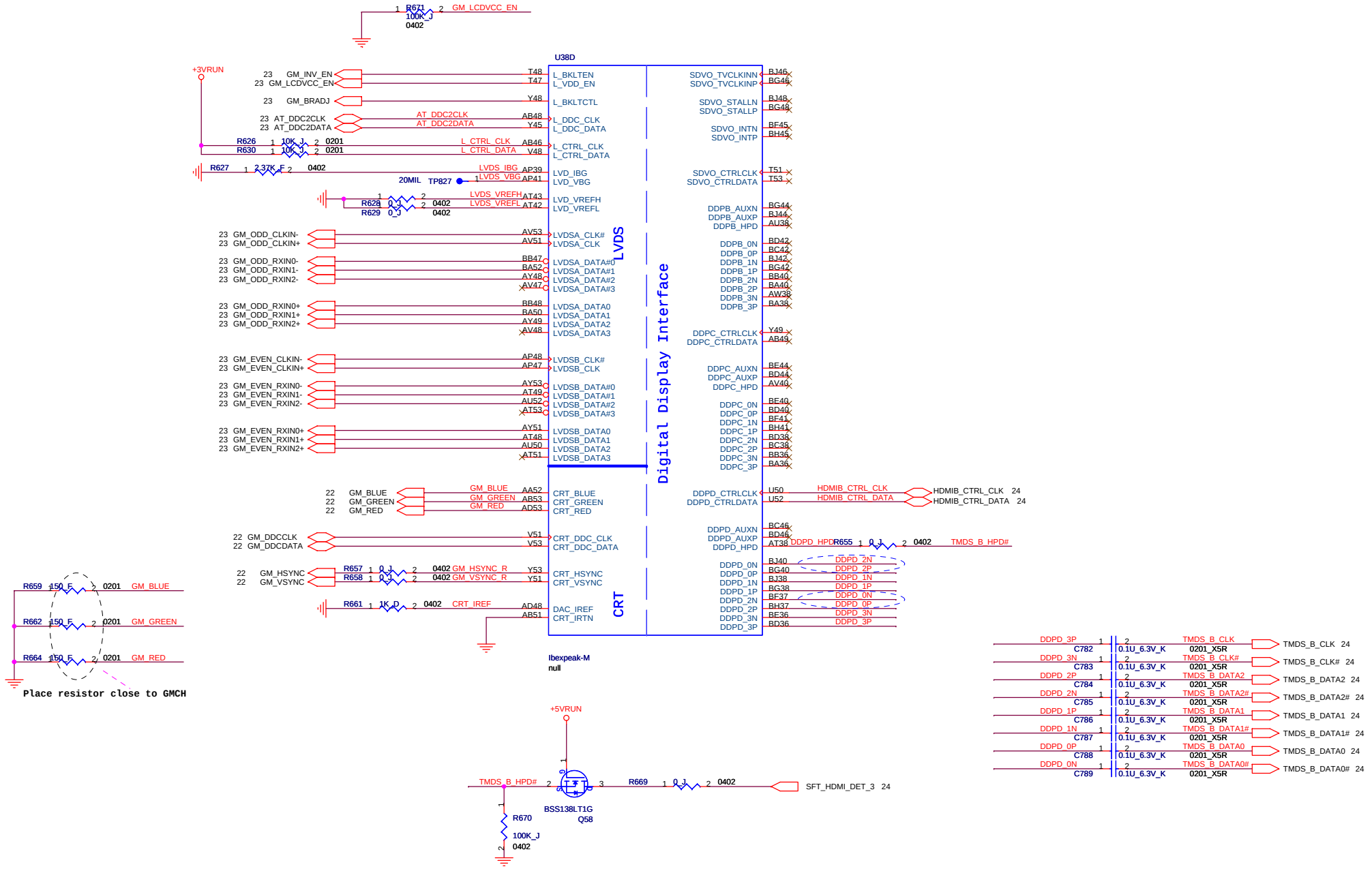




| | | | |
|---|---|---|---|
| Title | PCH (LVDS,DDI) | | |
| Size: Custom | Document Number: H9011L_A00 | | Rev: A00 |
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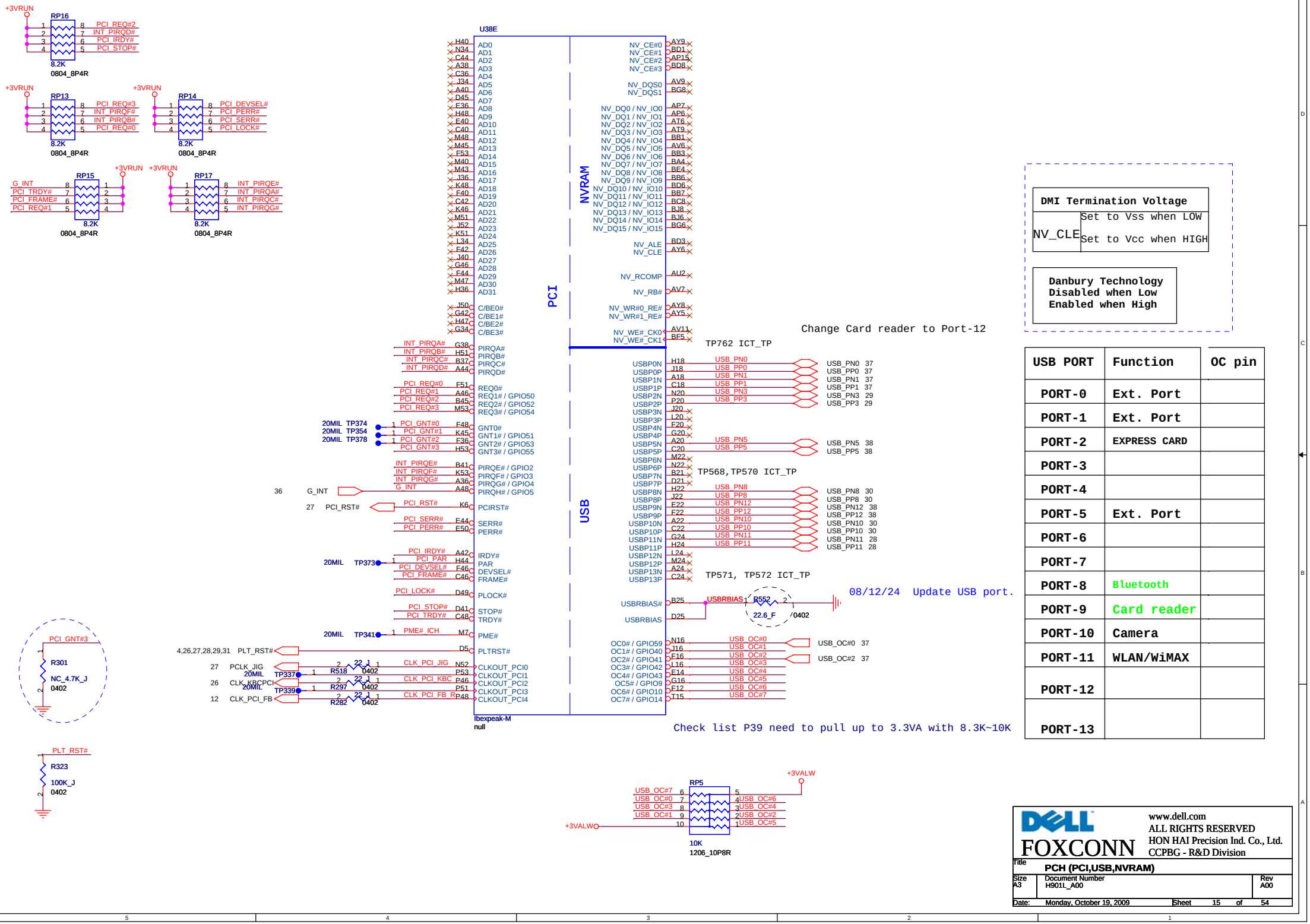


| USB PORT | Function | OC pin |
|---|---|---|
| PORT-0 | Ext. Port | |
| PORT-1 | Ext. Port | |
| PORT-2 | EXPRESS CARD | |
| PORT-3 | | |
| PORT-4 | | |
| PORT-5 | Ext. Port | |
| PORT-6 | | |
| PORT-7 | | |
| PORT-8 | Bluetooth | |
| PORT-9 | Card reader | |
| PORT-10 | Camera | |
| PORT-11 | WLAN/WiMAX | |
| PORT-12 | | |
| PORT-13 | | |



FOXCONN

Title: PCH (PCI,USB,NVRAM)

Size: A3 | Document Number: H901L_A00 | Rev: A00

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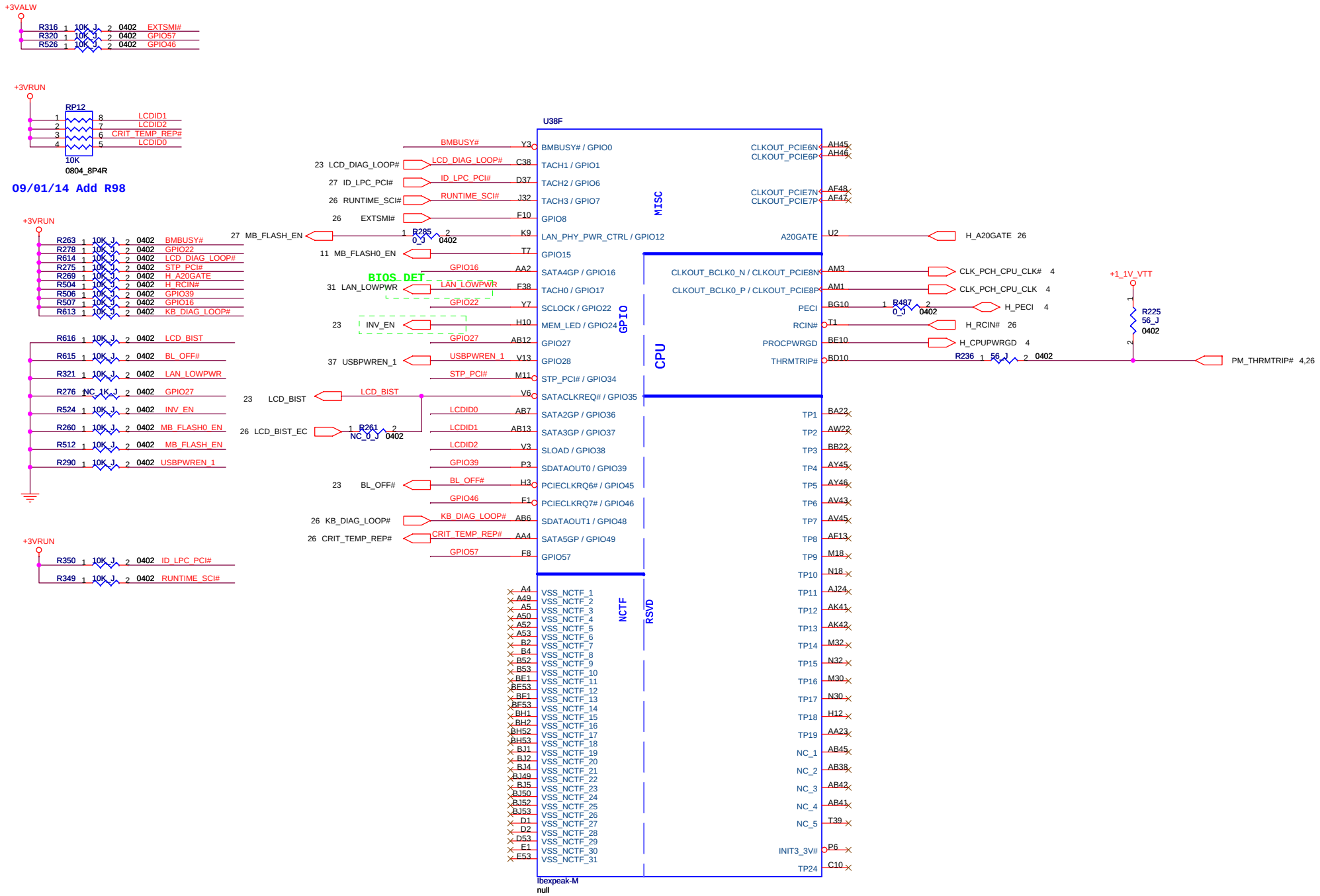
+3VALW
R316 10K_J 0402 EXTSMI#
R320 10K_J 0402 GPIO57
R526 10K_J 0402 GPIO46
+3VRUN
RP12
LCDID1
LCDID2
CRIT_TEMP_REP#
LCDID0
10K
0804_8P4R
09/01/14 Add R98
+3VRUN
R263 10K_J 0402 BMBUSY#
R278 10K_J 0402 GPIO22
R614 10K_J 0402 LCD_DIAG_LOOP#
R275 10K_J 0402 STP_PCI#
R269 10K_J 0402 H_A20GATE
R504 10K_J 0402 H_RCIN#
R506 10K_J 0402 GPIO39
R507 10K_J 0402 GPIO16
R613 10K_J 0402 KB_DIAG_LOOP#
R616 10K_J 0402 LCD_BIST
R615 10K_J 0402 BL_OFF#
R321 10K_J 0402 LAN_LOWPWR
R276 NC_1K_J 0402 GPIO27
R524 10K_J 0402 INV_EN
R260 10K_J 0402 MB_FLASH0_EN
R512 10K_J 0402 MB_FLASH_EN
R290 10K_J 0402 USBPWREN_1
+3VRUN
R350 10K_J 0402 ID_LPC_PCI#
R349 10K_J 0402 RUNTIME_SCI#
U38F
BMBUSY# Y3 BMBUSY# / GPIO0
23 LCD_DIAG_LOOP# LCD_DIAG_LOOP# C38 TACH1 / GPIO1
27 ID_LPC_PCI# ID_LPC_PCI# D37 TACH2 / GPIO6
26 RUNTIME_SCI# RUNTIME_SCI# J32 TACH3 / GPIO7
26 EXTSMI# F10 GPIO8
27 MB_FLASH_EN R285 0_J 0402 K9 LAN_PHY_PWR_CTRL / GPIO12
11 MB_FLASH0_EN T7 GPIO15
GPIO16 AA2 SATA4GP / GPIO16
BIOS_DET
31 LAN_LOWPWR LAN_LOWPWR F38 TACH0 / GPIO17
GPIO22 Y7 SCLOCK / GPIO22
23 INV_EN H10 MEM_LED / GPIO24
GPIO27 AB12 GPIO27
37 USBPWREN_1 USBPWREN_1 V13 GPIO28
STP_PCI# M11 STP_PCI# / GPIO34
23 LCD_BIST LCD_BIST V6 SATACLKREQ# / GPIO35
LCDID0 AB7 SATA2GP / GPIO36
26 LCD_BIST_EC R261 NC_0_J 0402 LCDID1 AB13 SATA3GP / GPIO37
LCDID2 V3 SLOAD / GPIO38
GPIO39 P3 SDATAOUT0 / GPIO39
23 BL_OFF# BL_OFF# H3 PCIECLKRQ6# / GPIO45
GPIO46 F1 PCIECLKRQ7# / GPIO46
26 KB_DIAG_LOOP# KB_DIAG_LOOP# AB6 SDATAOUT1 / GPIO48
26 CRIT_TEMP_REP# CRIT_TEMP_REP# AA4 SATA5GP / GPIO49
GPIO57 F8 GPIO57
GPIO
MISC
CPU
NCTF
RSVD
A4 VSS_NCTF_1
A49 VSS_NCTF_2
A5 VSS_NCTF_3
A50 VSS_NCTF_4
A52 VSS_NCTF_5
A53 VSS_NCTF_6
B2 VSS_NCTF_7
B4 VSS_NCTF_8
B52 VSS_NCTF_9
B53 VSS_NCTF_10
BE1 VSS_NCTF_11
BE53 VSS_NCTF_12
BF1 VSS_NCTF_13
BF53 VSS_NCTF_14
BH1 VSS_NCTF_15
BH2 VSS_NCTF_16
BH52 VSS_NCTF_17
BH53 VSS_NCTF_18
BJ1 VSS_NCTF_19
BJ2 VSS_NCTF_20
BJ4 VSS_NCTF_21
BJ49 VSS_NCTF_22
BJ5 VSS_NCTF_23
BJ50 VSS_NCTF_24
BJ52 VSS_NCTF_25
BJ53 VSS_NCTF_26
D1 VSS_NCTF_27
D2 VSS_NCTF_28
D53 VSS_NCTF_29
E1 VSS_NCTF_30
E53 VSS_NCTF_31
CLKOUT_PCIE6N AH45
CLKOUT_PCIE6P AH46
CLKOUT_PCIE7N AF48
CLKOUT_PCIE7P AF47
A20GATE U2 H_A20GATE 26
CLKOUT_BCLK0_N / CLKOUT_PCIE8N AM3 CLK_PCH_CPU_CLK# 4
CLKOUT_BCLK0_P / CLKOUT_PCIE8P AM1 CLK_PCH_CPU_CLK 4
PECI BG10 R487 0_J 0402 H_PECI 4
RCIN# T1 H_RCIN# 26
PROCPWRGD BE10 H_CPUPWRGD 4
THRMTRIP# BD10 R236 56_J 0402 PM_THRMTRIP# 4,26
+1_1V_VTT
R225 56_J 0402
TP1 BA22
TP2 AW22
TP3 BB22
TP4 AY45
TP5 AY46
TP6 AV43
TP7 AV45
TP8 AF13
TP9 M18
TP10 N18
TP11 AJ24
TP12 AK41
TP13 AK42
TP14 M32
TP15 N32
TP16 M30
TP17 N30
TP18 H12
TP19 AA23
NC_1 AB45
NC_2 AB38
NC_3 AB42
NC_4 AB41
NC_5 T39
INIT3_3V# P6
TP24 C10
Ibexpeak-M
null
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CCPBG - R&D Division
Title
PCH (GPIO,VSS_NCTF,RSVD)
Size A3
Document Number H9011L_A00
Rev A00
Date: Monday, October 19, 2009
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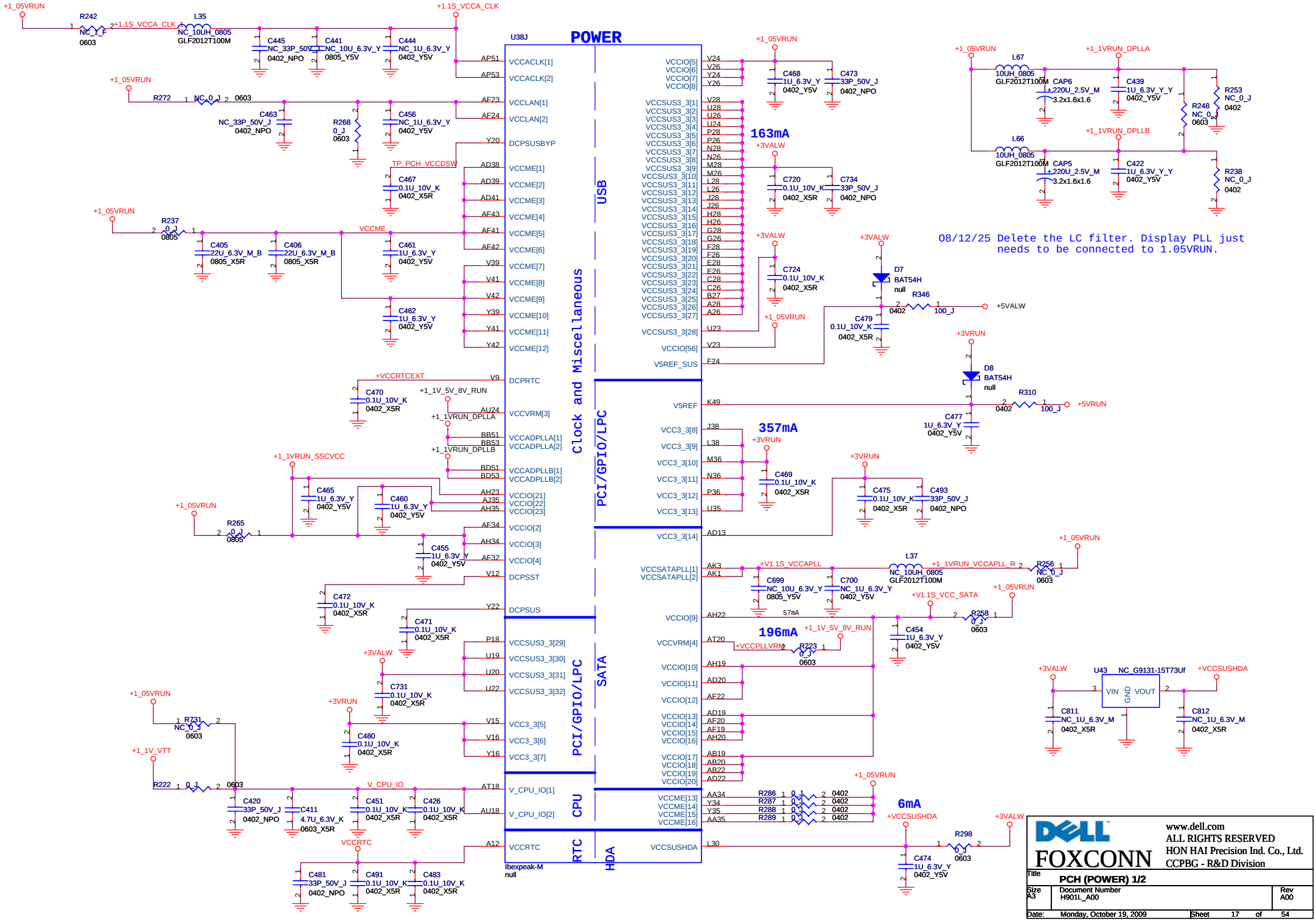
POWER
U38J
Clock and Miscellaneous
USB
PCI/GPIO/LPC
SATA
CPU
RTC
HDA
163mA
357mA
196mA
6mA
57mA
08/12/25 Delete the LC filter. Display PLL just needs to be connected to 1.05VRUN.
Ibexpeak-M
null
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FOXCONN
PCH (POWER) 1/2
Document Number H901L_A00
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Monday, October 19, 2009
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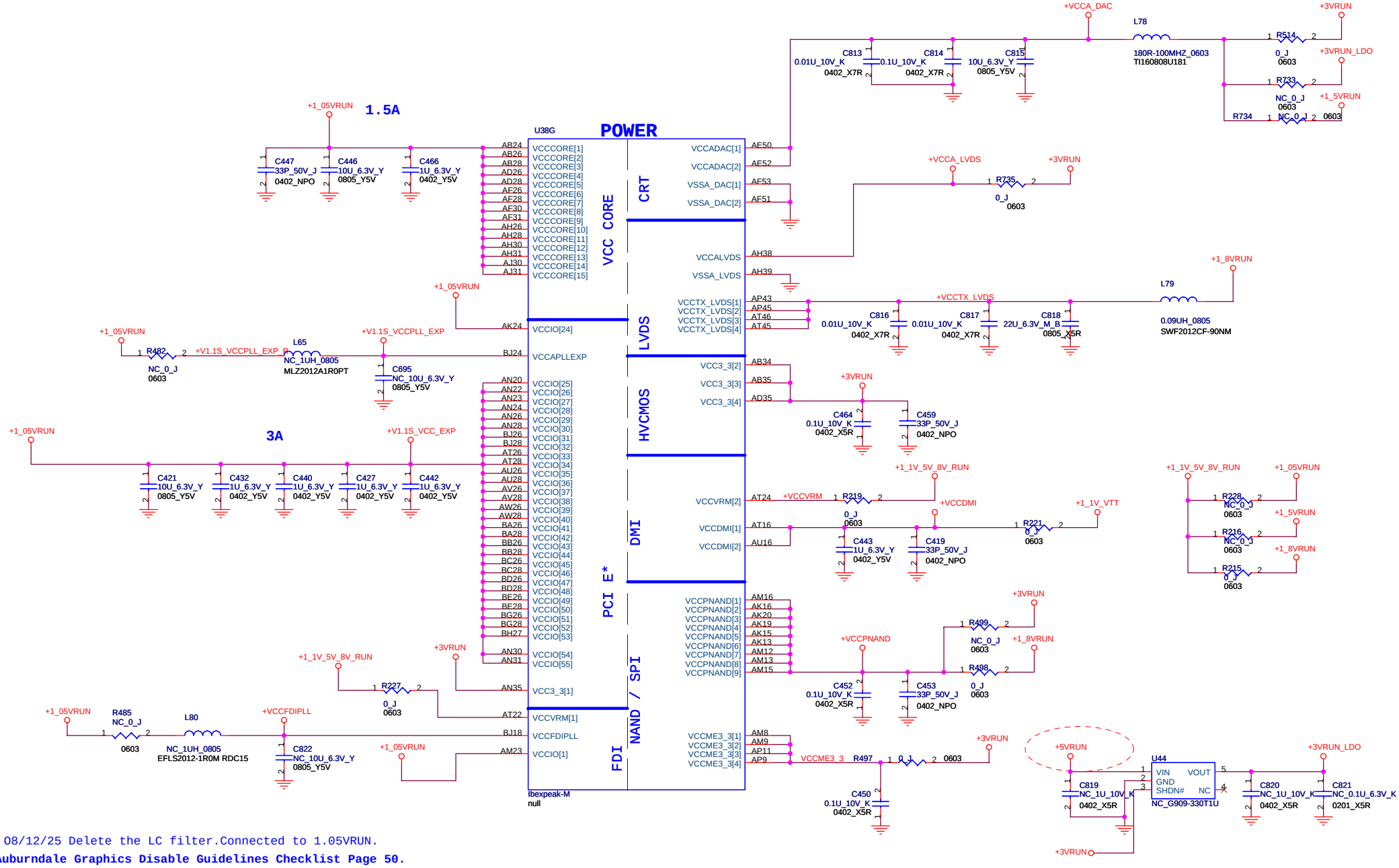
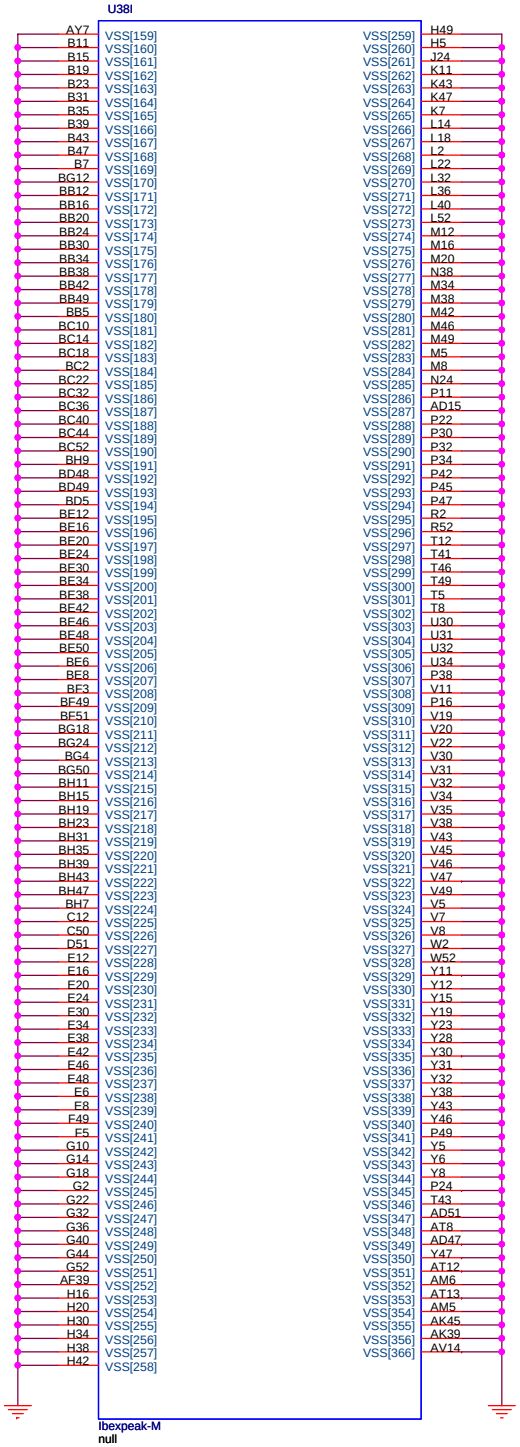
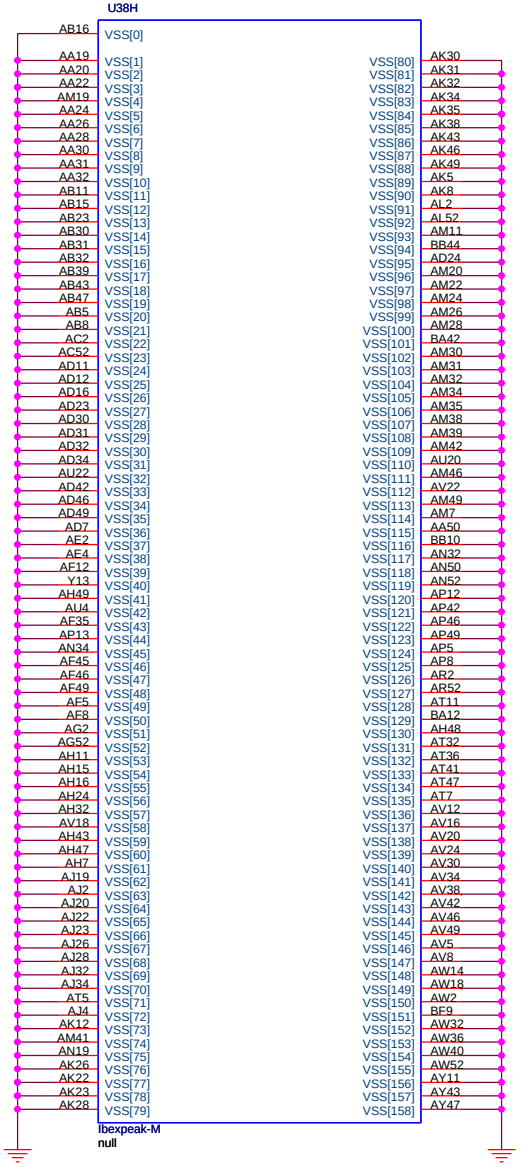



08/12/25 Delete the LC filter.Connected to 1.05VRUN.

**Auburndale Graphics Disable Guidelines Checklist Page 50.**






FOXCONN

Title: PCH (VSS)

| Size | Document Number | Rev |
|---|---|---|
| A3 | H9011L_A00 | A00 |

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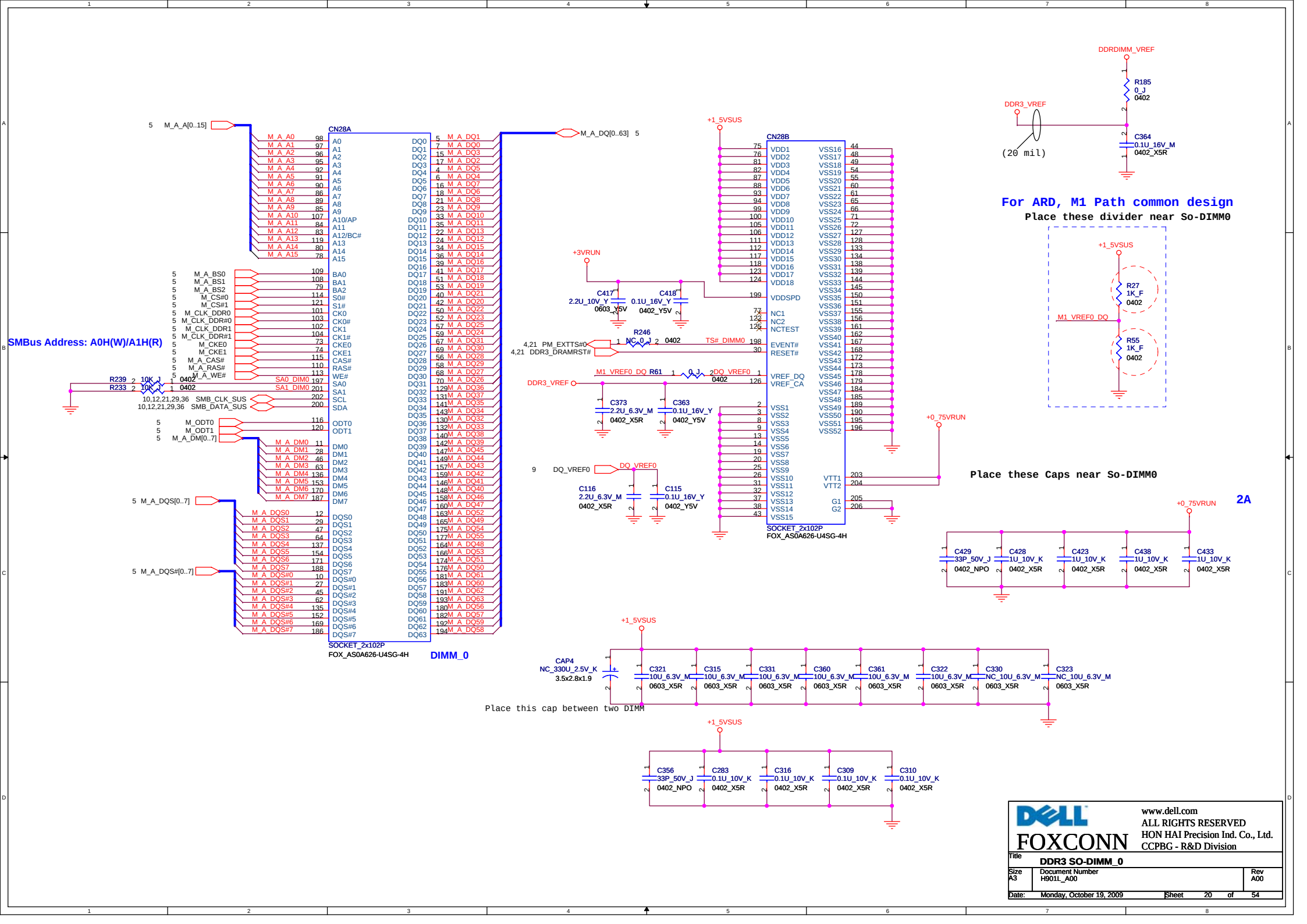
CN28A
SOCKET_2x102P
FOX_AS0A626-U4SG-4H
DIMM_0
CN28B
SOCKET_2x102P
FOX_AS0A626-U4SG-4H
SMBus Address: A0H(W)/A1H(R)
For ARD, M1 Path common design
Place these divider near So-DIMM0
Place these Caps near So-DIMM0
2A
Place this cap between two DIMM
DDRDIMM_VREF
DDR3_VREF
(20 mil)
R185 0_J 0402
C364 0.1U_16V_M 0402_X5R
R27 1K_F 0402
R55 1K_F 0402
M1_VREF0_DQ
+1_5VSUS
+3VRUN
+0_75VRUN
M_A_A[0..15]
M_A_DQ[0..63]
M_A_DQS[0..7]
M_A_DQS#[0..7]
M_A_DM[0..7]
M_A_BS0
M_A_BS1
M_A_BS2
M_CS#0
M_CS#1
M_CLK_DDR0
M_CLK_DDR#0
M_CLK_DDR1
M_CLK_DDR#1
M_CKE0
M_CKE1
M_A_CAS#
M_A_RAS#
M_A_WE#
M_ODT0
M_ODT1
SA0_DIM0
SA1_DIM0
SMB_CLK_SUS
SMB_DATA_SUS
TS#_DIMM0
PM_EXTTS#0
DDR3_DRAMRST#
DQ_VREF0
R239 10K_J 0402
R233 10K_J 0402
R246 NC_0_J 0402
R61 0_J 0402
C417 2.2U_10V_Y 0603_Y5V
C418 0.1U_16V_Y 0402_Y5V
C373 2.2U_6.3V_M 0402_X5R
C363 0.1U_16V_Y 0402_Y5V
C116 2.2U_6.3V_M 0402_X5R
C115 0.1U_16V_Y 0402_Y5V
CAP4 NC_330U_2.5V_K 3.5x2.8x1.9
C321 10U_6.3V_M 0603_X5R
C315 10U_6.3V_M 0603_X5R
C331 10U_6.3V_M 0603_X5R
C360 10U_6.3V_M 0603_X5R
C361 10U_6.3V_M 0603_X5R
C322 10U_6.3V_M 0603_X5R
C330 NC_10U_6.3V_M 0603_X5R
C323 NC_10U_6.3V_M 0603_X5R
C429 33P_50V_J 0402_NPO
C428 1U_10V_K 0402_X5R
C423 1U_10V_K 0402_X5R
C438 1U_10V_K 0402_X5R
C433 1U_10V_K 0402_X5R
C356 33P_50V_J 0402_NPO
C283 0.1U_10V_K 0402_X5R
C316 0.1U_10V_K 0402_X5R
C309 0.1U_10V_K 0402_X5R
C310 0.1U_10V_K 0402_X5R
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Title
DDR3 SO-DIMM_0
Size A3
Document Number H901L_A00
Rev A00
Date: Monday, October 19, 2009
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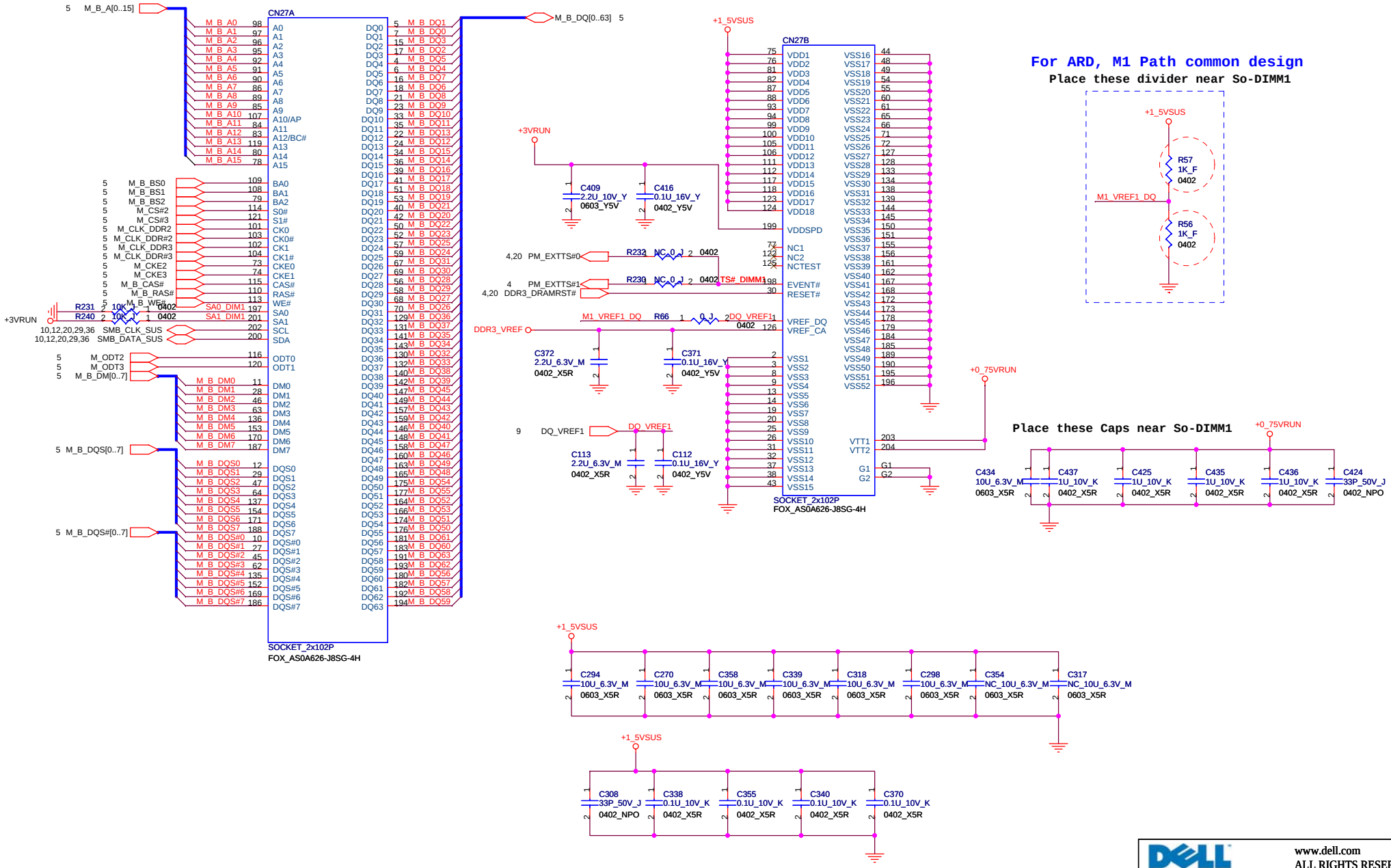


| | |
|---|---|
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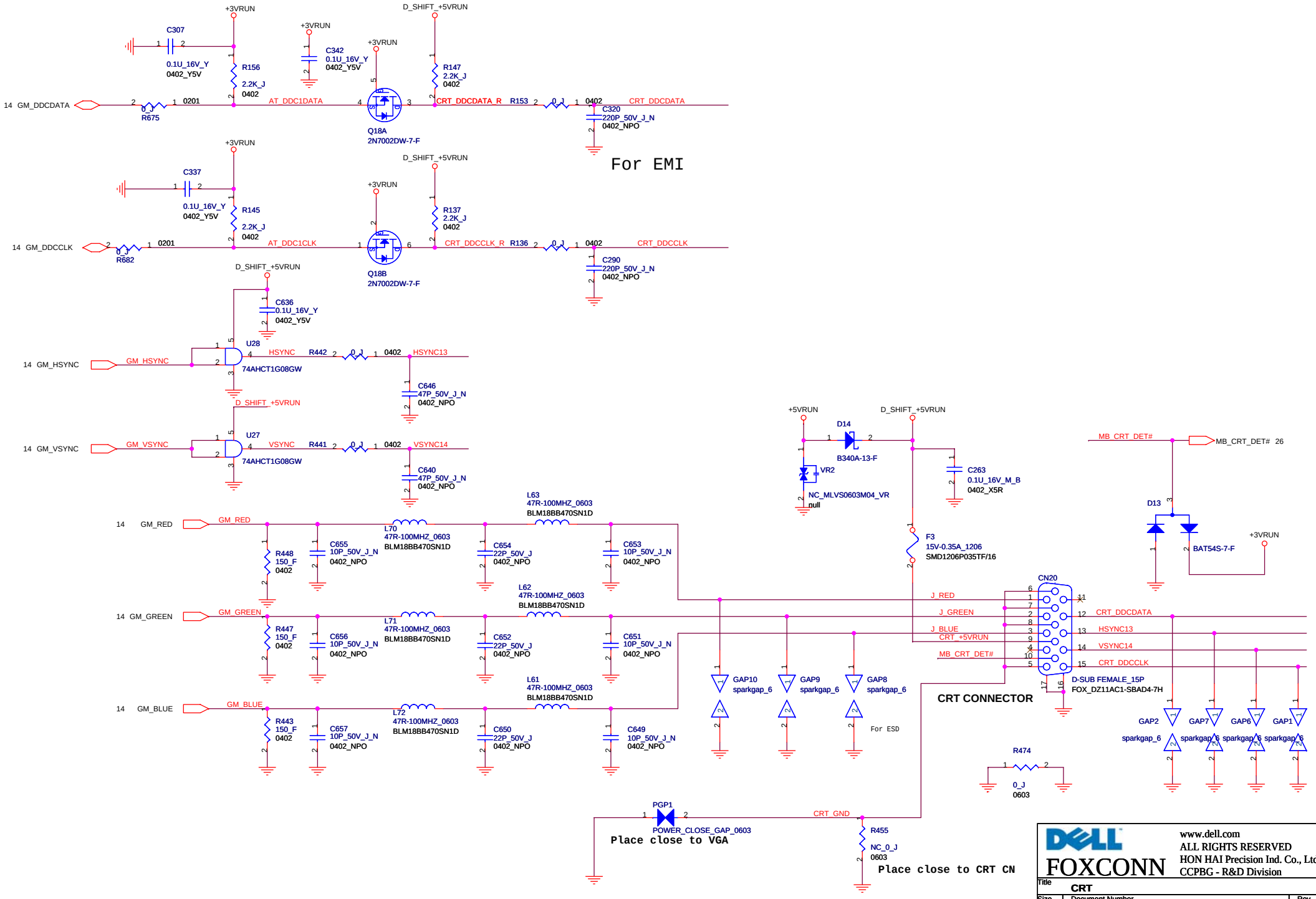
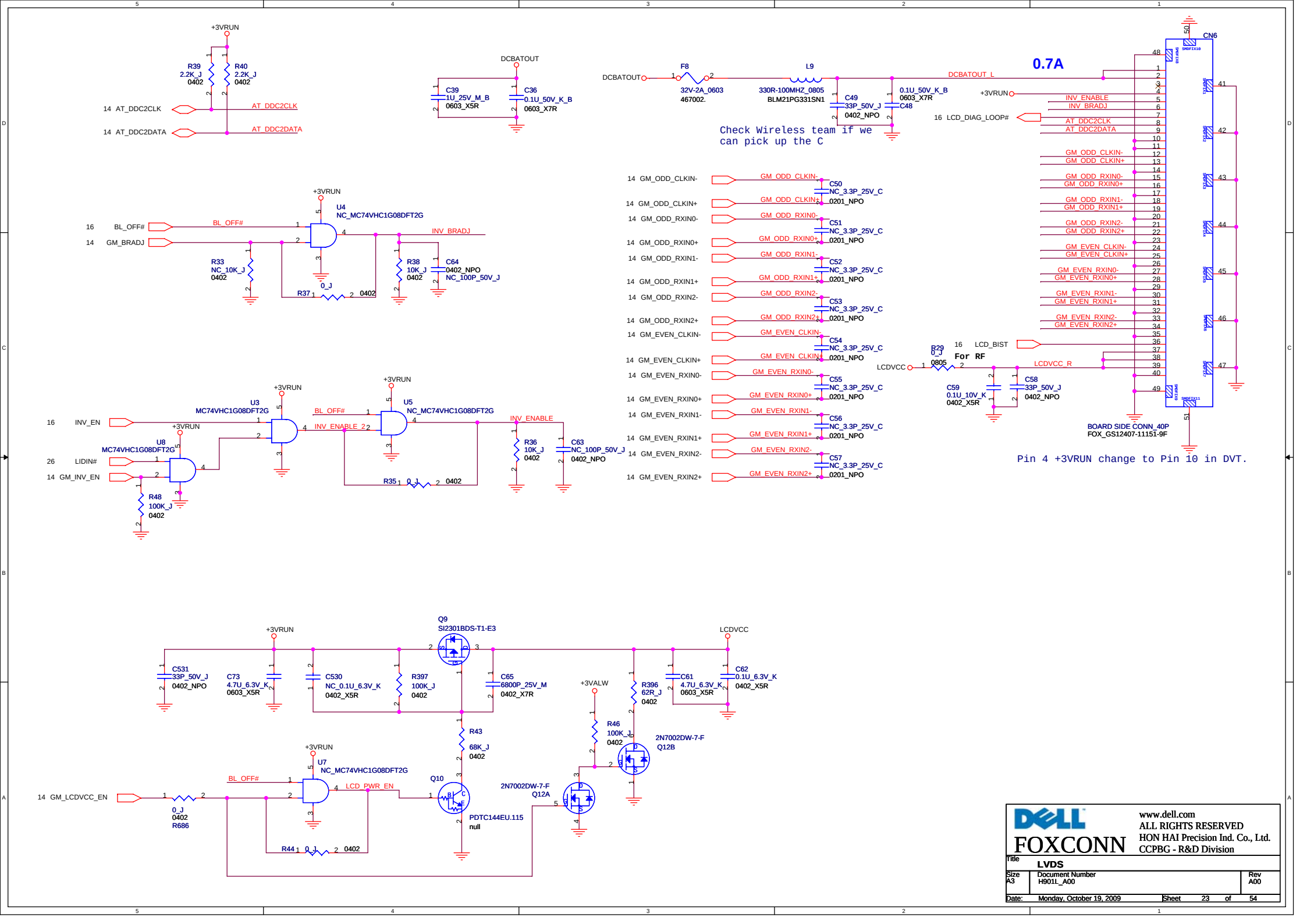
| CCPBG - R&D Division | |
| Title | DDR3 SO-DIMM_1 |
| Size A3 | Document Number H901L_A00 |
| Rev | A00 |
| Date: Monday, October 19, 2009 | Sheet 21 of 54 |






| | | |
|---|---|---|
| Title | CRT | |
| Size A3 | Document Number H901L_A00 | Rev A00 |
| Date: Friday, October 30, 2009 | Sheet 22 of 54 | |




| | | |
|---|---|---|
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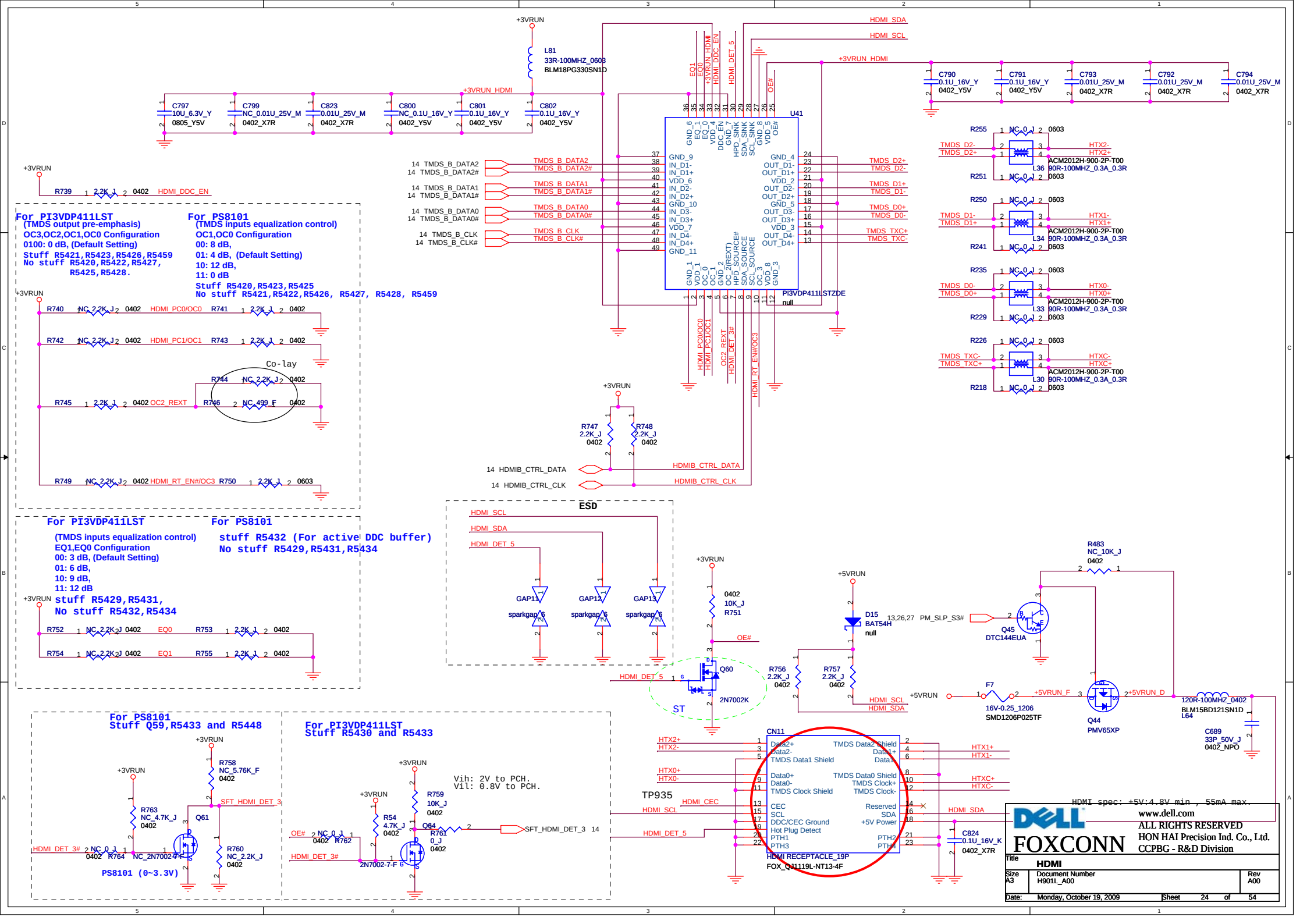
| Title: LVDS | | |
| Size: A3 | Document Number: H901L_A00 | Rev: A00 |
| Date: Monday, October 19, 2009 | Sheet 23 of 54 | |


For PI3VDP411LST
(TMDS output pre-emphasis)
OC3,OC2,OC1,OC0 Configuration
0100: 0 dB, (Default Setting)
Stuff R5421,R5423,R5426,R5459
No stuff R5420,R5422,R5427,
R5425,R5428.
For PS8101
(TMDS inputs equalization control)
OC1,OC0 Configuration
00: 8 dB,
01: 4 dB, (Default Setting)
10: 12 dB,
11: 0 dB
Stuff R5420,R5423,R5425
No stuff R5421,R5422,R5426, R5427, R5428, R5459
For PI3VDP411LST
(TMDS inputs equalization control)
EQ1,EQ0 Configuration
00: 3 dB, (Default Setting)
01: 6 dB,
10: 9 dB,
11: 12 dB
stuff R5429,R5431,
No stuff R5432,R5434
For PS8101
stuff R5432 (For active DDC buffer)
No stuff R5429,R5431,R5434
For PS8101
Stuff Q59,R5433 and R5448
PS8101 (0~3.3V)
For PI3VDP411LST
Stuff R5430 and R5433
Vih: 2V to PCH.
Vil: 0.8V to PCH.
ESD
Co-lay
TP935
U41
PI3VDP411LSTZDE
null
CN11
HDMI RECEPTACLE_19P
FOX_QJ1119L-NT13-4F
HDMI spec: +5V:4.8V min , 55mA max.
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FOXCONN
Title
HDMI
Size A3
Document Number H901L_A00
Rev A00
Date: Monday, October 19, 2009
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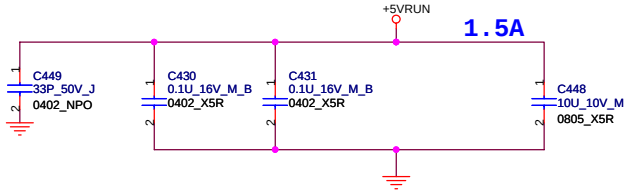
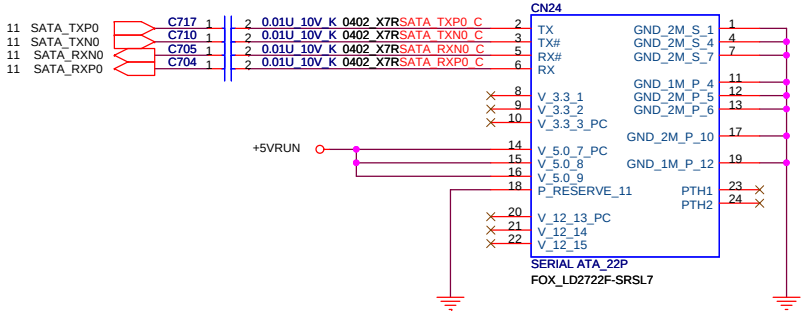
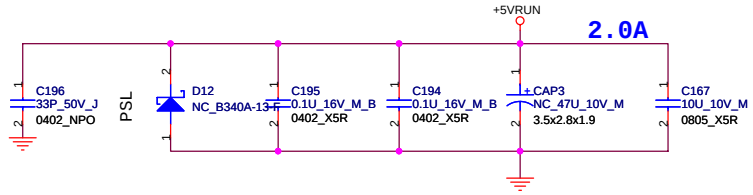
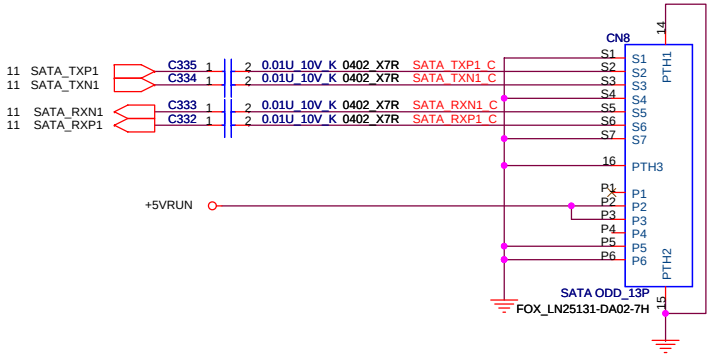



# SATA HDD CONN




# SATA ODD CONN



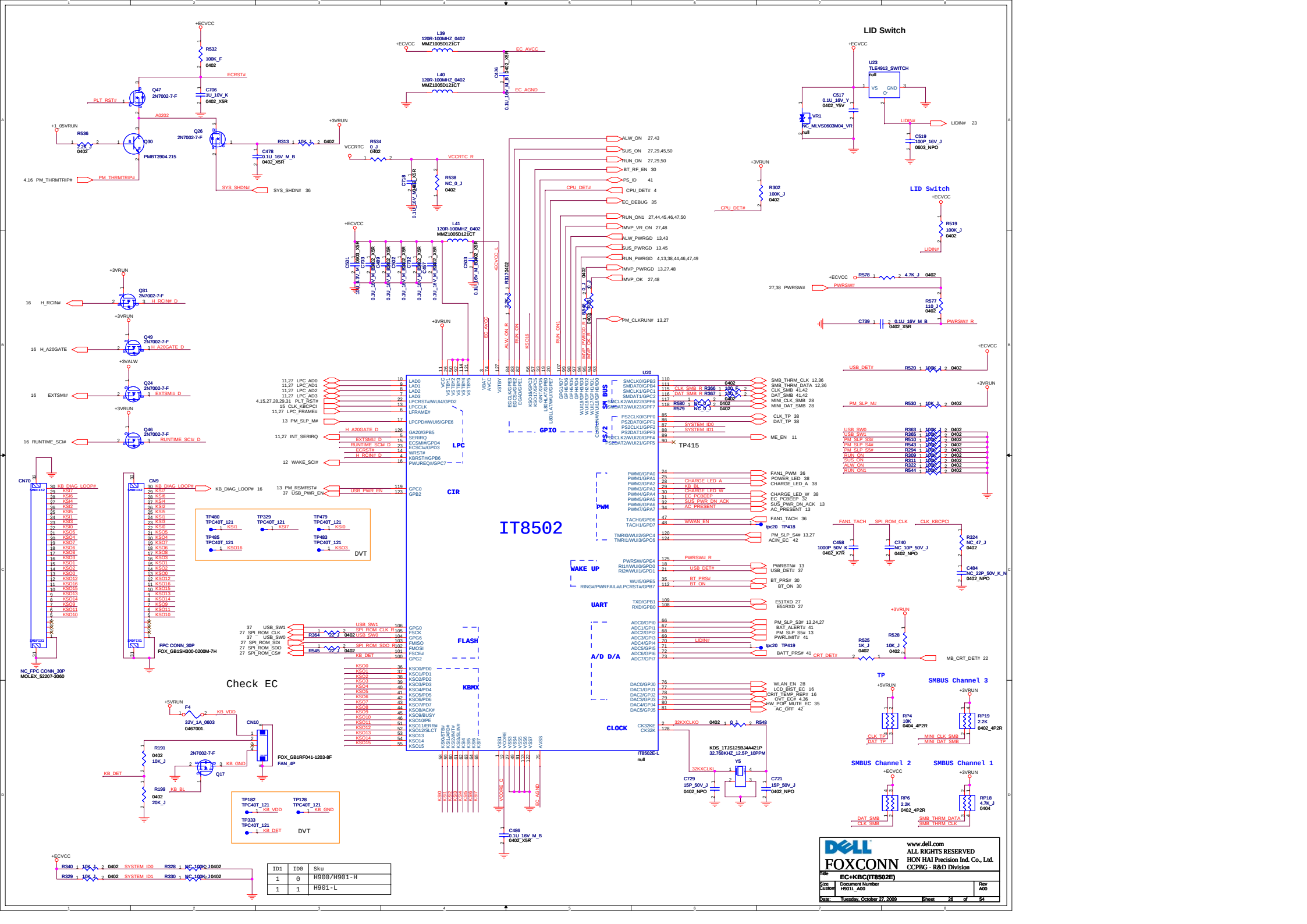




# ODD CON ADAPTER

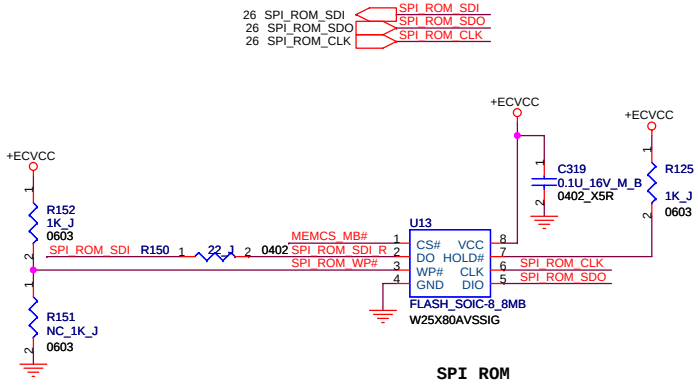
Add CN68 need 2N-0013009-FKG0 in BOM



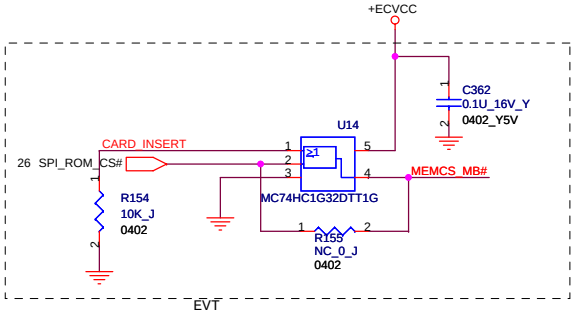
| | | |
|---|---|---|
| Title: SATA HDD/ODD | | |
| Size: A3 | Document Number: H901L_A00 | Rev: A00 |
| Date: Monday, October 19, 2009 | Sheet 25 of 54 | |



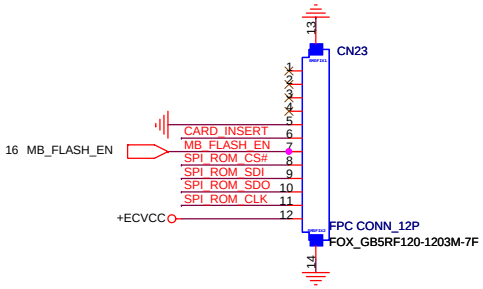

| ID1 | ID0 | Sku |
|---|---|---|
| 1 | 0 | H900/H901-H |
| 1 | 1 | H901-L |



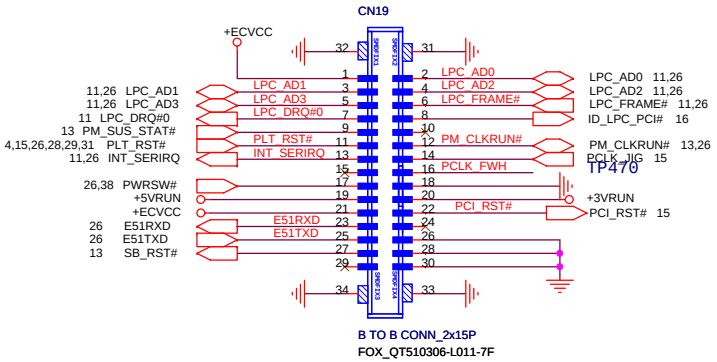

**SPI ROM**



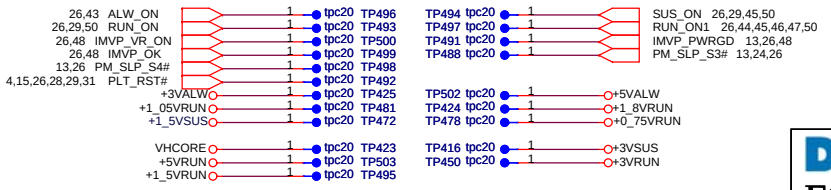

EVT
When MP, change U11 no stuff, R233 stuff




**EXTERNAL SPI ROM INTERFACE**




**JIG-120**

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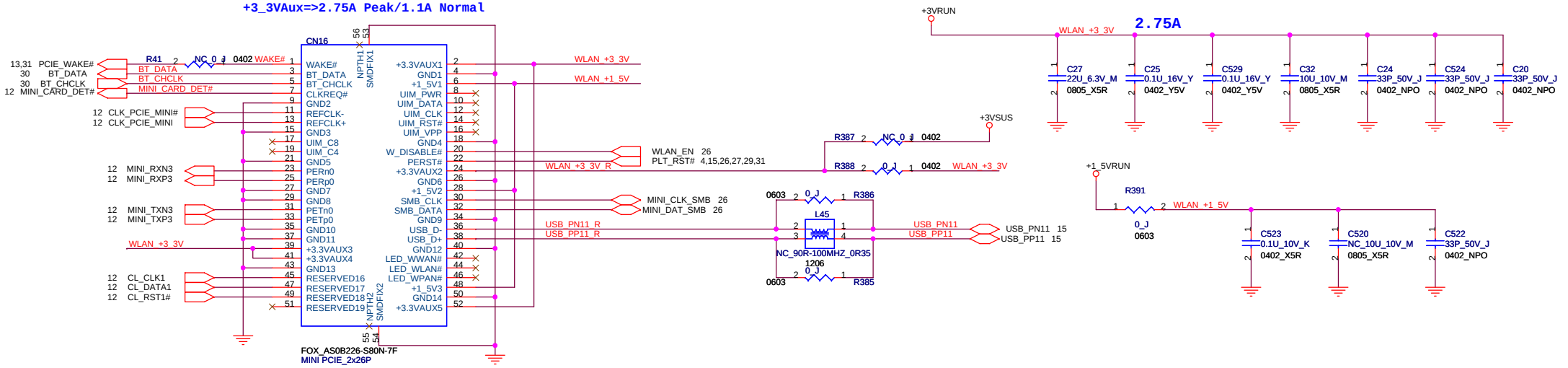
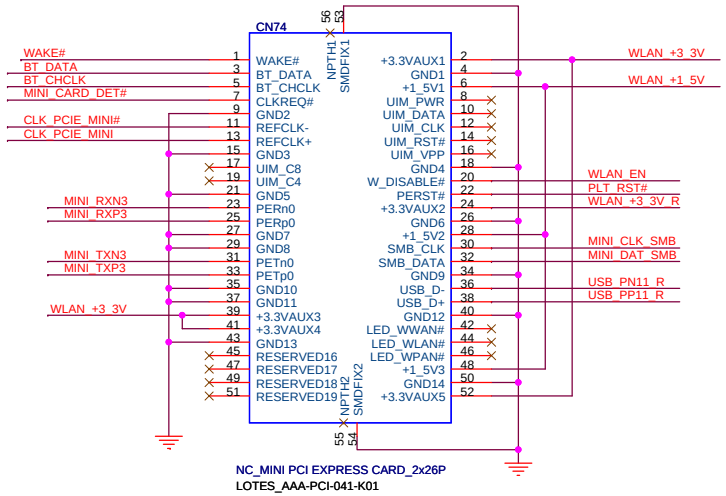
| | | |
|---|---|---|
| Title: Flash ROM/SPI | | |
| Size: A3 | Document Number: H9011_A00 | Rev: A00 |
| Date: Monday, October 19, 2009 | Sheet 27 of 54 | |

**+1_5V=>0.5A Peak/0.375A Normal**
**+3_3VAux=>2.75A Peak/1.1A Normal**




**Half Mini Card for WLAN or WiMAX**




**Colay: Half Mini Card CN second source**

| | | |
|---|---|---|
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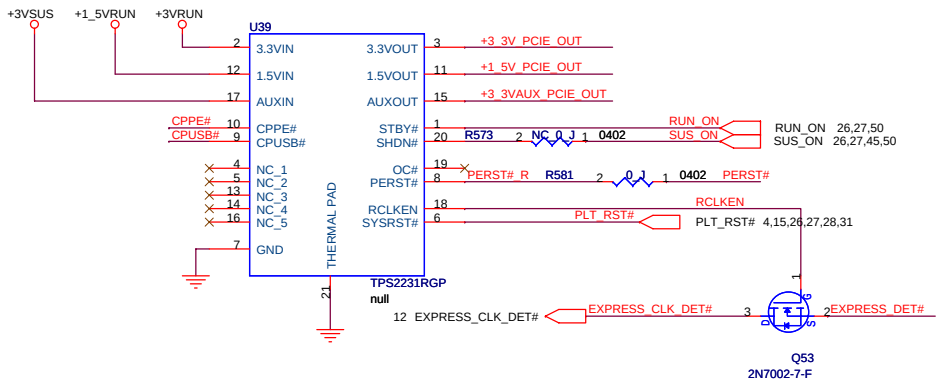
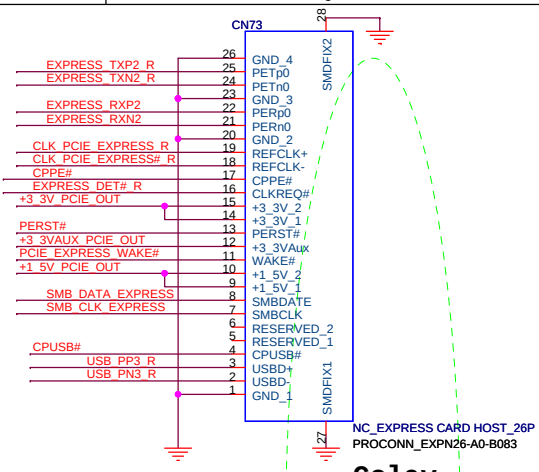
| Title: **WLAN/Wimax Mini-PCIE Card** | | |
| Size: A3 | Document Number: H9011_A00 | Rev: A00 |
| Date: Monday, October 19, 2009 | Sheet 28 of 54 | |

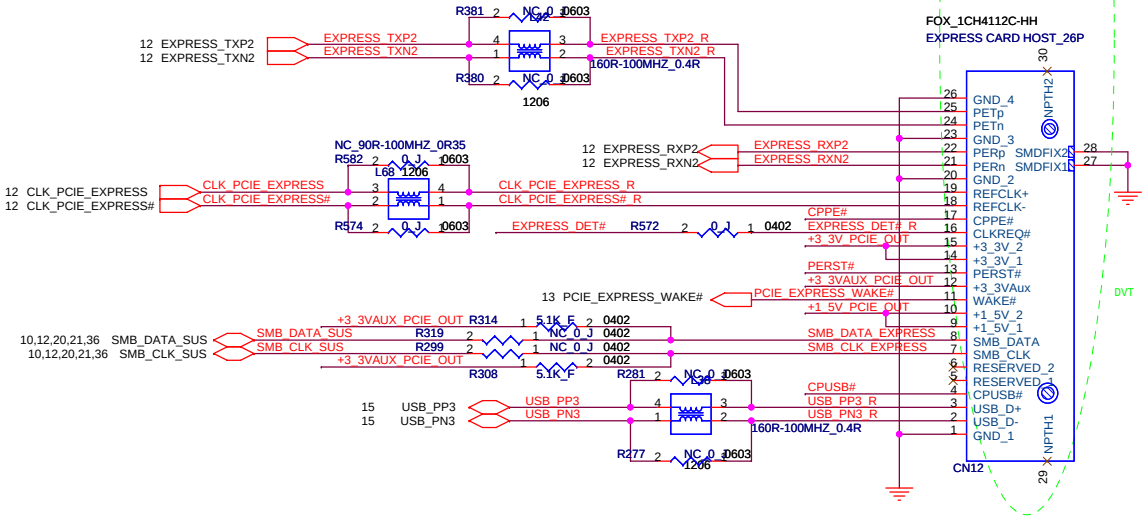
**+1_5V=>650mA**
**+3_3VAux=>275mA**
**+3_3V=>1.3A**

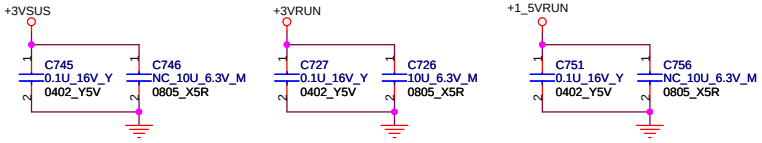
## Express Card Power Switch

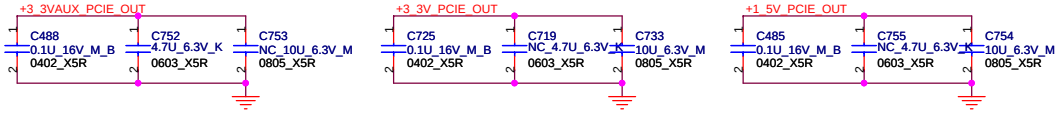


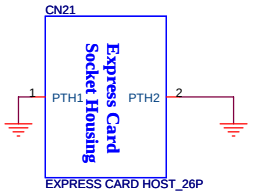

**Colay**

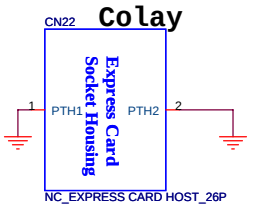


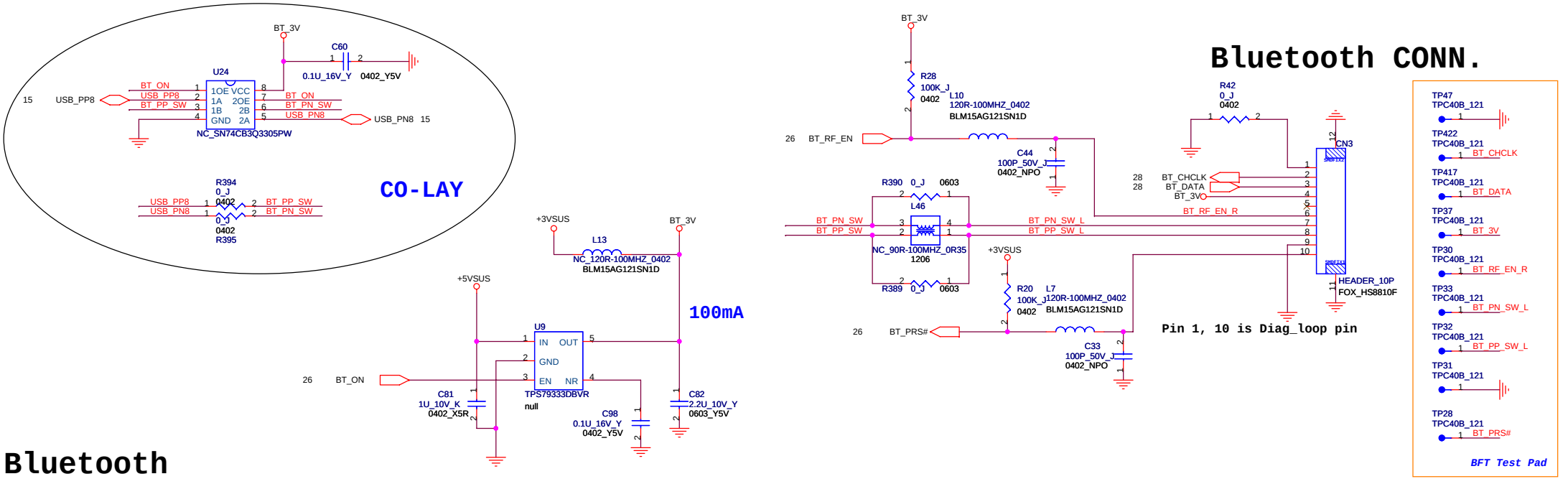

## Express Card Slot.

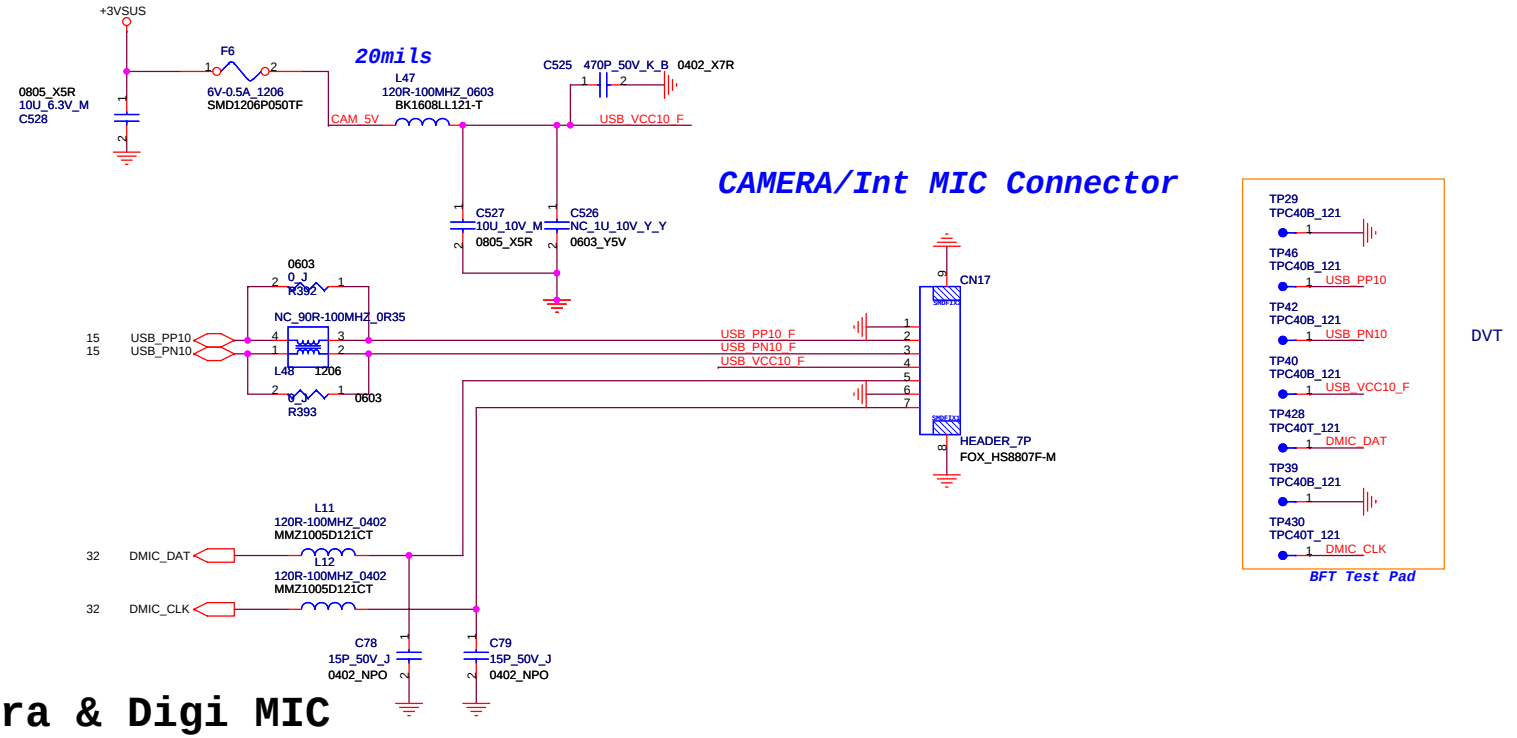





| | | |
|---|---|---|
| Title: Express card | | |
| Size: A3 | Document Number: H901L_A00 | Rev: A00 |
| Date: Friday, October 30, 2009 | Sheet 29 of 54 | |

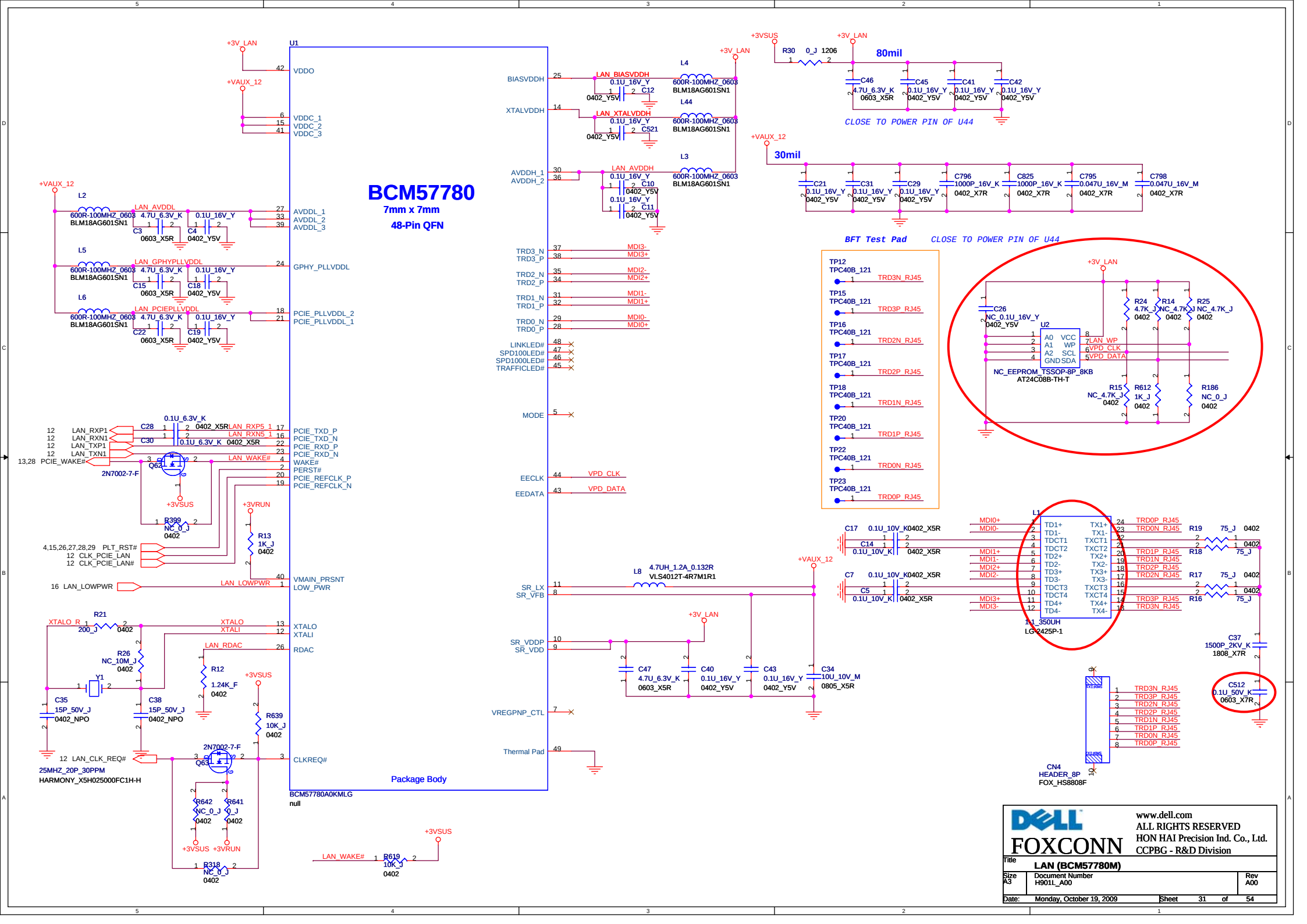





FOXCONN

| | | | |
|---|---|---|---|
| Title | BT & CAMERA/Dig MIC CON | | |
| Size A3 | Document Number H9011L_A00 | | Rev A00 |
| Date: Monday, October 19, 2009 | Sheet 30 of 54 | | |


BCM57780
7mm x 7mm
48-Pin QFN
Package Body
U1
BCM57780A0KMLG
null
80mil
30mil
CLOSE TO POWER PIN OF U44
CLOSE TO POWER PIN OF U44
BFT Test Pad
NC_EEPROM_TSSOP-8P_8KB
AT24C08B-TH-T
2N7002-7-F
2N7002-7-F
25MHZ_20P_30PPM
HARMONY_X5H025000FC1H-H
L1
1:1_350UH
LG-2425P-1
CN4
HEADER_8P
FOX_HS8808F
FOXCONN
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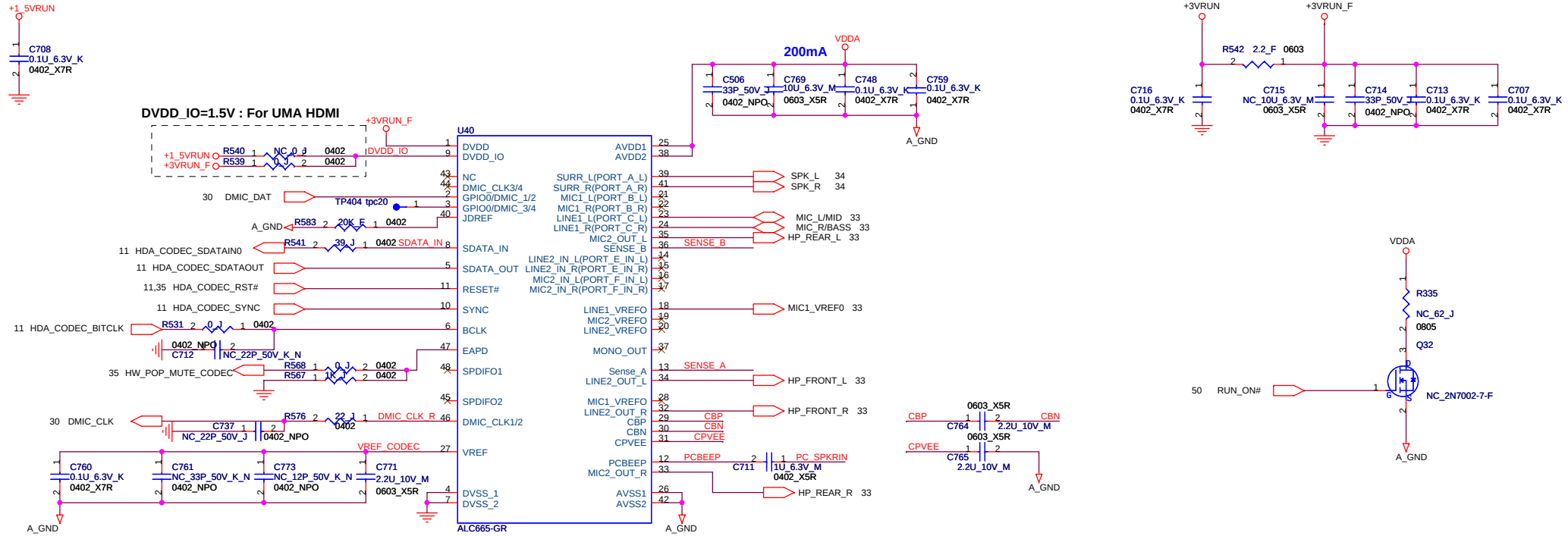
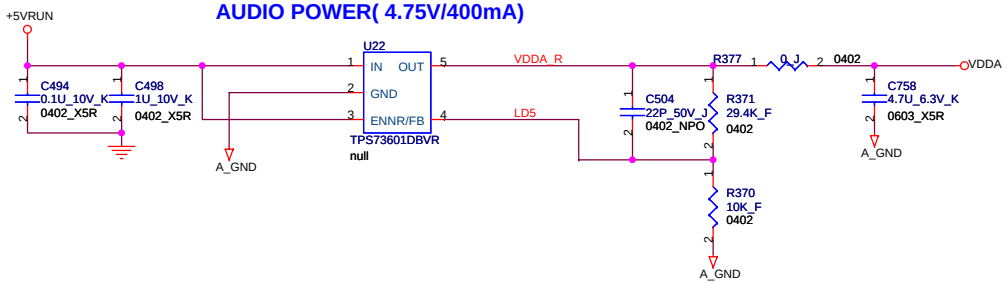
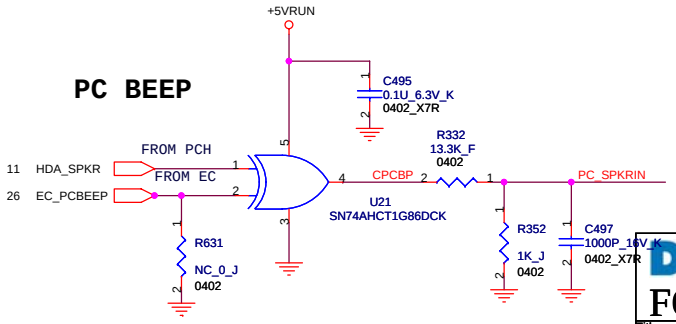
CCPBG - R&D Division
Title
LAN (BCM57780M)
Size A3
Document Number H901L_A00
Rev A00
Date: Monday, October 19, 2009
Sheet 31 of 54

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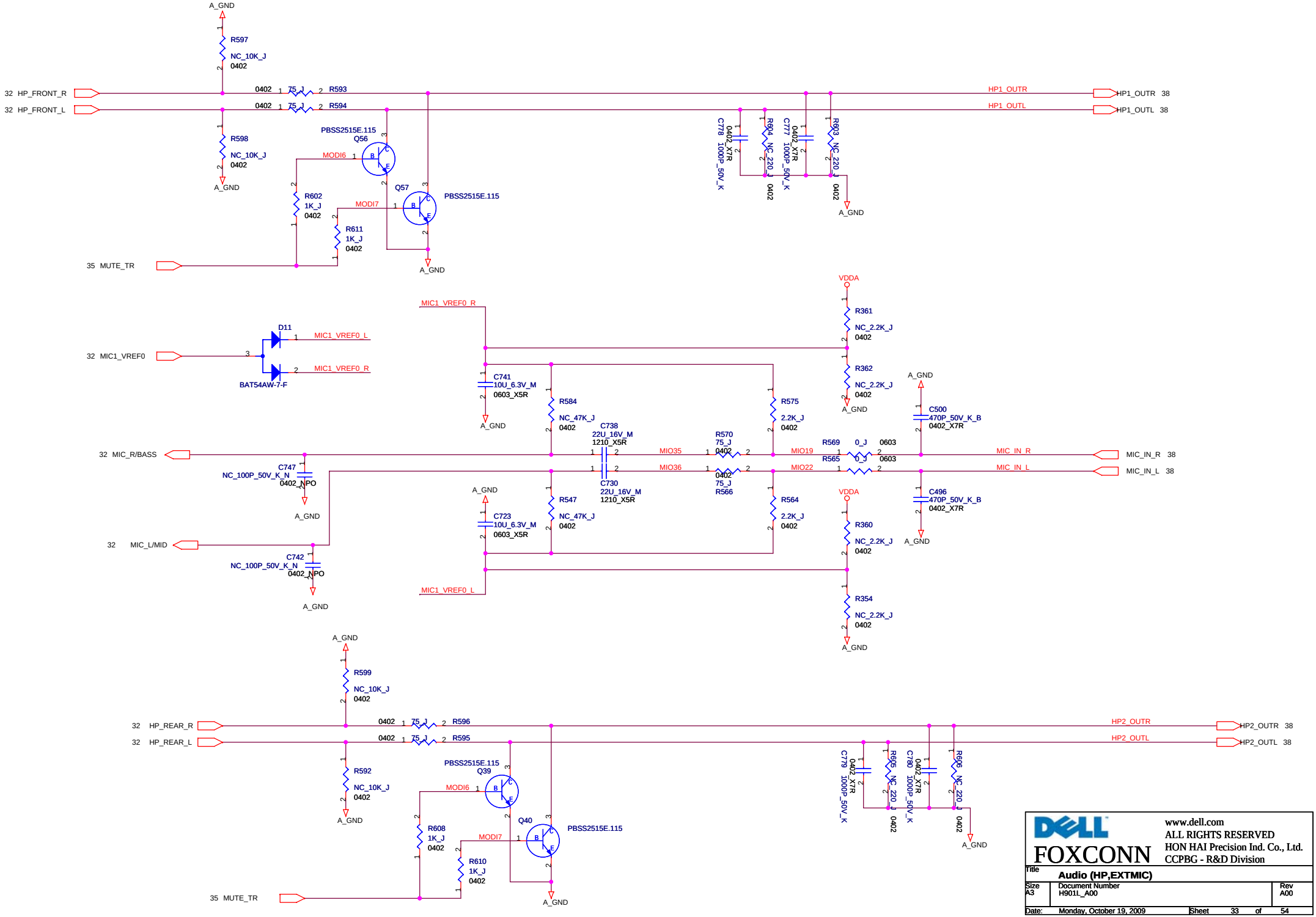
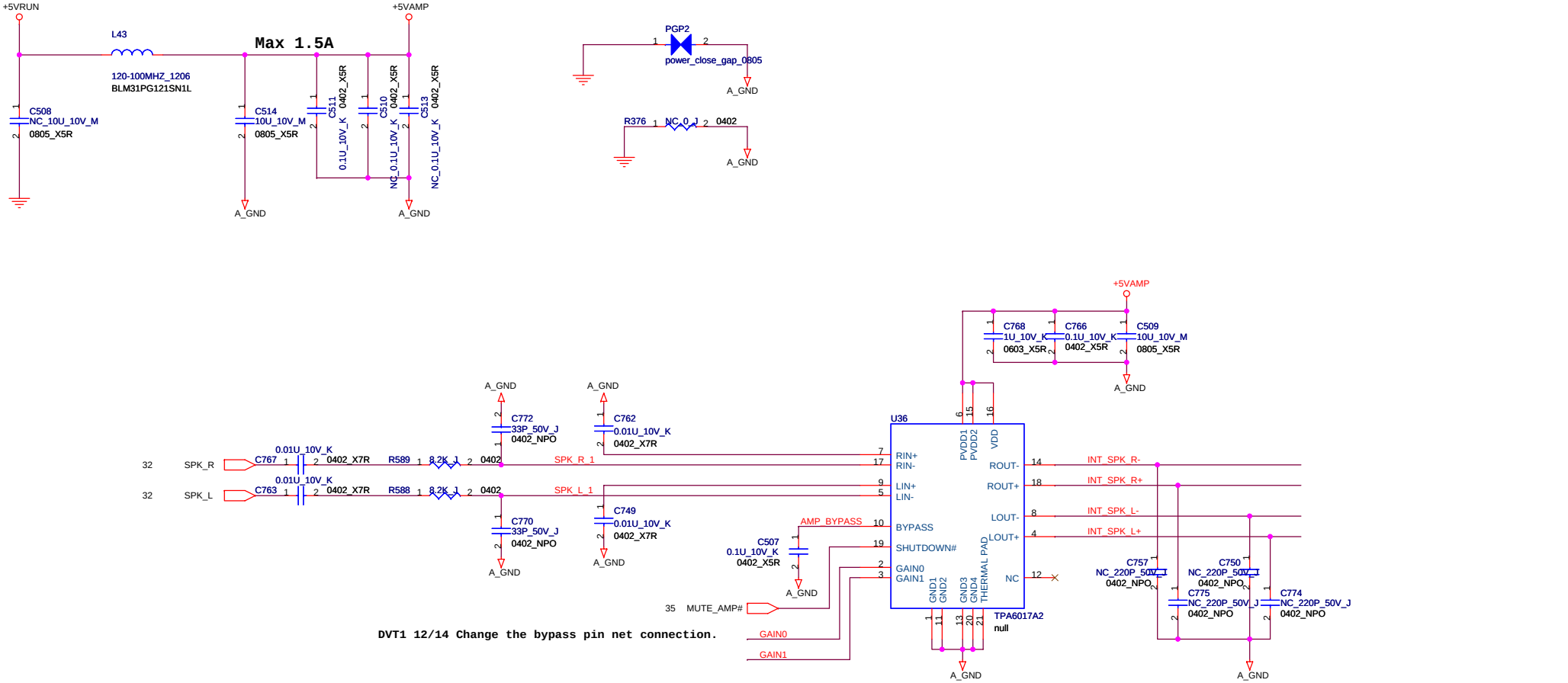
| | | |
|---|---|---|
| Title | Audio (CODEC & POWER) | |
| Size A3 | Document Number H901L_A00 | Rev A00 |
| Date: Tuesday, October 27, 2009 | Sheet 32 of 54 | |

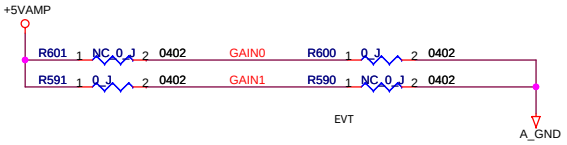





| | | | |
|---|---|---|---|
| Title | Audio (HP,EXTMIC) | | |
| Size A3 | Document Number H901L_A00 | | Rev A00 |
| Date: Monday, October 19, 2009 | Sheet 33 of 54 | | |




**DVT1 12/14 Change the bypass pin net connection.**

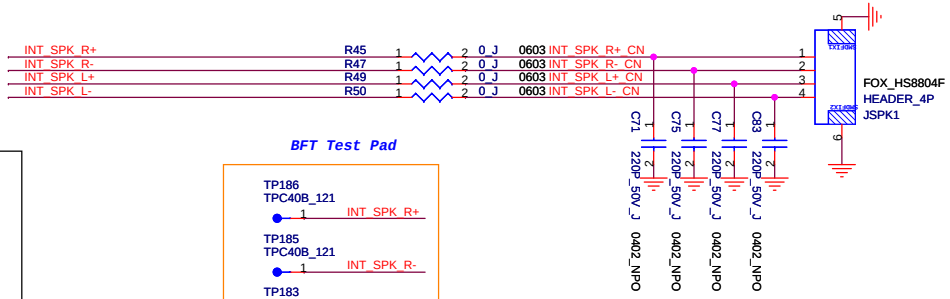



## SPEAKER AMP

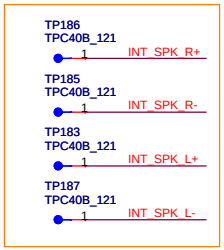
| | GAIN0 | GAIN1 |
|---|---|---|
| 6 dB | 0 | 0 |
| 10 dB | 0 | 1 |
| 15.6 dB | 1 | 0 |
| 21.6 dB | 1 | 1 |

dB=20logGain
If set 10dB , gain is 3.162.
Po = {(1.2Vrms * 3.162)^2} / 4 = 3.599 W

## INTERNAL SPEAKER

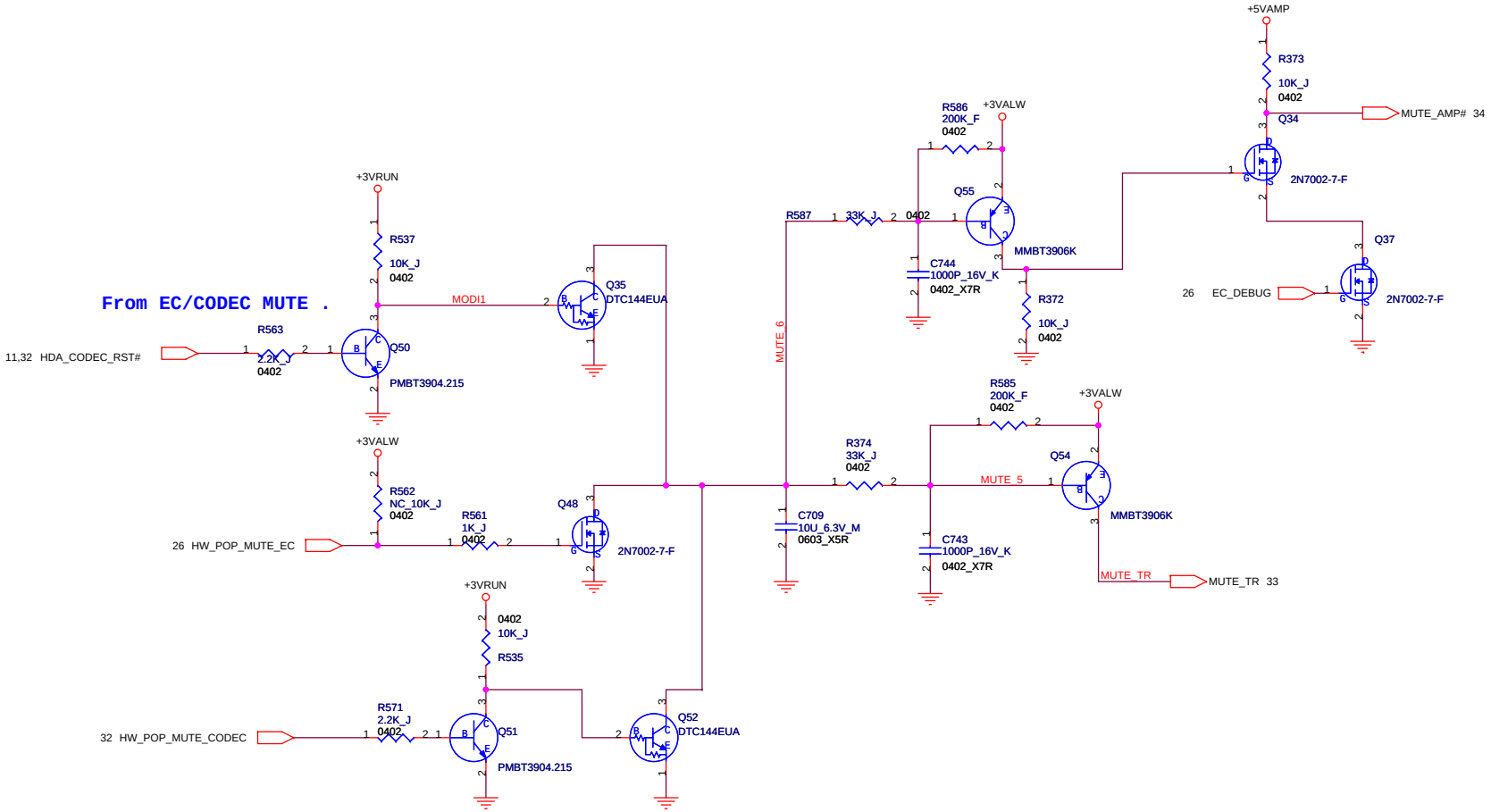



**BFT Test Pad**



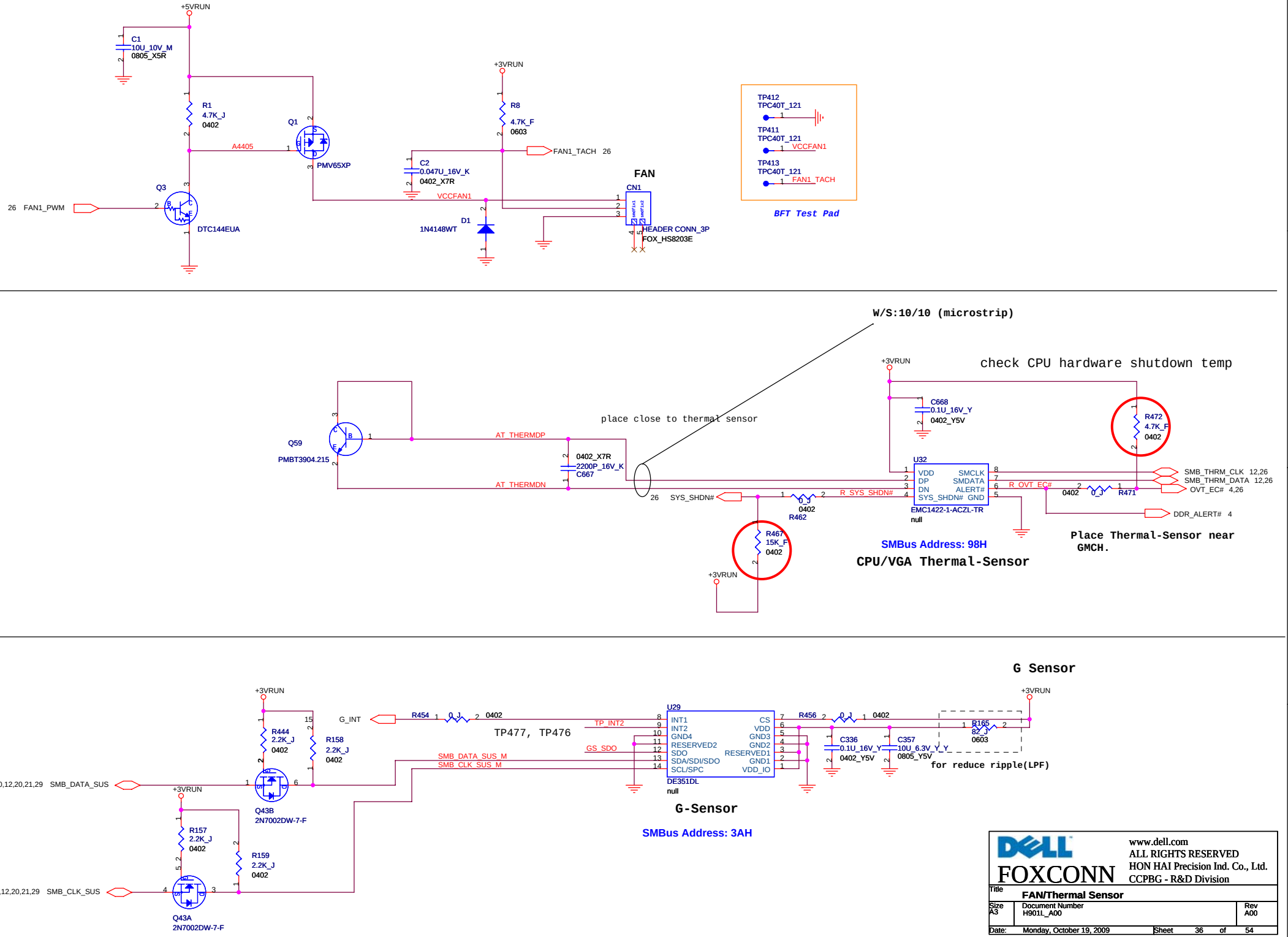



| | | |
|---|---|---|
| Title | Audio (SPKR) | |
| Size A3 | Document Number H9011L_A00 | Rev A00 |
| Date: Monday, October 19, 2009 | Sheet 34 of 54 | |



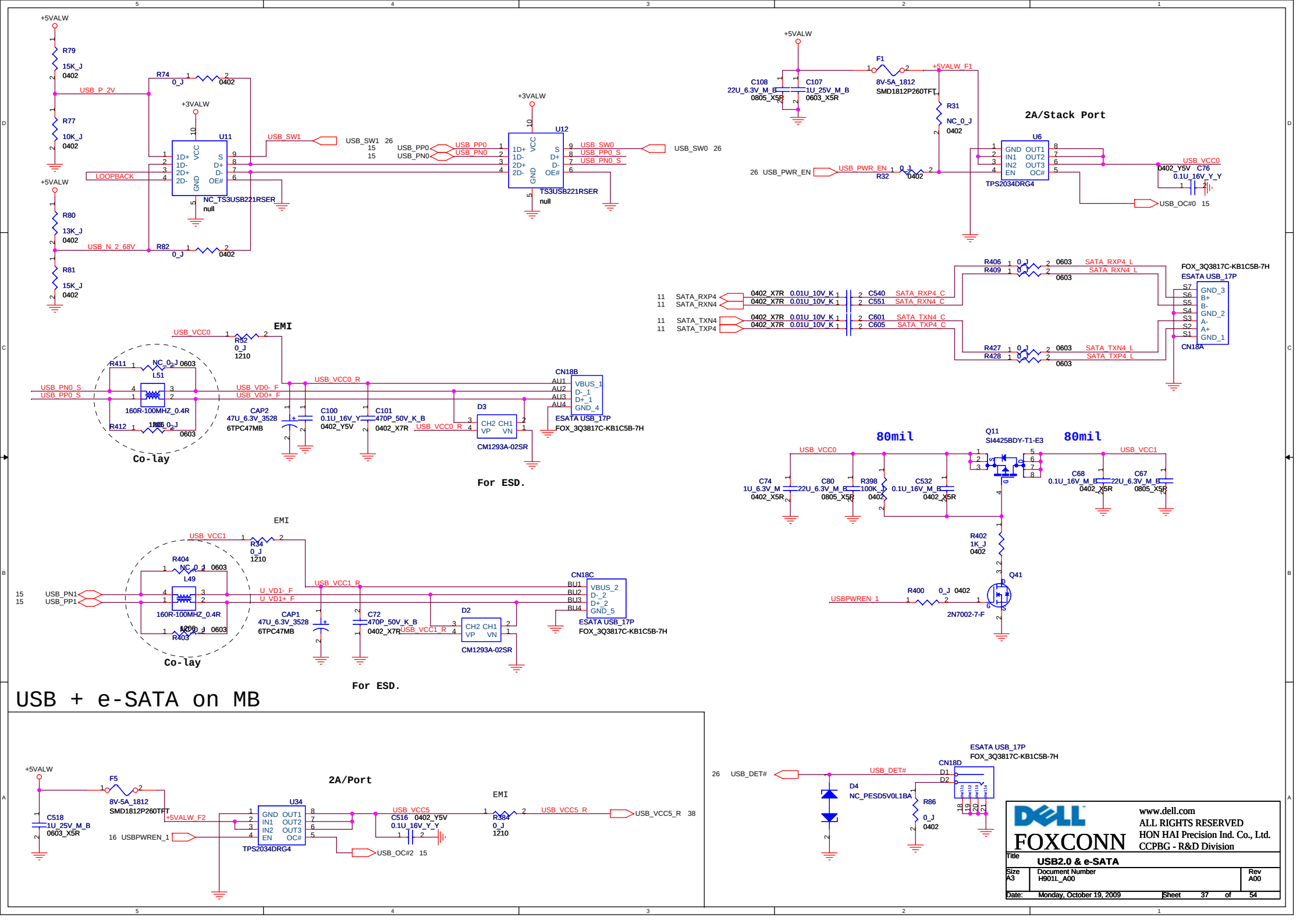



| | | |
|---|---|---|
| Title | Audio (MUTE) | |
| Size A3 | Document Number H9011_A00 | Rev A00 |
| Date: Monday, October 19, 2009 | Sheet 35 of 54 | |






| | | | |
|---|---|---|---|
| Title | FAN/Thermal Sensor | | |
| Size A3 | Document Number H9011L_A00 | | Rev A00 |
| Date: Monday, October 19, 2009 | Sheet 36 of 54 | | |


+5VALW
R79
15K_J
0402
R77
10K_J
0402
R80
13K_J
0402
R81
15K_J
0402
USB_P_2V
USB_N_2_68V
R74
0_J
0402
R82
0_J
0402
+3VALW
U11
1D+
1D-
2D+
2D-
VCC
GND
S
D+
D-
OE#
LOOPBACK
USB_SW1
NC_TS3USB221RSER
null
USB_SW1 26
15
15
USB_PP0
USB_PN0
U12
USB_SW0
USB_PP0_S
USB_PN0_S
USB_SW0 26
TS3USB221RSER
null
EMI
USB_VCC0
R52
0_J
1210
R411
NC_0_J
0603
L51
160R-100MHZ_0.4R
R412
0603
Co-lay
USB_PN0_S
USB_PP0_S
USB_VD0- F
USB_VD0+ F
USB_VCC0_R
CAP2
47U_6.3V_3528
6TPC47MB
C100
0.1U_16V_Y
0402_Y5V
C101
470P_50V_K_B
0402_X7R
D3
CH2 CH1
VP VN
CM1293A-02SR
CN18B
VBUS_1
D-_1
D+_1
GND_4
ESATA USB_17P
FOX_3Q3817C-KB1C5B-7H
For ESD.
EMI
USB_VCC1
R34
0_J
1210
R404
NC_0_J
0603
L49
160R-100MHZ_0.4R
R403
0603
Co-lay
15 USB_PN1
15 USB_PP1
U_VD1- F
U_VD1+ F
USB_VCC1_R
CAP1
47U_6.3V_3528
6TPC47MB
C72
470P_50V_K_B
0402_X7R
D2
CH2 CH1
VP VN
CM1293A-02SR
CN18C
VBUS_2
D-_2
D+_2
GND_5
ESATA USB_17P
FOX_3Q3817C-KB1C5B-7H
For ESD.
USB + e-SATA on MB
+5VALW
F1
8V-5A_1812
SMD1812P260TFT
+5VALW_F1
C108
22U_6.3V_M_B
0805_X5R
C107
1U_25V_M_B
0603_X5R
R31
NC_0_J
0402
2A/Stack Port
U6
GND
IN1
IN2
EN
OUT1
OUT2
OUT3
OC#
TPS2034DRG4
USB_VCC0
0402_Y5V
C76
0.1U_16V_Y_Y
USB_OC#0 15
26 USB_PWR_EN
USB_PWR_EN_1
R32
0_J
0402
R406
R409
0_J
0603
SATA_RXP4_L
SATA_RXN4_L
11 SATA_RXP4
11 SATA_RXN4
0402_X7R
0.01U_10V_K
C540
SATA_RXP4_C
C551
SATA_RXN4_C
11 SATA_TXN4
11 SATA_TXP4
C601
SATA_TXN4_C
C605
SATA_TXP4_C
R427
R428
SATA_TXN4_L
SATA_TXP4_L
FOX_3Q3817C-KB1C5B-7H
ESATA USB_17P
GND_3
B+
B-
GND_2
A-
A+
GND_1
CN18A
80mil
Q11
SI4425BDY-T1-E3
USB_VCC0
USB_VCC1
C74
1U_6.3V_M
0402_X5R
C80
22U_6.3V_M_B
0805_X5R
R398
100K_J
0402
C532
0.1U_16V_M_B
0402_X5R
C68
0.1U_16V_M_B
0402_X5R
C67
22U_6.3V_M_B
0805_X5R
R402
1K_J
0402
Q41
2N7002-7-F
R400
0_J
0402
USBPWREN_1
+5VALW
F5
8V-5A_1812
SMD1812P260TFT
+5VALW_F2
C518
1U_25V_M_B
0603_X5R
16 USBPWREN_1
2A/Port
U34
TPS2034DRG4
USB_VCC5
C516
0402_Y5V
0.1U_16V_Y_Y
USB_OC#2 15
EMI
R384
0_J
1210
USB_VCC5_R
USB_VCC5_R 38
26 USB_DET#
USB_DET#
D4
NC_PESD5V0L1BA
R86
0_J
0402
ESATA USB_17P
FOX_3Q3817C-KB1C5B-7H
CN18D
D1
D2
FOXCONN
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Title
USB2.0 & e-SATA
Size
A3
Document Number
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Rev
A00
Date:
Monday, October 19, 2009
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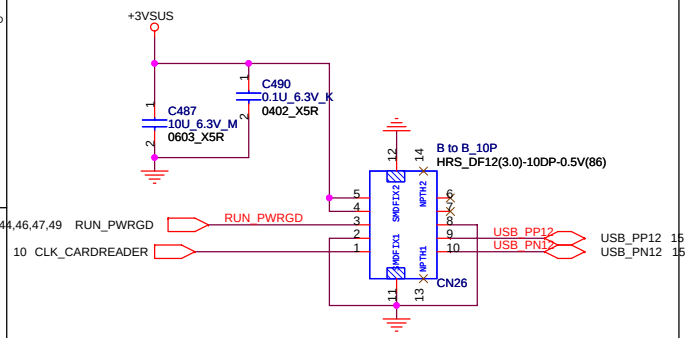
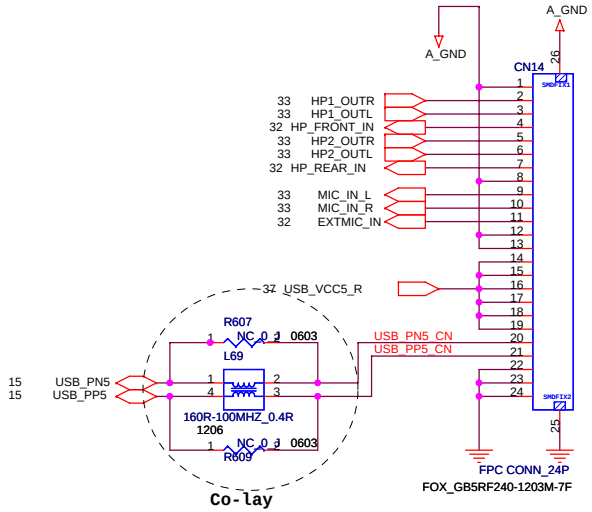
37
of
54

## Cardreader Board

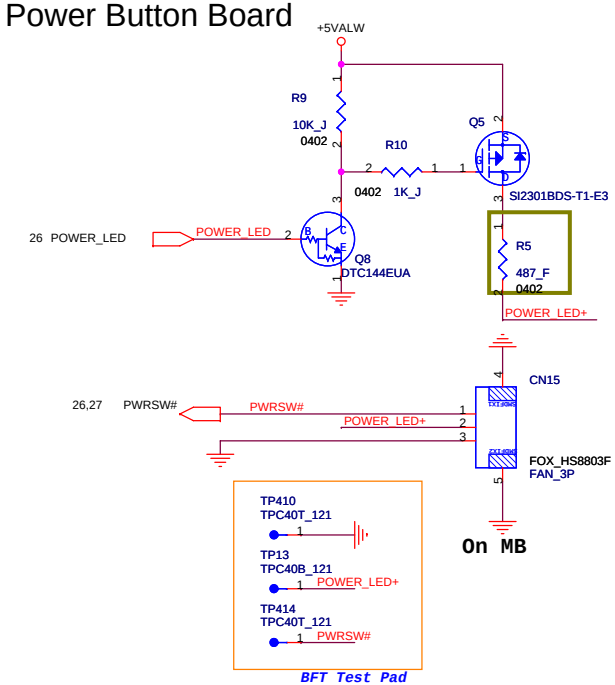



## WWAN Board

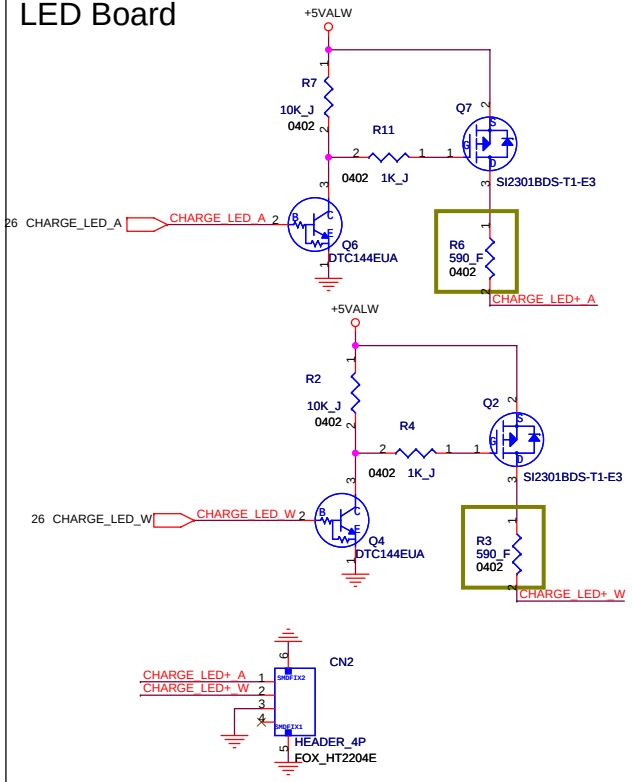
## Audio_USB Board On MB



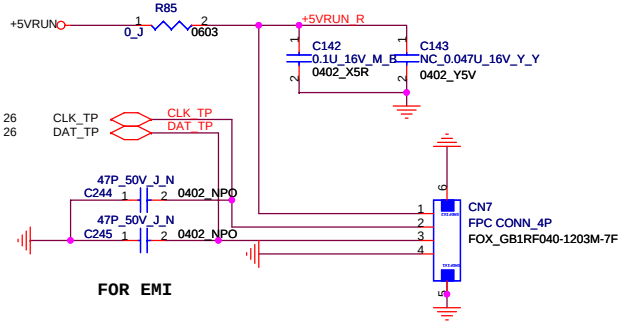

## Power Button Board




## LED Board



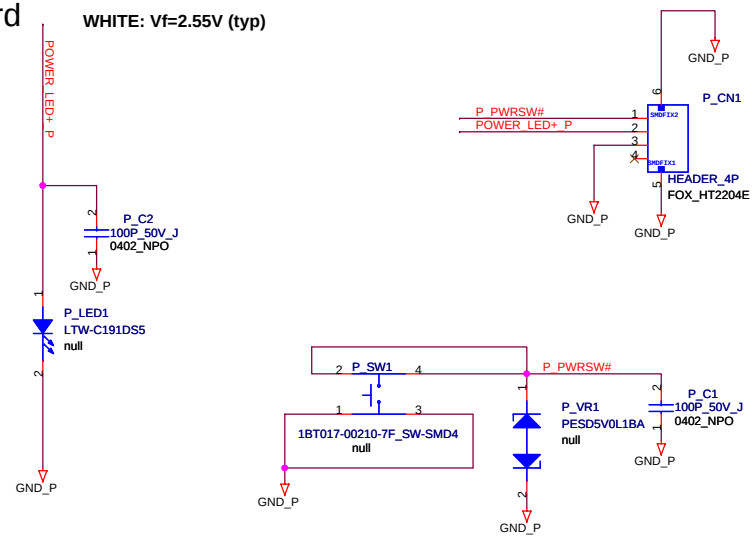

## TP Board





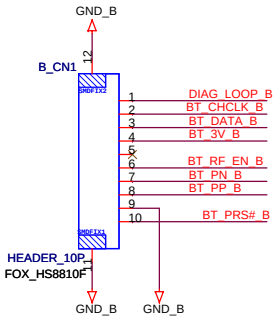

| | | |
|---|---|---|
| Title | DB board connector (MB) | |
| Size A3 | Document Number H901L_A00 | Rev A00 |
| Date: Monday, October 19, 2009 | Sheet 38 of 54 | |

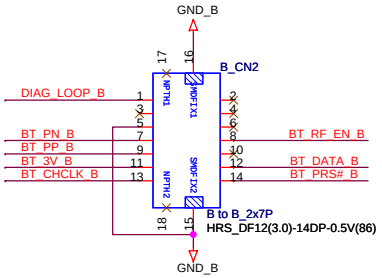
## Power Button Board



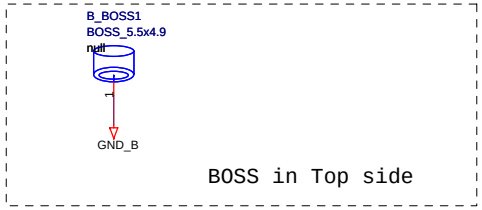

**POWER BUTTON**

## Bluetooth Board

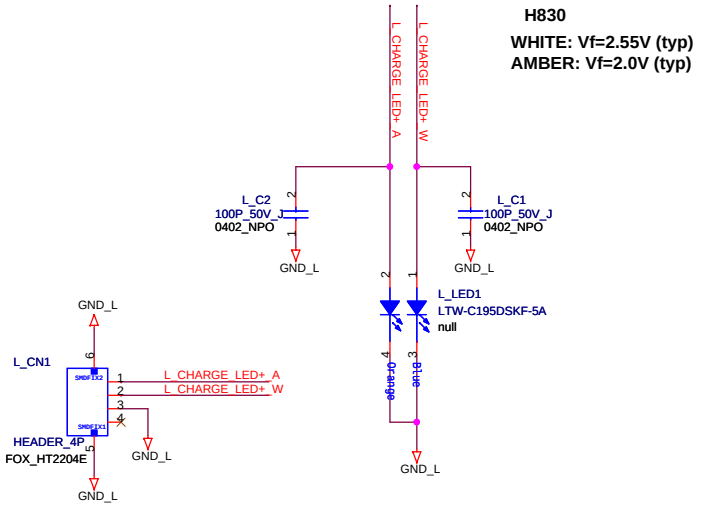



**Bluetooth CONN.**




## LED Board

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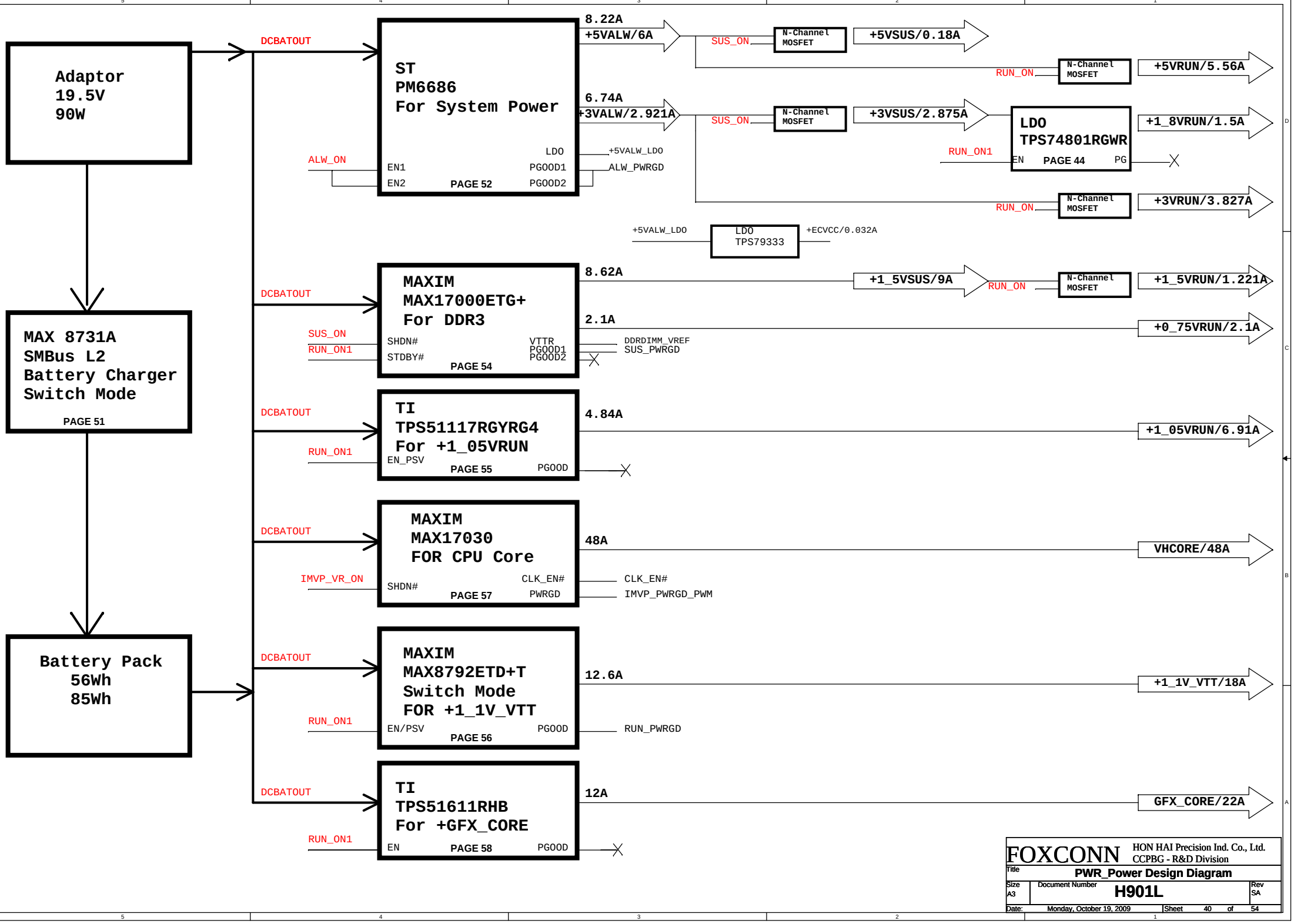
| | | |
|---|---|---|
| Title: PWR_BTN&LED&BT DB | | |
| Size: A3 | Document Number: H901L_A00 | Rev: A00 |
| Date: Monday, October 19, 2009 | Sheet 39 of 54 | |

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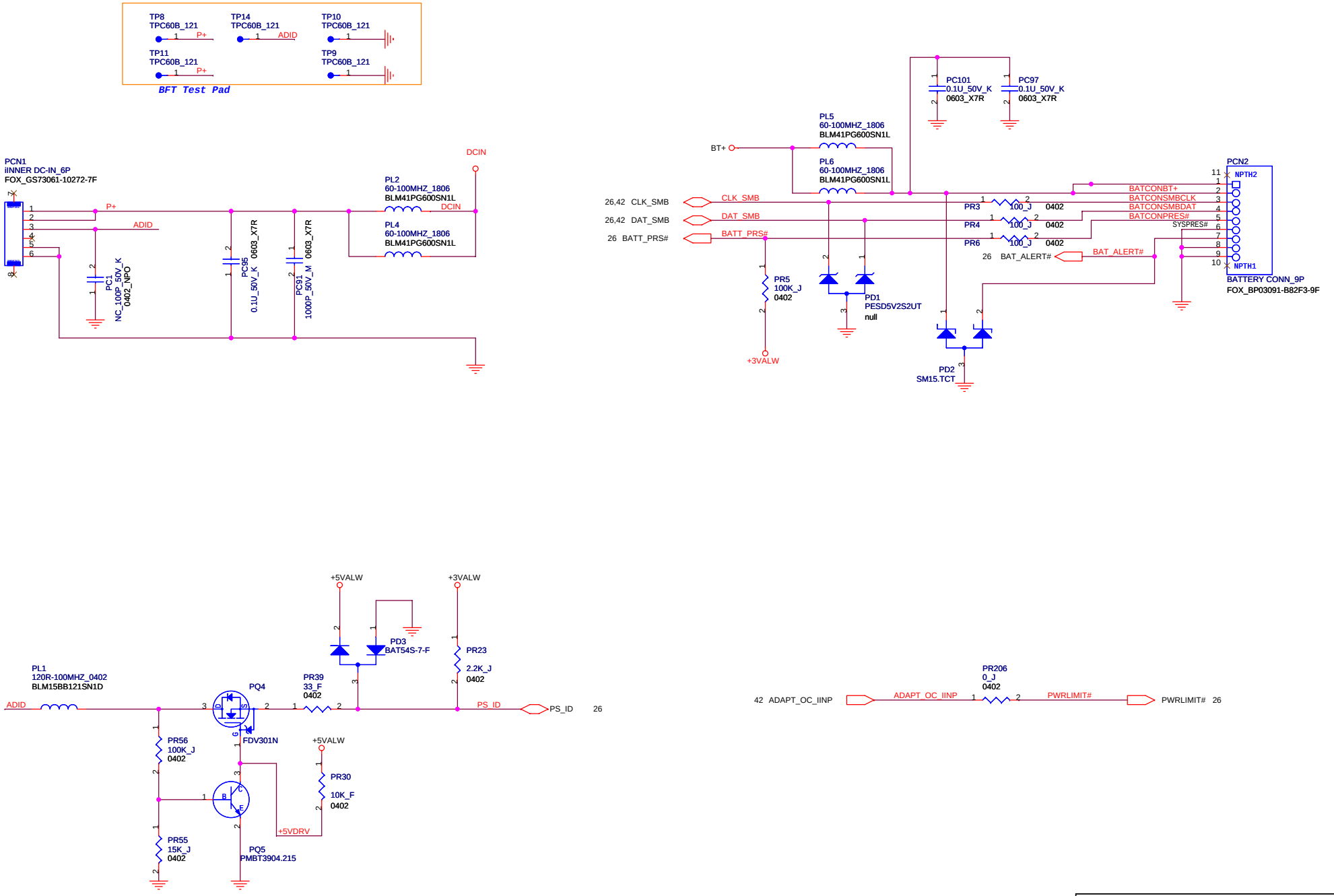
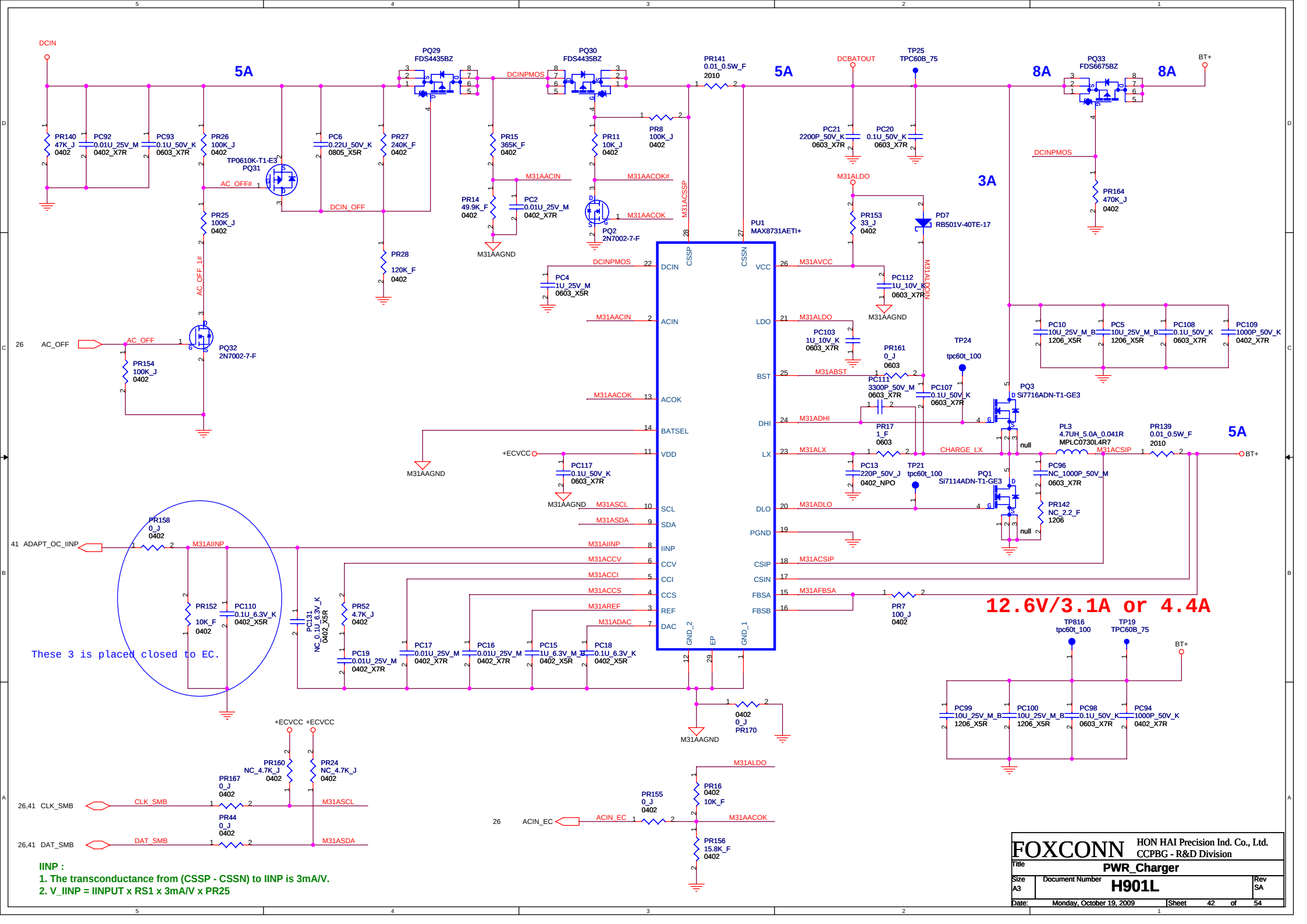
CCPBG - R&D Division

| | | |
|---|---|---|
| Title | PWR_Power Design Diagram | |
| Size A3 | Document Number H901L | Rev SA |
| Date: Monday, October 19, 2009 | Sheet 40 of 54 | |




| | | |
|---|---|---|
| FOXCONN | HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division | |
| Title | PWR_DCIN & Battery | |
| Size A3 | Document Number H901L | Rev SA |
| Date: Monday, October 19, 2009 | Sheet 41 of 54 | |


DCIN
5A
PQ29 FDS4435BZ
PQ30 FDS4435BZ
DCINPMOS
PR141 0.01_0.5W_F 2010
DCBATOUT
TP25 TPC60B_75
8A
PQ33 FDS6675BZ
BT+
PR140 47K_J 0402
PC92 0.01U_25V_M 0402_X7R
PC93 0.1U_50V_K 0603_X7R
PR26 100K_J 0402
TP0610K-T1-E3 PQ31
AC_OFF#
PC6 0.22U_50V_K 0805_X5R
PR27 240K_F 0402
DCIN_OFF
PR28 120K_F 0402
PR15 365K_F 0402
M31AACIN
PR14 49.9K_F 0402
PC2 0.01U_25V_M 0402_X7R
M31AAGND
PR8 100K_J 0402
PR11 10K_J 0402
M31AACOK#
M31AACOK
PQ2 2N7002-7-F
M31ACSSP
PC21 2200P_50V_K 0603_X7R
PC20 0.1U_50V_K 0603_X7R
DCINPMOS
PR164 470K_J 0402
M31ALDO
3A
PR153 33_J 0402
PD7 RB501V-40TE-17
M31ALDOIN
PR25 100K_J 0402
AC_OFF_1#
PU1 MAX8731AETI+
DCIN
CSSP
CSSN
VCC
LDO
BST
DHI
LX
DLO
PGND
CSIP
CSIN
FBSA
FBSB
ACIN
ACOK
BATSEL
VDD
SCL
SDA
IINP
CCV
CCI
CCS
REF
DAC
GND_2
EP
GND_1
PC4 1U_25V_M 0603_X5R
PC112 1U_10V_K 0603_X7R
M31AAGND
PC10 10U_25V_M_B 1206_X5R
PC5 10U_25V_M_B 1206_X5R
PC108 0.1U_50V_K 0603_X7R
PC109 1000P_50V_K 0402_X7R
26 AC_OFF
AC_OFF
PR154 100K_J 0402
PQ32 2N7002-7-F
PC103 1U_10V_K 0603_X7R
PR161 0_J 0603
TP24 tpc60t_100
PC111 3300P_50V_M 0603_X7R
PC107 0.1U_50V_K 0603_X7R
PQ3 SI7716ADN-T1-GE3
PR17 1_F 0603
PL3 4.7UH_5.0A_0.041R MPLC0730L4R7
PR139 0.01_0.5W_F 2010
5A
CHARGE_LX
M31ACSIP
PC13 220P_50V_J 0402_NPO
TP21 tpc60t_100
PQ1 SI7114ADN-T1-GE3
PC96 NC_1000P_50V_M 0603_X7R
PR142 NC_2.2_F 1206
null
+ECVCC
PC117 0.1U_50V_K 0603_X7R
M31AAGND
M31ASCL
M31ASDA
PR158 0_J 0402
41 ADAPT_OC_IINP
M31AIINP
PR152 10K_F 0402
PC110 0.1U_6.3V_K 0402_X5R
PC131 NC_0.1U_6.3V_K 0402_X5R
PR52 4.7K_J 0402
PC19 0.01U_25V_M 0402_X7R
PC17 0.01U_25V_M 0402_X7R
PC16 0.01U_25V_M 0402_X7R
PC15 1U_6.3V_M_B 0402_X5R
PC18 0.1U_6.3V_K 0402_X5R
These 3 is placed closed to EC.
PR7 100_J 0402
12.6V/3.1A or 4.4A
TP816 tpc60t_100
TP19 TPC60B_75
PC99 10U_25V_M_B 1206_X5R
PC100 10U_25V_M_B 1206_X5R
PC98 0.1U_50V_K 0603_X7R
PC94 1000P_50V_K 0402_X7R
0402 0_J PR170
M31AAGND
+ECVCC +ECVCC
PR160 NC_4.7K_J 0402
PR24 NC_4.7K_J 0402
PR167 0_J 0402
26,41 CLK_SMB
CLK_SMB
M31ASCL
PR44 0_J 0402
26,41 DAT_SMB
DAT_SMB
M31ASDA
M31ALDO
PR155 0_J 0402
26 ACIN_EC
ACIN_EC
M31AACOK
PR16 0402 10K_F
PR156 15.8K_F 0402
IINP :
1. The transconductance from (CSSP - CSSN) to IINP is 3mA/V.
2. V_IINP = IINPUT x RS1 x 3mA/V x PR25
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HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
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PWR_Charger
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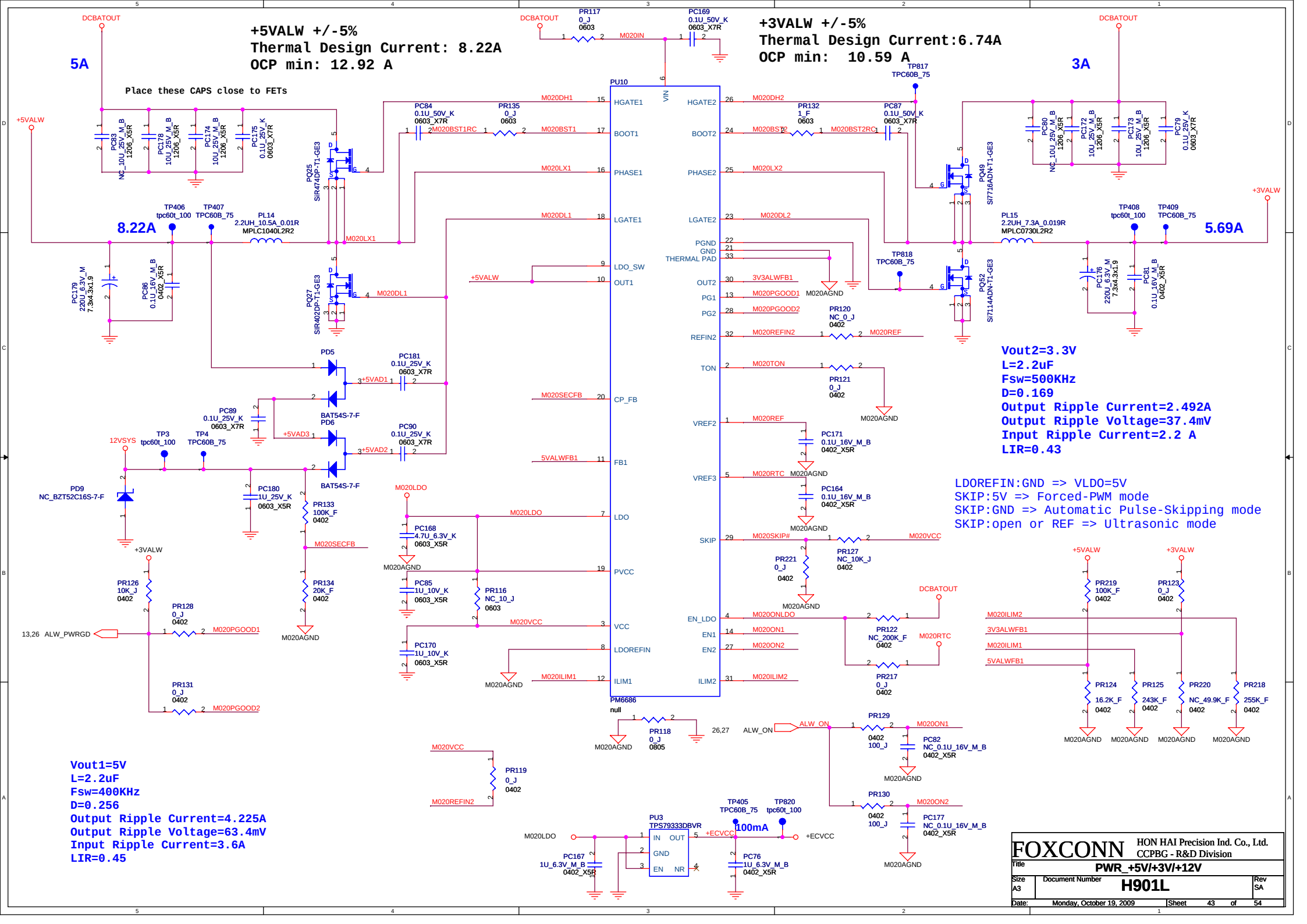
+5VALW +/-5%
Thermal Design Current: 8.22A
OCP min: 12.92 A
5A
Place these CAPS close to FETs
8.22A
+3VALW +/-5%
Thermal Design Current:6.74A
OCP min: 10.59 A
3A
5.69A
Vout2=3.3V
L=2.2uF
Fsw=500KHz
D=0.169
Output Ripple Current=2.492A
Output Ripple Voltage=37.4mV
Input Ripple Current=2.2 A
LIR=0.43
LDOREFIN:GND => VLDO=5V
SKIP:5V => Forced-PWM mode
SKIP:GND => Automatic Pulse-Skipping mode
SKIP:open or REF => Ultrasonic mode
Vout1=5V
L=2.2uF
Fsw=400KHz
D=0.256
Output Ripple Current=4.225A
Output Ripple Voltage=63.4mV
Input Ripple Current=3.6A
LIR=0.45
PU10
PM6686
PU3
TPS79333DBVR
100mA
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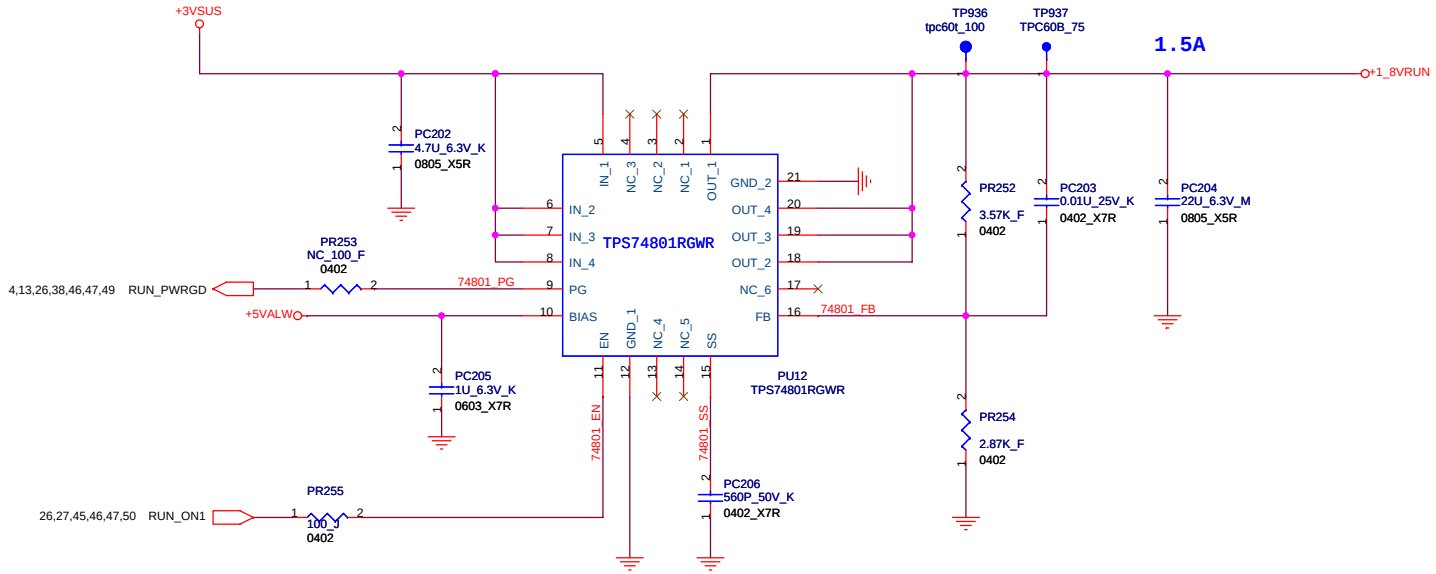
**+1_8VRUN +/-5%**
**Thermal Design Current: 1.05A**
**Maximum Current:1.5A**
**OCP : 2~5 A**




| | | |
|---|---|---|
| FOXCONN | HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division | |
| Title | PWR_+1_8V | |
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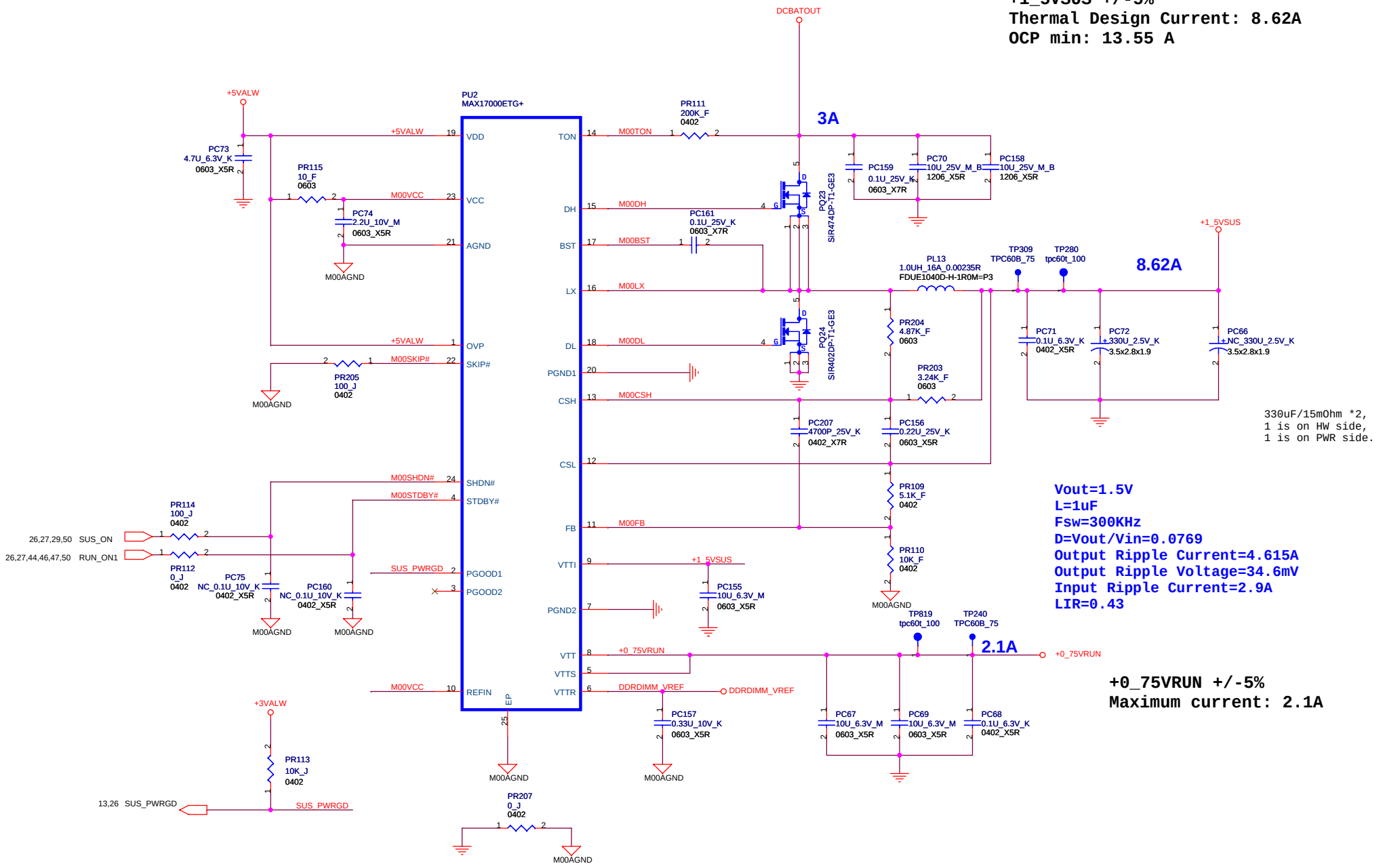


| | | |
|---|---|---|
| FOXCONN | HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division | |
| Title | PWR_+1_5V/+0_75V | |
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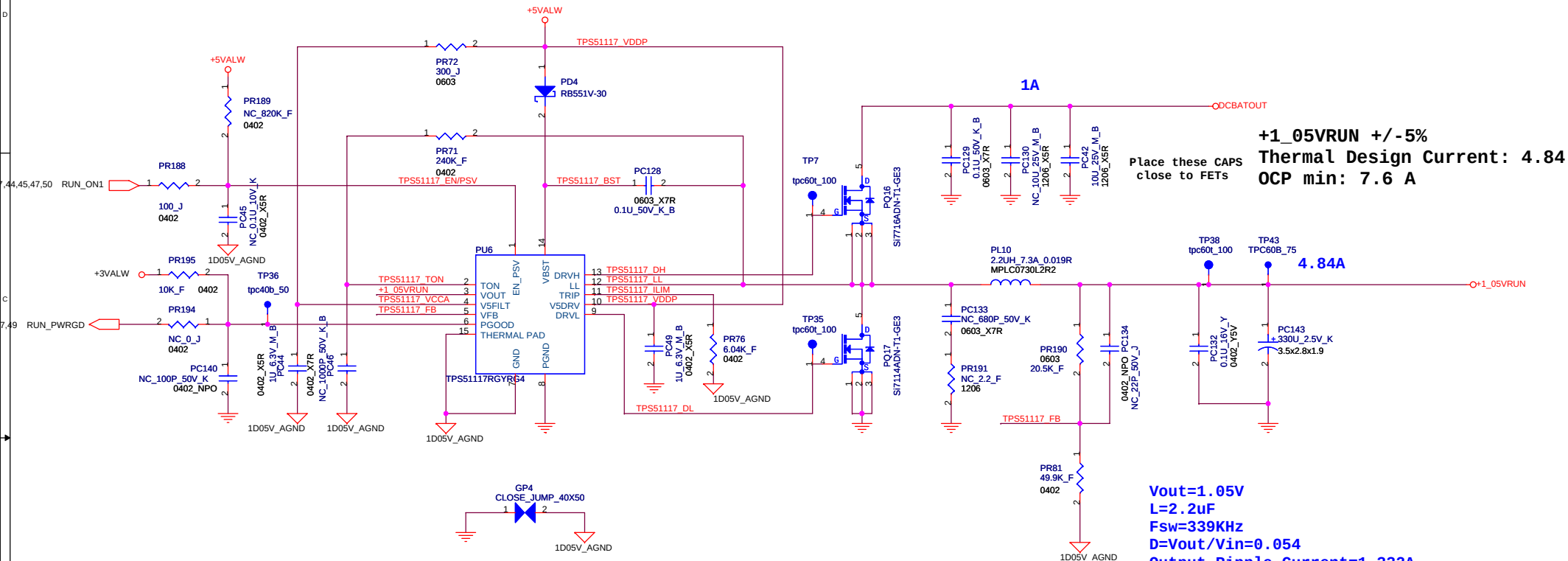
| Date: Monday, October 19, 2009 | Sheet 45 of 54 | |




| | | |
|---|---|---|
| FOXCONN | HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division | |
| Title | PWR_+1_05V | |
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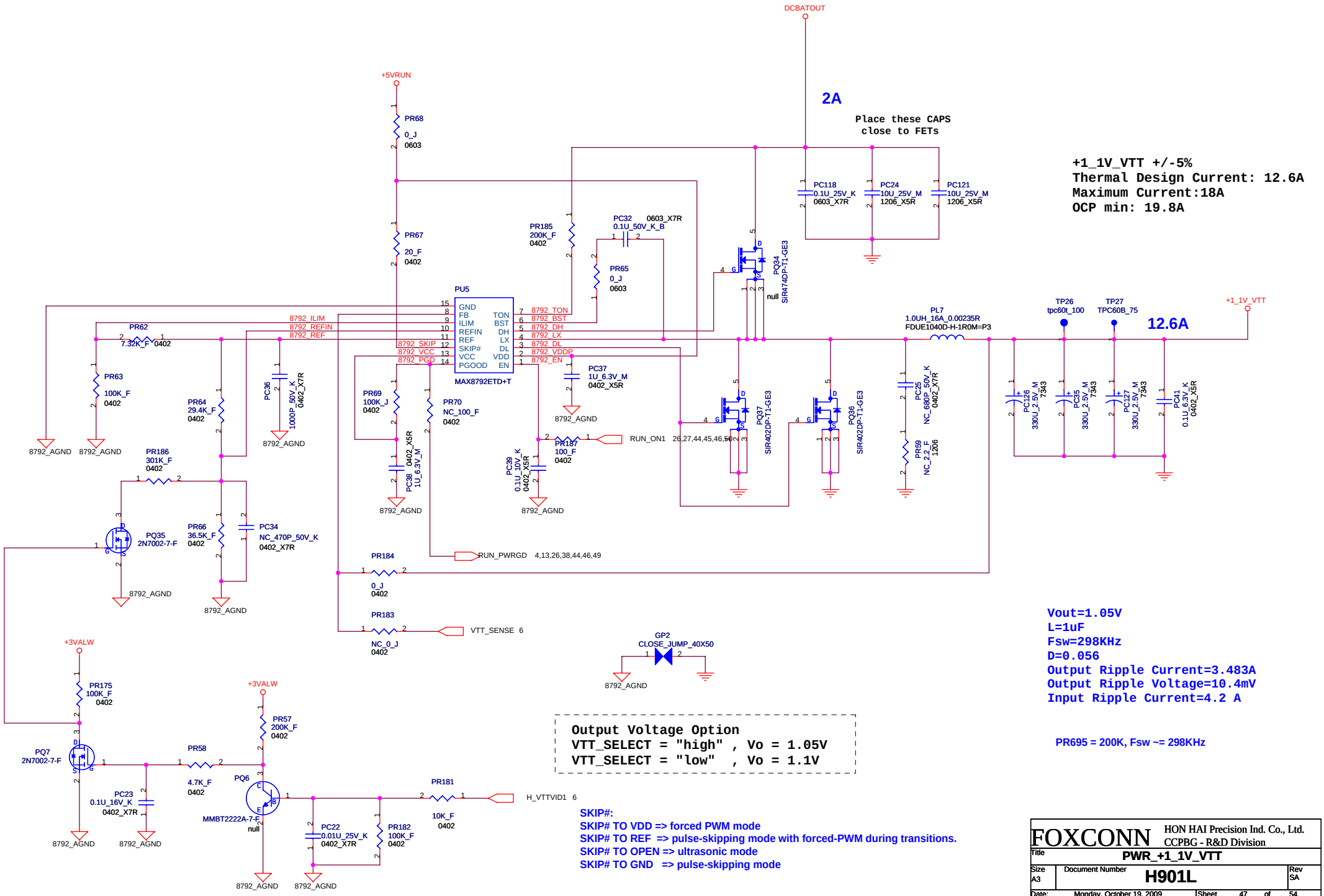
DCBATOUT
2A
Place these CAPS close to FETs
+1_1V_VTT +/-5%
Thermal Design Current: 12.6A
Maximum Current:18A
OCP min: 19.8A
+5VRUN
PR68 0_J 0603
PR67 20_F 0402
PR185 200K_F 0402
PC32 0603_X7R 0.1U_50V_K_B
PR65 0_J 0603
PC118 0.1U_25V_K 0603_X7R
PC24 10U_25V_M 1206_X5R
PC121 10U_25V_M 1206_X5R
PQ34 SIR474DP-T1-GE3
null
PU5
GND FB ILIM REFIN REF SKIP# VCC PGOOD
TON BST DH LX DL VDD EN
8792_ILIM 8792_REFIN 8792_REF 8792_SKIP 8792_VCC 8792_PGD
8792_TON 8792_BST 8792_DH 8792_LX 8792_DL 8792_VDDP 8792_EN
MAX8792ETD+T
PR62 7.32K_F 0402
PR63 100K_F 0402
PR64 29.4K_F 0402
PC36 1000P_50V_K 0402_X7R
PR69 100K_J 0402
PR70 NC_100_F 0402
PC38 1U_6.3V_M 0402_X5R
PC39 0.1U_10V_K 0402_X5R
PC37 1U_6.3V_M 0402_X5R
PR187 100_F 0402
RUN_ON1 26,27,44,45,46,50
PQ37 SIR402DP-T1-GE3
PQ36 SIR402DP-T1-GE3
PL7 1.0UH_16A_0.00235R FDUE1040D-H-1R0M=P3
PC25 NC_680P_50V_K 0402_X7R
PR59 NC_2.2_F 1206
TP26 tpc60t_100
TP27 TPC60B_75
12.6A
+1_1V_VTT
PC126 330U_2.5V_M 7343
PC35 330U_2.5V_M 7343
PC127 330U_2.5V_M 7343
PC41 0.1U_6.3V_K 0402_X5R
PR186 301K_F 0402
PQ35 2N7002-7-F
PR66 36.5K_F 0402
PC34 NC_470P_50V_K 0402_X7R
PR184 0_J 0402
RUN_PWRGD 4,13,26,38,44,46,49
PR183 NC_0_J 0402
VTT_SENSE 6
GP2 CLOSE_JUMP_40X50
8792_AGND
+3VALW
PR175 100K_F 0402
PQ7 2N7002-7-F
PR58 4.7K_F 0402
PC23 0.1U_16V_K 0402_X7R
PR57 200K_F 0402
PQ6 MMBT2222A-7-F
null
PR181 10K_F 0402
H_VTTVID1 6
PC22 0.01U_25V_K 0402_X7R
PR182 100K_F 0402
Output Voltage Option
VTT_SELECT = "high" , Vo = 1.05V
VTT_SELECT = "low" , Vo = 1.1V
Vout=1.05V
L=1uF
Fsw=298KHz
D=0.056
Output Ripple Current=3.483A
Output Ripple Voltage=10.4mV
Input Ripple Current=4.2 A
PR695 = 200K, Fsw ~= 298KHz
SKIP#:
SKIP# TO VDD => forced PWM mode
SKIP# TO REF => pulse-skipping mode with forced-PWM during transitions.
SKIP# TO OPEN => ultrasonic mode
SKIP# TO GND => pulse-skipping mode
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Arrandale SV CPU
V(HFM):0.95V
V(LFM):0.875V
LL:-1.9mOhm
Icc_max:48A
Icc_TDC:32 A
I(DYNAMIC):TBD

VID[5:3] for CSC, CRB default '100' = 50A (Iccmax)
VID[2:0] for MSID (To differentiate XE CPU from SV CPU)
DPRSLPVR='1' for IMVP6.5
Others are RSVD
Both PH and PD resistors are required to reserve for all 9 signals

OCP setting:60A(30A per phase).
PR149=13.7K Ohm

VID[6:0]=0100111

Place these CAPS close to FETs
2.5A for EMI
Place these CAPS close to VCORE input
for EMI
52A
Place these CAPS close to FETs 2.5A

| | |
|---|---|
| FOXCONN | HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division |
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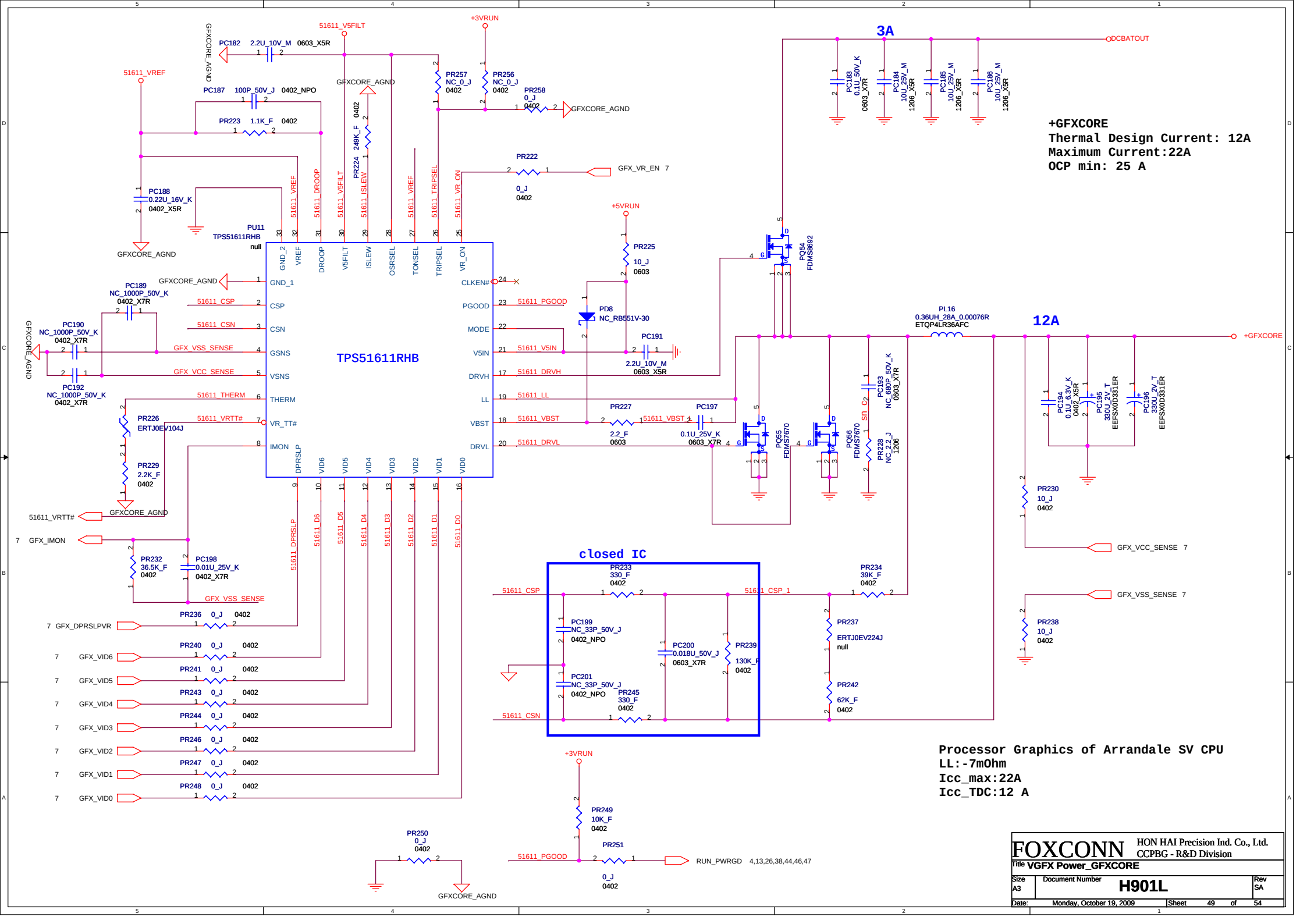
+GFXCORE
Thermal Design Current: 12A
Maximum Current:22A
OCP min: 25 A
3A
12A
TPS51611RHB
PU11
TPS51611RHB
null
closed IC
Processor Graphics of Arrandale SV CPU
LL:-7mOhm
Icc_max:22A
Icc_TDC:12 A
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HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title VGFX Power_GFXCORE
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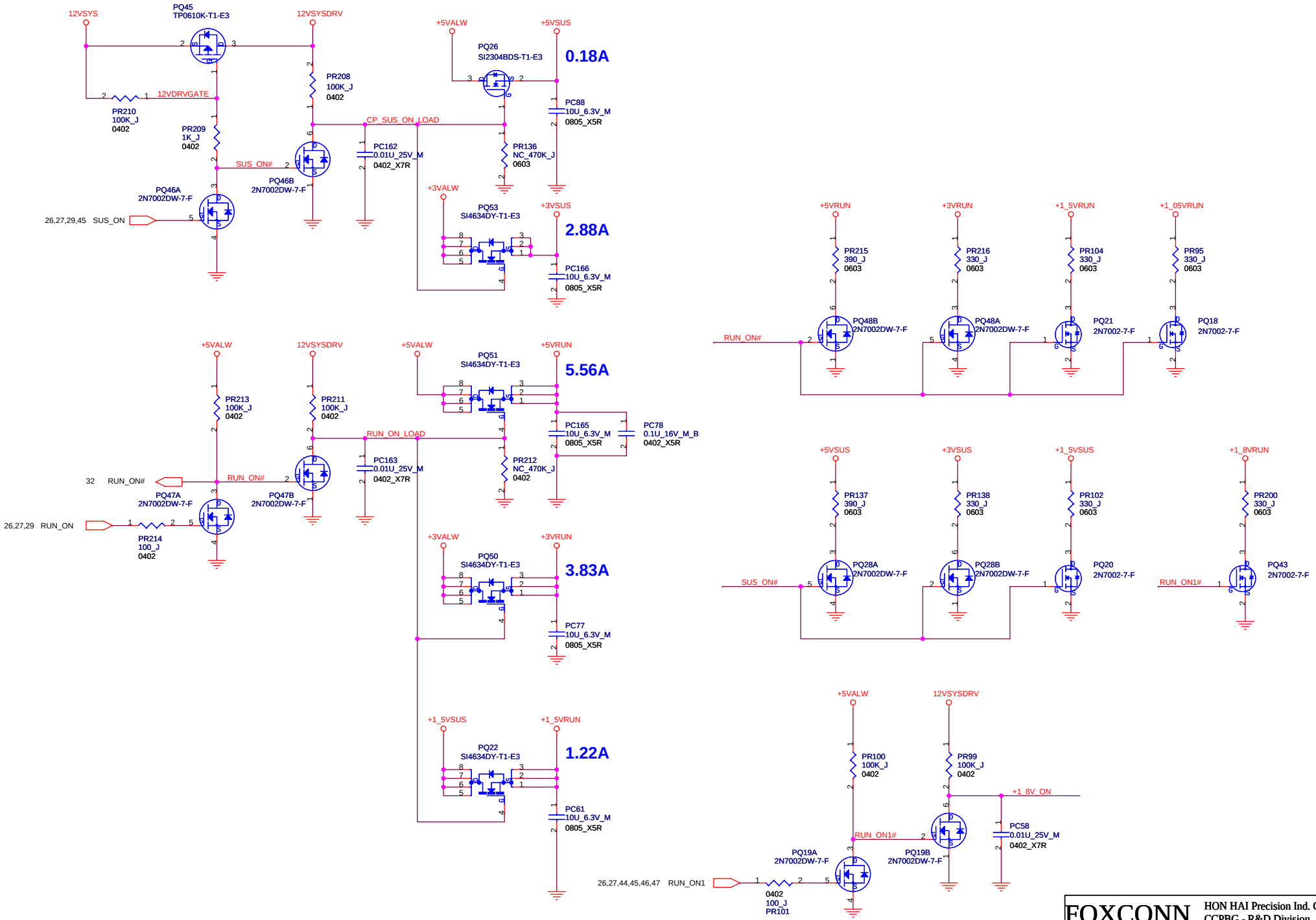
12VSYS
PQ45
TP0610K-T1-E3
12VSYSDRV
12VDRVGATE
PR210
100K_J
0402
PR208
100K_J
0402
PR209
1K_J
0402
SUS_ON#
PQ46A
2N7002DW-7-F
PQ46B
2N7002DW-7-F
26,27,29,45 SUS_ON
+5VALW
PQ26
SI2304BDS-T1-E3
+5VSUS
0.18A
PC88
10U_6.3V_M
0805_X5R
CP_SUS_ON_LOAD
PC162
0.01U_25V_M
0402_X7R
PR136
NC_470K_J
0603
+3VALW
PQ53
SI4634DY-T1-E3
+3VSUS
2.88A
PC166
10U_6.3V_M
0805_X5R
+5VALW
12VSYSDRV
PR213
100K_J
0402
PR211
100K_J
0402
RUN_ON_LOAD
PC163
0.01U_25V_M
0402_X7R
32 RUN_ON#
RUN_ON#
PQ47A
2N7002DW-7-F
PQ47B
2N7002DW-7-F
26,27,29 RUN_ON
PR214
100_J
0402
+5VALW
PQ51
SI4634DY-T1-E3
+5VRUN
5.56A
PC165
10U_6.3V_M
0805_X5R
PC78
0.1U_16V_M_B
0402_X5R
PR212
NC_470K_J
0402
+3VALW
PQ50
SI4634DY-T1-E3
+3VRUN
3.83A
PC77
10U_6.3V_M
0805_X5R
+1_5VSUS
PQ22
SI4634DY-T1-E3
+1_5VRUN
1.22A
PC61
10U_6.3V_M
0805_X5R
+5VRUN
+3VRUN
+1_5VRUN
+1_05VRUN
PR215
390_J
0603
PR216
330_J
0603
PR104
330_J
0603
PR95
330_J
0603
RUN_ON#
PQ48B
2N7002DW-7-F
PQ48A
2N7002DW-7-F
PQ21
2N7002-7-F
PQ18
2N7002-7-F
+5VSUS
+3VSUS
+1_5VSUS
+1_8VRUN
PR137
390_J
0603
PR138
330_J
0603
PR102
330_J
0603
PR200
330_J
0603
SUS_ON#
PQ28A
2N7002DW-7-F
PQ28B
2N7002DW-7-F
PQ20
2N7002-7-F
RUN_ON1#
PQ43
2N7002-7-F
+5VALW
12VSYSDRV
PR100
100K_J
0402
PR99
100K_J
0402
+1_8V_ON
RUN_ON1#
PQ19A
2N7002DW-7-F
PQ19B
2N7002DW-7-F
PC58
0.01U_25V_M
0402_X7R
26,27,44,45,46,47 RUN_ON1
0402
100_J
PR101
FOXCONN
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CCPBG - R&D Division
Title
PWR_Others power plane
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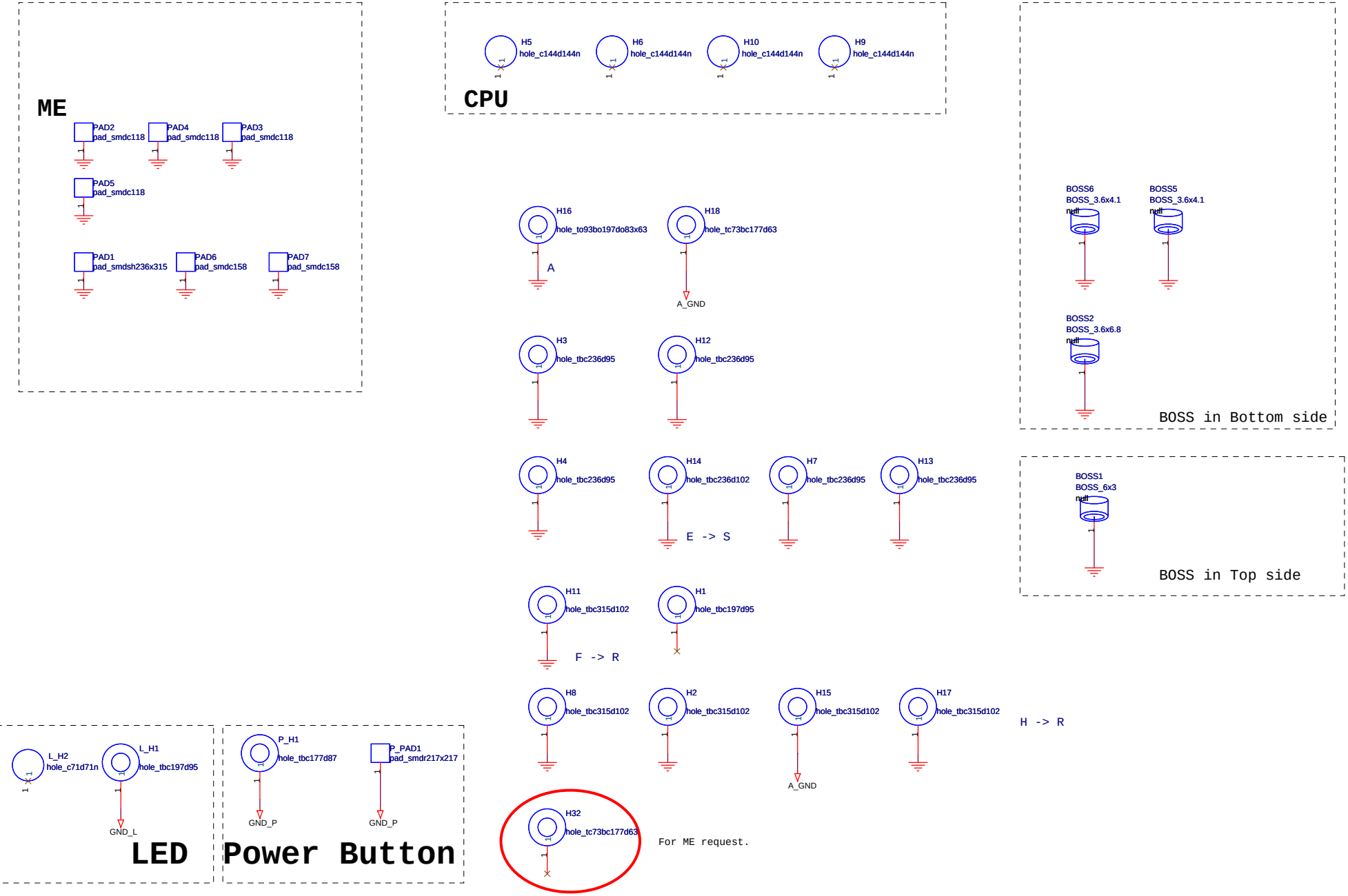


DELL
FOXCONN



| | | |
|---|---|---|
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# H901L EVT

**(2009/06/08)**

P.39 Add Q62, Q63, R619, and R639 10K ohm and del D16 & D17 for leakage issue.

**(2009/06/23)**

P. 4 NC R712 0 ohm for DDR_alert# noise.

**(2009/06/25)**

P.11 Change RTC battery P/N from 1M-BCR2032-LB00 to 1M-BCR2032-LB01.

**(2009/07/01)**

P.51 Add H32 for ME request.

**(2009/07/14)**

P.12 Add R645 & R646 2.2K ohm for SMBUS PH.
P.31 Change C35 & C38 from 18pF to 15pF for Crystal vendor recommend.

**(2009/07/15)**

P.22 Add C655, C656, C657 10pF, and L70, L71, L72 47R,
change L61, L62, L63 from 33R to 47R for CRT.

**(2009/07/16)**

P.13 Add R293 0 ohm NC for SLP_M#.
P.30 Change C33 and C44 from NPO 10% to 5% for PUR recommend.
P.39 Change P_C1, P_C2, L_C1, L_C2 from 10pF NPO 10% to 5% for PUR recommend.
P.32 Change C499 and C505 from 12pF NPO 10% to 5% for PUR recommend.
P.11 Change C735 from 12pF NPO 10% to 5% for PUR recommend.
P.30 Change C78 and C79 from 15pF NPO 10% to 5% for PUR recommend.
P.11 Change C736 from 15pF NPO 10% to 5% for PUR recommend.
P.38 Change C244 and C245 from 47pF NPO 10% to 5% for PUR recommend.

**(2009/07/17)**

P.13 Add R763 10K ohm PH for HDMI.
P.31 Add C512 0.1uF for Hipot test.

# H901L DVT

**(2009/07/23)**

P.36 Change R467 from 33K to 15K ohm and R472 from 15K to 4.7K ohm
for Thermal recommend.

**(2009/07/28)**

P.24 Change HDMI conncector from 2N-0019003-FKG0 to 2N-0019002-MKG0

**(2009/08/20)**

P.28 Delete R27
P.31 Change L1 to LANKOM.
P.18 Delete R257

# H901L PVT

**(2009/09/3)**

P. 20 & 21 Change CN27 & CN28 to tray for L6 recommend.
P. 25 Change CN25 & CN8 to tray for L6 recommend.
P. 29 Change CN73 Part number for CIS recommend.
P. 20 Add R27 & R55 1K ohm for Intel M1 DDR solution.
P. 21 Add R56 & R57 1K ohm for Intel M1 DDR solution.

# H901L X-Build

**(2009/09/16)**

P.12 Change C701 & C702 from 18pF to 12pF for Crystal vendor recommend.
P.22 Add R474 0 ohm for EMI solution.

# H901L X-Build

**(2009/09/18)**

P.31 Add R612 1K ohm .
P.31 Delete C26
P.31 Delete U2
P.31 Delete R14
P.31 Delete R186

**(2009/10/14)**

P.29 Add L38 , L42 & L69
P.29 Delete R277, R281, R380, R381, R607, R609 for EMI



| Title | History (1) | |
|---|---|---|
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# H900 Power Change History

| Number | Date | Page | Title | Issue | Description | Version |
|---|---|---|---|---|---|---|
| 1 | 2009/07/02 | P.48 | V_CORE | Chage exposed GND and VDD capacitor of VCORE to PGND. | Change PC14.2 from AGND to PGND.<br>Change PU4.41 from AGND to PGND.<br>Change PR21.2 from PGND to AGND. | X01 |
| 2 | 2009/07/02 | P.48 | V_CORE | Add feedback capacitor to improve GND noise for system with battery only can't power ON issue. | Add PC7: 1000pF 16V X7R(1C-2B20102-K001) .<br>Add PC8: 1000pF 16V X7R(1C-2B20102-K001) .<br>Add PC11: 1000pF 16V X7R(1C-2B20102-K001) .<br>Add PC12: 1000pF 16V X7R(1C-2B20102-K001) . | X01 |
| 3 | 2009/07/02 | P.48 | V_CORE | Change boost resistor to reduce ring of Mosfet. | Change PR178 from 0 Ohm 0603 5%(1R-0000000-J300) to 2.2 Ohm 0603 1%(1R-000022X-F300)<br>Change PR177 from 0 Ohm 0603 5%(1R-0000000-J300) to 2.2 Ohm 0603 1%(1R-000022X-F300) | X01 |
| 4 | 2009/07/08 | P.49 | +GFX_CORE | Delete some capacitors from TI suggestion.<br>Fine tune load line and IMON setting. | Del PC190,PC192,PC189,PC199,PC201.<br>Change PR223 from 3K 0402 1%(1R-0000302-F200) to 1.2K 0402 1%(1R-0000122-F200)<br>Change PR232 from 10K 0402 1%(1R-0000103-F200) to 45.3K 0402 1%(1R-0004532-F200)<br>Change PC198 from 3300P 50V 0402 10%(1C-2B20332-K000) to 0.47uF 6.3V 0402 10%(1C-2B20474-K000) | X01 |
| 5 | 2009/07/08 | P.48 | V_CORE | Modify DCR feedback and IMON setting.<br>Change L-S Mosfet to SIR464 to improve efficiency. | Change PR84 and PR85 from 1.69K 0402 1%(1R-0001691-F200) to 3.9K 0402 1%(1R-0003901-F200)<br>Change PR150 from 10K 0402 1%(1R-0000103-F200)to 1.8K 0402 1%(1R-0000182-F200)<br>Change PC208 from 0.1uF 6.3V 0402(1C-2B20104-K101) to 0.022uF 16V 0402 X7R (1C-2B20223-K000)<br>Change PR146 from 12K 0402 1%(1R-0000123-F200) to 15.4K 0402 1%(1R-0001542-F200)<br>Change PQ9,PQ10,PQ12,PQ13 from SIR466(17-S1R466D-PT00) to SIR464(17-S1R464D-PT00) | X01 |
| 6 | 2009/07/10 | P.42 | Charger | Slow down P-Mos turn on to reduce inrush current of AC adapter. | Change PR28 from 100K 0402 5%(1R-0000104-J200) to 120K 0402 1%(1R-0000124-F200) | X01 |
| 7 | 2009/07/16 | P.49 | +GFX_CORE | Add a L-S Mosfet for GFX_CORE | Add PQ56:FDMS7670 (17-FDMS767-0000) | X01 |
| 8 | 2009/07/16 | P.49 | +GFX_CORE | Change GFX_CORE setting from vender's suggestion | Change PR224 from 124K 0402 1%(1R-0001243-F200) to 249K 0402 1%(1R-0002493-F200)<br>Change PU11.33 to PGND.<br>Change PU11.1 to AGND.<br>Add a reserve PR258 between PU11.26 to AGND.<br>Change PR234 from 82.5K 0402 1%(1R-0008252-F200) to 52.3K 0402 1%(1R-0005232-F200)<br>Change PR242 from 63.4K 0402 1%(1R-0006342-F200) to 62K 0402 1%(1R-0000623-F200)<br>Change PR239 from 51K 0402 1%(1R-0000513-F200) to 68K 0402 1%(1R-0000683-F200)<br>Change PR223 from 1.2K 0402 1% (1R-0000122-F200) to 910 0402 1%(1R-0000911-F200) | X01 |
| 9 | 2009/07/20 | P.50 | Other power plane | Add dicharge path for 1_5VRUN and 1_05VRUN | Add PR104:330 Ohm 0603 5%(1R-0000331-J300)<br>Add PR95:330 Ohm 0603 5%(1R-0000331-J300)<br>Add PQ21:2N7002-7-F SOT-23(17-2N70027-F000)<br>Add PQ18:2N7002-7-F SOT-23(17-2N70027-F000) | X01 |

# H900 Power Change History

| Number | Date | Page | Title | Issue | Description | Version |
|---|---|---|---|---|---|---|
| 10 | 2009/08/21 | P.49 | GFX_CORE | Modify GFX_CORE setting(Load line,IMON and OCP). | Change PR234 from 52.3K to 36.5K 0402 1%(1R-0003652-F200)<br>Change PR242 from 62K to 49.9K 0402 1%(1R-0004992-F200)<br>Change PR239 from 68K to 47K 0402 1%(1R-0000473-F200)<br>Change PC200 from 0.015uF to 0.022uF 50V 0603 X7R(1C-2B30223-K001)<br>Change PR223 from 910 Ohm to 768 Ohm 0402 1%(1R-0007683-F200)<br>Delete PR256: 0 Ohm 0402 5%(1R-0000000-J200)<br>Add PR258: 0 Ohm 0402 5%(1R-0000000-J200)<br>Change PR232 from 39K,5%,0402 to 54.9K,1%,0402(1R-0005492-F200)<br>Change PC198 from 3300pF 16V to 0.01uF,25V,10%,0402(1C-2B20103-K000) | X01 |
| 11 | 2009/09/03 | P.48 | VCORE | Adding 2 capacitor for EMI. | Add PC125:0.1uF 25V X5R(1C-2B30104-M000)<br>Add PC138:1000pF 50V X7R(1C-2B20102-K000) | X02 |
| 12 | 2009/09/07 | P.49 | GFX_CORE | Modify GFX_CORE setting from TI's suggestion. | Change PR234 to 39kohm 0402 1%<br>Change PR242 to 62kohm 0402 1%<br>Change PR239 to 130kohm 0402 1%<br>Change PC200 to 18nF 0603 50V 5% X7R<br>Change PR223 to 1.1kohm 0402 1%<br>Change PR232 to 36.5kohm 0402 1%<br>Change PC198 to 10nF 0402 25V 10% X7R | X02 |
| 13 | 2009/10/19 | P.48 | VCORE | Add a capacitor(0.1uF) on DCBATOUT rail for EMI. | Add PC139:0.1uF 25V X5R(1C-2B30104-M000) | |

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Title: History (1)

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