15.6'' Grant 1.0 / 17.3'' Bogart 1.0

Intel Huron River Sandy Bridge 32nm SV PGA988B i3, i5 DC 35W/ i7 QC 45W

15.6'',17.3'' GDDR5 x 4(1GB), Seymour XT M2(29x29) 15W Muxless Hybrid Switchable
15.6'',17.3'' GDDR5 x8(1GB,2GB), Whistler XT M2(29x29) 35W Muxless Hybrid Switchable

POWER

- Adapter-in Jack w/Smart pin
- DC in Conn
- Battery Conn
- CHARGER: +VCHGR — 40
- 3.3VSTBY / 5VSTBY — 41
- DDR3: 1.5V / 0.75VS_DDR_VTT
- DDR_VTTR — 46
- CPU CORE
- 45W/35W : CPU_CORE — 42, 43
- CPU PLL : 1.8VS LDO — 47
- 1.1V LDO : USB3.0 — 37
- UMA in CPU: VGFX_CORE — 43
- CPU IO: 1.05VS_VCCIO
- == PCH CORE: 1.05VS — 44
- CPU IO(0.9V~0.8V): VCCSA — 45
- POWER GOOD — 38
- RUN POWER /SUS POWER — 39
- POWER GOOD — 39
- 5VSTBY ---> 5VS — 39
- 1.5V ---> 1.5VS == 1.5VS_CPUVDDQ — 39
- 3.3VSTBY---> 3.3VS — 39
- 3.3VSTBY---> 3.3VSTBY_PCH — 39
- 3.3VSTBY---> 3.3V_LAN — 39

POWER of Discrete VGA

- VGA_CORE — 57
- 35W /25W / 15W: VGA_CORE
- LDO: VGA_1.0VS — 56
- LDO: VGA_1.8VS — 56
- 3.3VS == VGA_3.3VS — 56
- 1.5V ---> VGA_1.5VS — 56
- BACO — 56
- DGPU_PWROK — 56
- DGPU_PERST#

Intel CPU

Sandy Bridge
Socket 989

2Phase35W
3Phase45W: support Turbo mode

PEG 16Lanes
DDR3 Dual Channel
Integrated Graphic Controller
DP

XDP

DDR3
1333/ 1600 someQC

- 9 DDR3-SODIMM
- 10 DDR3-SODIMM

PEG x8

DMI
FDI

27MHz X'TAL
27/100MHz CLK GEN

GPU AMD — 48~53

15.6"/17.3" Muxless Hybrid:
Whistler XT 128bit 35W + gDDR5 x8
M2 package 29 x 29 FCBGA962

CH A
CH B

15.6"/17.3"
1GB/2GB Frame Buffer — 54~55
64Mx16 x8/128Mx16 x8
GDDR5, 5Gbps,12 x14mm

SPI ROM 128KB — SPI

DP → 4Lanes → eDP Panel Conn (4 Lanes conn)
Intel HR: Factory Option

Platform Control Hub

Intel PCH Cougar Point M
HM65 Express Chipset

Cougar Point M
Standard package
not SFF
3.9Watt TDP
FCBGA989
25mm X 25mm

12~21

X'TAL 14.318MHz
X'TAL 25MHz

for 17.3" only
- 25 HDD Conn 2nd — Cable
- 25 HDD Conn — Cable — SATA 3: 6Gbps
- 25 ODD Conn — Cable — SATA 2: 3Gbps
  Zero Power ODD Intel: Saving 100 ~ 160mW

USB 2.0: 480MBps

HDMI 1.4 — 4Lanes — Base Line — HDMI Conn 24

RGB — Base Line — VGA Conn 22

LVDS — 1 ch 15" / 2 Ch 17" — Base Line — LVDS 23 (2 Channel Conn + USB 2.0)
USB 2.0: 480MBps — USB 2.0 — Cable
Touch Screen — Touch Screen: Factory Option
LVDS
17": 2 ch HD+ 1600x900
15" /15" Touch: 1 Ch HD 1366x768

USB 2.0: 480MBps
USB3.0 Factory Option

PCI-E Gen2 5GT/S — USB3.0 NEC uDP720200 — 36 — SuperSpeed USB 3.0 x2
- USB2.0/3.0 cnn Wake Up — Connecter co-layout — 37
- USB2.0/3.0 cnn Wake Up — Connecter co-layout — 37

Intel HR: add TUSB7320
AMD Sabine: no TUSB7320, Hudson-M3 for USB3.0
AMD Danube: add TUSB7320

PCI-E Gen2 5GT/S — Cardreader RTS5209 — 30 — Conn 30 — Cable — Conn
2 in 1 Slot: 1) SD/SDHC/SDXC UHS-104MByte/s, 208MHz 2) MMC — 30

17.3": daughter Board
- USB 2.0 Conn Wake Up
- USB 2.0 Conn Wake Up
- Standby LED — White: PWRon, White blink: S3
- HDD LED — Bi LEDx1, White: Normal , Amber: Park

15.6"/17.3" daughter board

USB 2.0: 480MBps — Conn 31 — Cable

HDA

AUDIO CODEC IDT 92HD80TA — 33

- LDO TPS793475DBVR — 33
- SPK AMP TPA2012 — 34 — Internal Speaker Conn x4 speakers
- Internal DMic Conn To Webcam — 33, 34
- Microphone x1 — 33
- HP AMP TPA6130A2 — 34 — Headphone Microphone Combo Conn x2
- Woofer AMP TPA3111D1 — 35 — WOOFER CONN — 35 — 34

for 17.3" only

Lid Switch

LPC

KBC ITE8518 — 29

- Keyboard Conn — 29
  KB with:
  White LEDx1: Cap lock
  Amber LEDx1:Mute
  White/Amber Bi LEDx1: wireless
  NumLock LED x1:
  15/17numberpad KB
- Keyboard Backlight cnn — 27 — Configureable
- Thermal — Remote GPU Local CPU — 27
- FAN Conn — 27 — Cable embeded
- T/P Pick Button board — 27
  - T/P Pick Button — 15.6"/17.3" daughter board
  - Touch Pad Side Light LED Module — Touch Pad Side Light LED Module White x 4 T/P on/off LED Amber x1
  - Touchpad Conn — 27 — T/P Off: tapping T/P left-Top corner
- PWR D/B Conn — 31 — Cable

15.6" daughter board
- Conn — PWR Button x1 / White LEDx1 — White: PWR on Blink White: Standby
- Quick Web Button x1

17.3" daughter board
- Conn — PWR Button x1 / White LEDx1 — White: PWR on Blink White: Standby
- Quick Web Button x1

- G SENSOR — 25 — ST Micro HP3DC
- Charge LED — 40 — on Adaptor Jack Bi LED x1 White: AC in Amber: Charging
- HP Logo LED Module Conn — Cable embeded White LED x 1

Bluetooth Conn

Softbreeze Module — 26 — EMBD BT2.1 SB FW299.306 ENH DTA RATE A — Cable

WebCam Conn — 26

Sensor OVT 9726
Dual DMic
White LED: Enable — Cable

Fingerprint Conn — 26

Validaty VFM5131
Bi LED x1:
White normal,
Amber not reconized — Cable

USB 2.0 → WLAN/ WLAN+WiMAX /WLAN+BT — 27 — Half Size MiniCard Socket — PCI-E Gen2 5GT/S

RJ45 Jack — 30

LED White x1 for connectivity, Amber x1 for activity

Transformer — 30

Realtek Gb LAN — 30

RTL8111E-VB-GR
RTL8111E-VL-CG W/ASPM
No cable pluged, the NIC auto disabled.

X'TAL 32.768KHz

RTC Cell Holder

SPI ROM BIOS 4MB — SPI — RTC

SPI ROM 512KB

Layout
DMI
Differential 85ohm (single 50)
n,p mismatch <5mils
maximum mis-match between inter-pairs : 7000 mils (177.8 mm)
Max: [2000 to 8000 mils, 3vias]
436735 Huron River Design Guide 1.0

Layout
FDI
Differential 85ohm (single 50)
n,p mismatch <5mils
pair to pair mismatch < 7 inches
Max:
3vias : 2000 to 8000 mils
4vias : 2000 to 6500 mils
436735 Huron River Design Guide 1.0

Note:
FDI (Flexible Display Interface):
Carries display traffic
from the integrated graphics controller
to the legacy display connectors in the PCH.

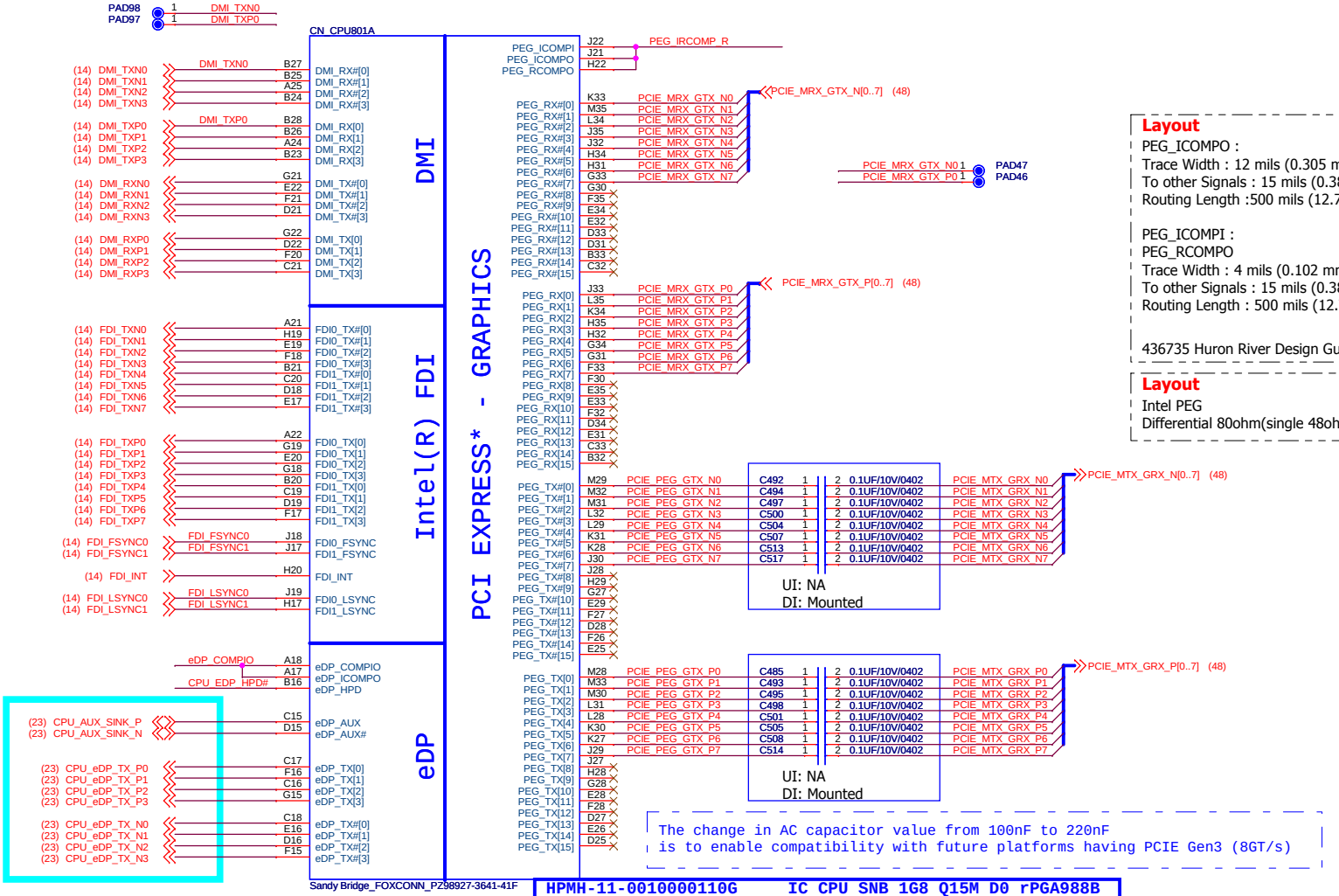
Layout
DP_ICOMPO :
Trace Width : 12 mils (0.305 mm)
To other Signals : 15 mils (0.381 mm)
Routing Length :500 mils (12.7 mm)

DP_COMPIO :
PEG_RCOMPO
Trace Width : 4 mils (0.102 mm)
To other Signals : 15 mils (0.381 mm)
Routing Length : 500 mils (12.7 mm)

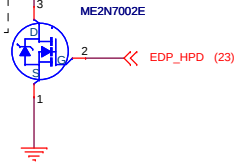
436735 Huron River Design Guide 1.0

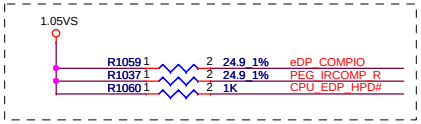
Layout
eDP
Differential 85ohm (single 50)
n,p mismatch <5mils
pair to pair mismatch < 7 inches
Max:
2vias : 2000 - 8000 mils
4vias : 2000 - 8000 mils
436735 Huron River Design Guide 1.0

Layout(Switchable Graphics Topology)
eDP
Differential 85ohm (single 50)
n,p mismatch <5mils
pair to pair mismatch < 7 inches
Max:
4vias : 2000 - 5000 mils
436735 Huron River Design Guide 1.0



PU 1K is at CPU page





Layout
PEG_ICOMPO :
Trace Width : 12 mils (0.305 mm)
To other Signals : 15 mils (0.381 mm)
Routing Length :500 mils (12.7 mm)

PEG_ICOMPI :
PEG_RCOMPO
Trace Width : 4 mils (0.102 mm)
To other Signals : 15 mils (0.381 mm)
Routing Length : 500 mils (12.7 mm)

436735 Huron River Design Guide 1.0

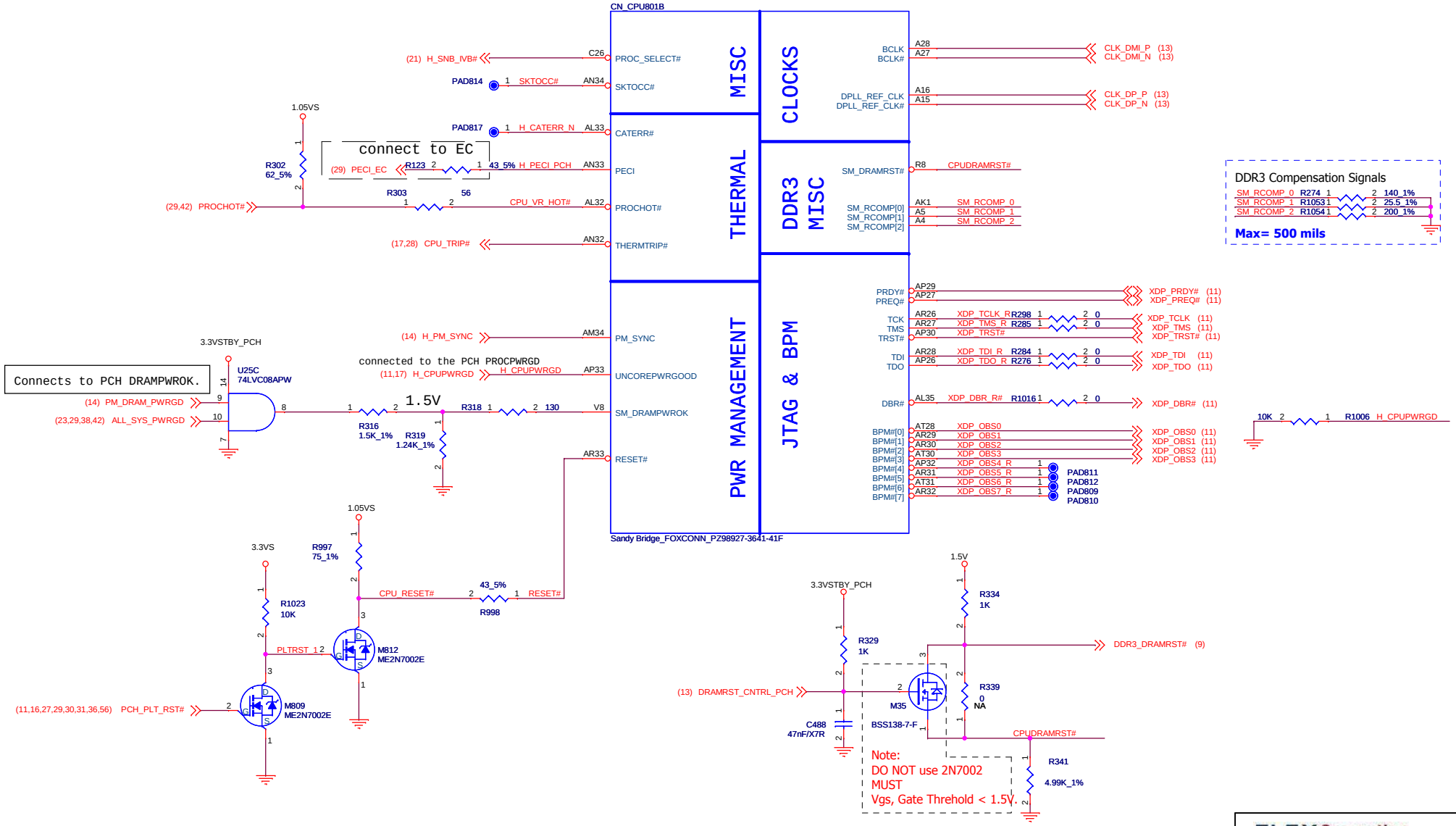
Layout
Intel PEG
Differential 80ohm(single 48ohm)

The change in AC capacitor value from 100nF to 220nF
is to enable compatibility with future platforms having PCIE Gen3 (8GT/s)

HPMH-11-0010000110G	IC CPU SNB 1G8 Q15M D0 rPGA988B
HPMH-11-0010000111G	IC CPU SNB 2G Q15C D0 rPGA988B
HPMH-11-0010000112G	IC CPU SNB 2G2 Q154 D0 rPGA988B
HPMH-11-0010000113G	IC CPU SNB 2G5 Q17N J0 rPGA988B
HPMH-11-0010000114G	IC CPU SNB 2G6 Q16P J0 rPGA988B
HPMH-11-0010000115G	IC CPU SNB 2G7 Q16M J0 rPGA988B
HPMH-11-0010000116G	IC CPU SNB 2G5 Q17N J0 rPGA988B
HPMH-11-0010000117G	IC CPU SNB 2G2 Q1CL D1 rPGA988B
HPMH-11-0010000118G	IC CPU SNB 2G3 Q1CG D1 rPGA988B
HPMH-11-0010000119G	IC CPU SNB 2G Q1CN D1 rPGA988B
HPMH-11-0010000120G	IC CPU SNB 2G Q1NS D2 rPGA988B
HPMH-11-0010000121G	IC CPU SNB 2G2 Q1NN D2 rPGA988B
HPMH-11-0010000122G	IC CPU SNB 2G3 Q1NC D2 rPGA988B
HPMH-11-0010000123G	IC CPU SNB 2G1 Q1SP J1 rPGA988B
HPMH-11-0010000124G	IC CPU SNB 2G3 Q1SD J1 rPGA988B
HPMH-11-0010000125G	IC CPU SNB 2G5 Q1RX J1 rPGA988B
HPMH-11-0010000126G	IC CPU SNB 2G6 Q1S6 J1 rPGA988B
HPMH-11-0010000127G	IC CPU SNB 2G7 Q1S2 J1 rPGA988B
HPMH-11-0010000128G	IC CPU SNB 2G SR02Y D2 rPGA988B
HPMH-11-0010000129G	IC CPU SNB 2G2 SR014 D2 rPGA988B
HPMH-11-0010000130G	IC CPU SNB 2G3 SR012 D2 rPGA988B

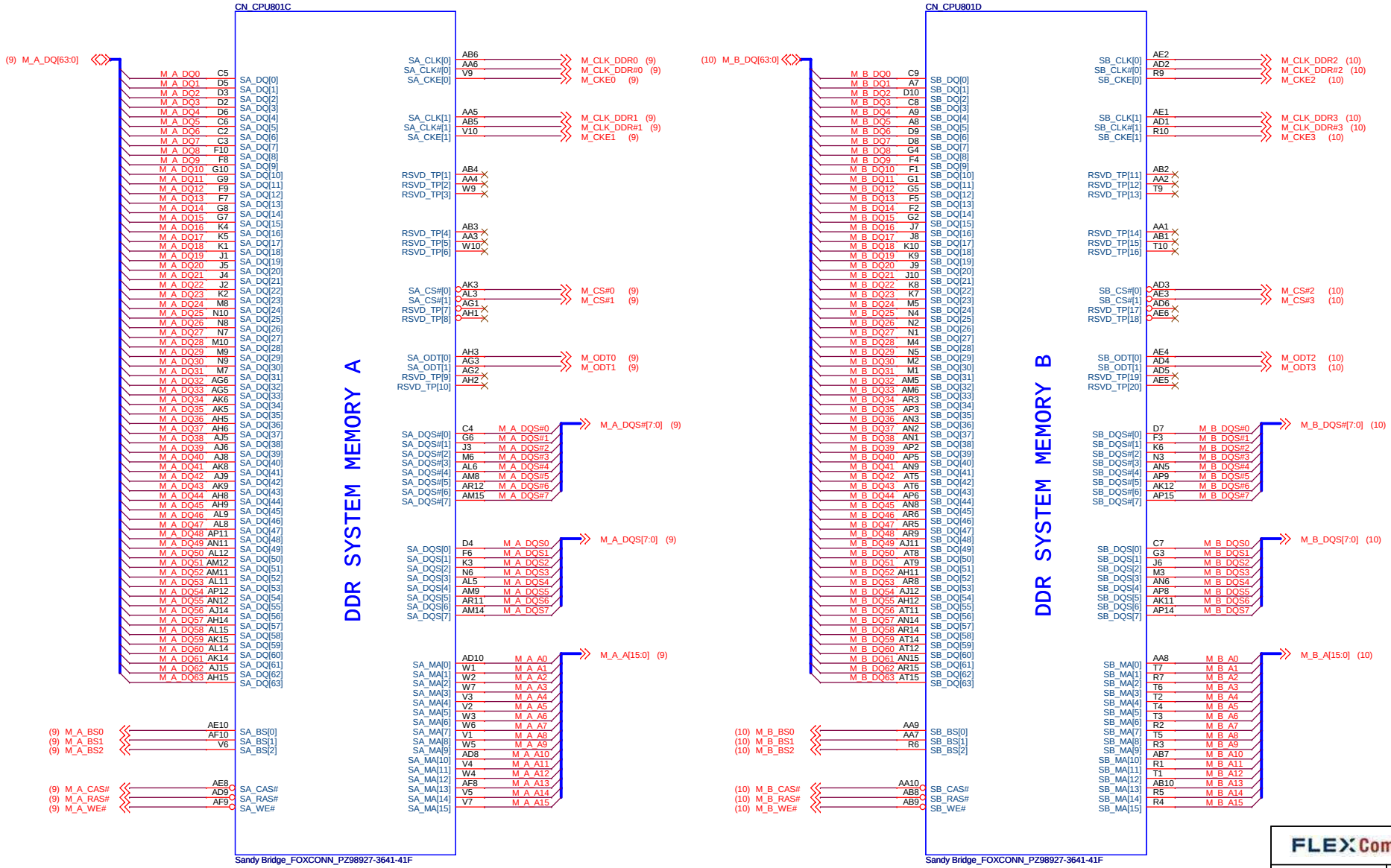
FLEX Computing

Project Name : H710DI1	Title : CPU_1/7_DMI_FDI_PCIE
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 2 of 63



Project Name : H710DI1	Title : CPU_2/7_CLK_MISC_THERM
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 3 of 63

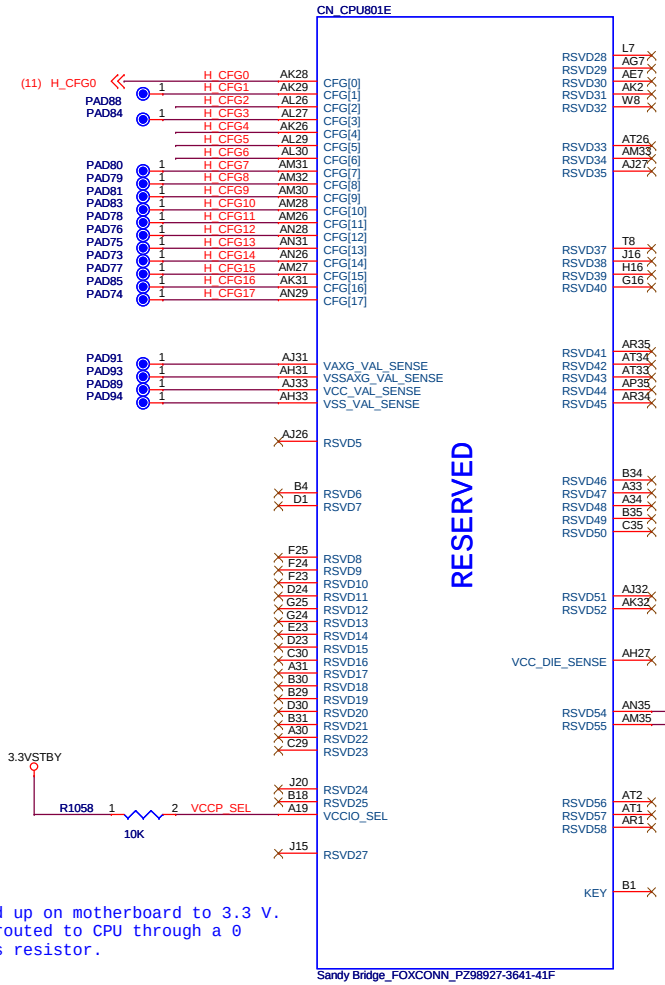
FLEX Computing



FLEX Computing

Project Name : H710DI1	Title : CPU_3/7_DDR3	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
Date: Monday, November 08, 2010	Sheet : 4 of 63	

CFG Straps for PROCESSOR



Pulled up on motherboard to 3.3 V.
Also routed to CPU through a 0 series resistor.

VCCIO_SEL On CRB
H_SNB_IVB#_PWRCTRL = low, 1.0V
H_SNB_IVB#_PWRCTRL = high/NC, 1.05V

Voltage selection for VCCIO: For Huron River platforms, this pin must be pulled high on the motherboard

H_CFG5
H_CFG6
R267 1 2 1K
PAD82

PCIE Port Bifurcation Straps	
CFG[6:5]	11:(Default) x16 - Device 1 functions 1 and 2 disabled 10: x8, x8 - Device 1 function 1 enabled function 2 disabled 01: Reserved - Device 1 function 1 disabled function 2 enabled 00: x8,x4,x4 - Device 1 functions 1 and 2 enabled

H_CFG7 R258 1 2 1K NA

PEG DEFER TRAINING	
CFG7	1: (Default) PEG Train immediately following xxRESETB de assertion 0: PEG Wait for BIOS for training

CFG[17:7]	Reserved configuration lanes. A test point may be placed on the board for these lands.

CFG[1:0]	Reserved configuration lane. A test point may be placed on the board for this lane.

H_CFG2 1 PAD86

PEG Static Lane Reversal - CFG2 is for the 16x	
CFG[2]	1:(Default) Normal Operation; Lane # definition matches socket pin map definition 0:Lane numbers reversed

H_CFG3 1 PAD87

PCI Express* Static x4 Lane Numbering Reversal.	
CFG[3]	1 : Normal operation 0 : Lane numbers reversed

H_CFG4 R269 1 2 1K NA

LVDS NA
eDP Mount

Display Port Presence Strap(eDP enable)	
CFG[4]	1:(Default) Disabled; No Physical Display Port attached to Embedded Display Port 0:Enabled; An external Display Port device is connected to the Embedded Display Port

FLEXComputing

Project Name : H710DI1	Title : CPU_4/7_RSVD_CFG	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
Date: Monday, November 08, 2010	Sheet : 5 of 63	

POWER

CN_CPU801F

CPU_CORE

36A~52A

C1055 10UF/6.3V/0603
C459 10UF/6.3V/0603
C1062 10UF/6.3V/0603
C412 10UF/6.3V/0603
C460 10UF/6.3V/0603
C457 10UF/6.3V/0603
C461 10UF/6.3V/0603
C458 10UF/6.3V/0603
C436 10UF/6.3V/0603
C435 10UF/6.3V/0603
C1059 22UF/6.3V/0805
C1056 22UF/6.3V/0805
C416 22UF/6.3V/0805
C438 22UF/6.3V/0805
C437 22UF/6.3V/0805
C1057 22UF/6.3V/0805
C1058 22UF/6.3V/0805
C1063 22UF/6.3V/0805
C1065 22UF/6.3V/0805
C413 22UF/6.3V/0805
C414 22UF/6.3V/0805
C439 22UF/6.3V/0805
C440 22UF/6.3V/0805
C1066 22UF/6.3V/0805
C415 22UF/6.3V/0805
C408 330UF/2.5V/1.9mm
C487 330UF/2.5V/1.9mm
C1064 22UF/6.3V/0805
modify for FN

AG35 VCC1
AG34 VCC2
AG33 VCC3
AG32 VCC4
AG31 VCC5
AG30 VCC6
AG29 VCC7
AG28 VCC8
AG27 VCC9
AG26 VCC10
AF35 VCC11
AF34 VCC12
AF33 VCC13
AF32 VCC14
AF31 VCC15
AF30 VCC16
AF29 VCC17
AF28 VCC18
AF27 VCC19
AF26 VCC20
AD35 VCC21
AD34 VCC22
AD33 VCC23
AD32 VCC24
AD31 VCC25
AD30 VCC26
AD29 VCC27
AD28 VCC28
AD27 VCC29
AD26 VCC30
AC35 VCC31
AC34 VCC32
AC33 VCC33
AC32 VCC34
AC31 VCC35
AC30 VCC36
AC29 VCC37
AC28 VCC38
AC27 VCC39
AC26 VCC40
AA35 VCC41
AA34 VCC42
AA33 VCC43
AA32 VCC44
AA31 VCC45
AA30 VCC46
AA29 VCC47
AA28 VCC48
AA27 VCC49
AA26 VCC50
Y35 VCC51
Y34 VCC52
Y33 VCC53
Y32 VCC54
Y31 VCC55
Y30 VCC56
Y29 VCC57
Y28 VCC58
Y27 VCC59
Y26 VCC60
V35 VCC61
V34 VCC62
V33 VCC63
V32 VCC64
V31 VCC65
V30 VCC66
V29 VCC67
V28 VCC68
V27 VCC69
V26 VCC70
U35 VCC71
U34 VCC72
U33 VCC73
U32 VCC74
U31 VCC75
U30 VCC76
U29 VCC77
U28 VCC78
U27 VCC79
U26 VCC80
R35 VCC81
R34 VCC82
R33 VCC83
R32 VCC84
R31 VCC85
R30 VCC86
R29 VCC87
R28 VCC88
R27 VCC89
R26 VCC90
P35 VCC91
P34 VCC92
P33 VCC93
P32 VCC94
P31 VCC95
P30 VCC96
P29 VCC97
P28 VCC98
P27 VCC99
P26 VCC100

CORE SUPPLY

PEG AND DDR

1.05VS

8.5A

MB Bottom Socket Cavity

C1061 22UF/6.3V/0805
C1069 22UF/6.3V/0805
C1071 22UF/6.3V/0805
C453 22UF/6.3V/0805
C469 22UF/6.3V/0805

C478 22UF/6.3V/0805
C1068 22UF/6.3V/0805
C1076 22UF/6.3V/0805
C1084 22UF/6.3V/0805
C1085 22UF/6.3V/0805
C523 22UF/6.3V/0805
C1082 22UF/6.3V/0805
C534 330UF/2.5V/1.9mm

MB Top Socket Cavity

VCCIO at CPU

VCCIO1 AH13
VCCIO2 AH10
VCCIO3 AG10
VCCIO4 AC10
VCCIO5 Y10
VCCIO6 U10
VCCIO7 P10
VCCIO8 L10
VCCIO9 J14
VCCIO10 J13
VCCIO11 J12
VCCIO12 J11
VCCIO13 H14
VCCIO14 H12
VCCIO15 H11
VCCIO16 G14
VCCIO17 G13
VCCIO18 G12
VCCIO19 F14
VCCIO20 F13
VCCIO21 F12
VCCIO22 F11
VCCIO23 E14
VCCIO24 E12
VCCIO25 E11
VCCIO26 D14
VCCIO27 D13
VCCIO28 D12
VCCIO29 D11
VCCIO30 C14
VCCIO31 C13
VCCIO32 C12
VCCIO33 C11
VCCIO34 B14
VCCIO35 B12
VCCIO36 A14
VCCIO37 A13
VCCIO38 A12
VCCIO39 A11
VCCIO40 J23

7/06 delet 330uF X2
poewr side have 330uF X3
(3x 330 µF for 2012 capable designs)
follow Huron River Platform Power Delivery (439028)

SVID

50 ohm reference GND

VIDALERT# AJ29 SVID_ALRT_R# R266 1 2 43_5%
VIDSCLK AJ30 VR_SVID_CLK
VIDSOUT AJ28 VR_SVID_DATA

VR_SVID_ALERT# (42)
VR_SVID_CLK (42)
VR_SVID_DATA (42)

1.05VS
VR_SVID_ALERT# R305 1 2 75_1%
VR_SVID_DATA R306 1 2 130_1%

Layout Note:
Alert#(AJ29) signal must be routed between the Clock and Data lines to reduce the cross talk between them. Spacing recommendations from the “Asynchronous Signal General Routing Guideline” of the Huron River PDG have to be met.

SENSE LINES

VCC_SENSE AJ35
VSS_SENSE AJ34

VCC_SENSE (42)
VSS_SENSE (42)

VCCIO_SENSE B10
VSSIO_SENSE A10

VCCIO_SENSE (44)
VSSIO_SENSE (44)

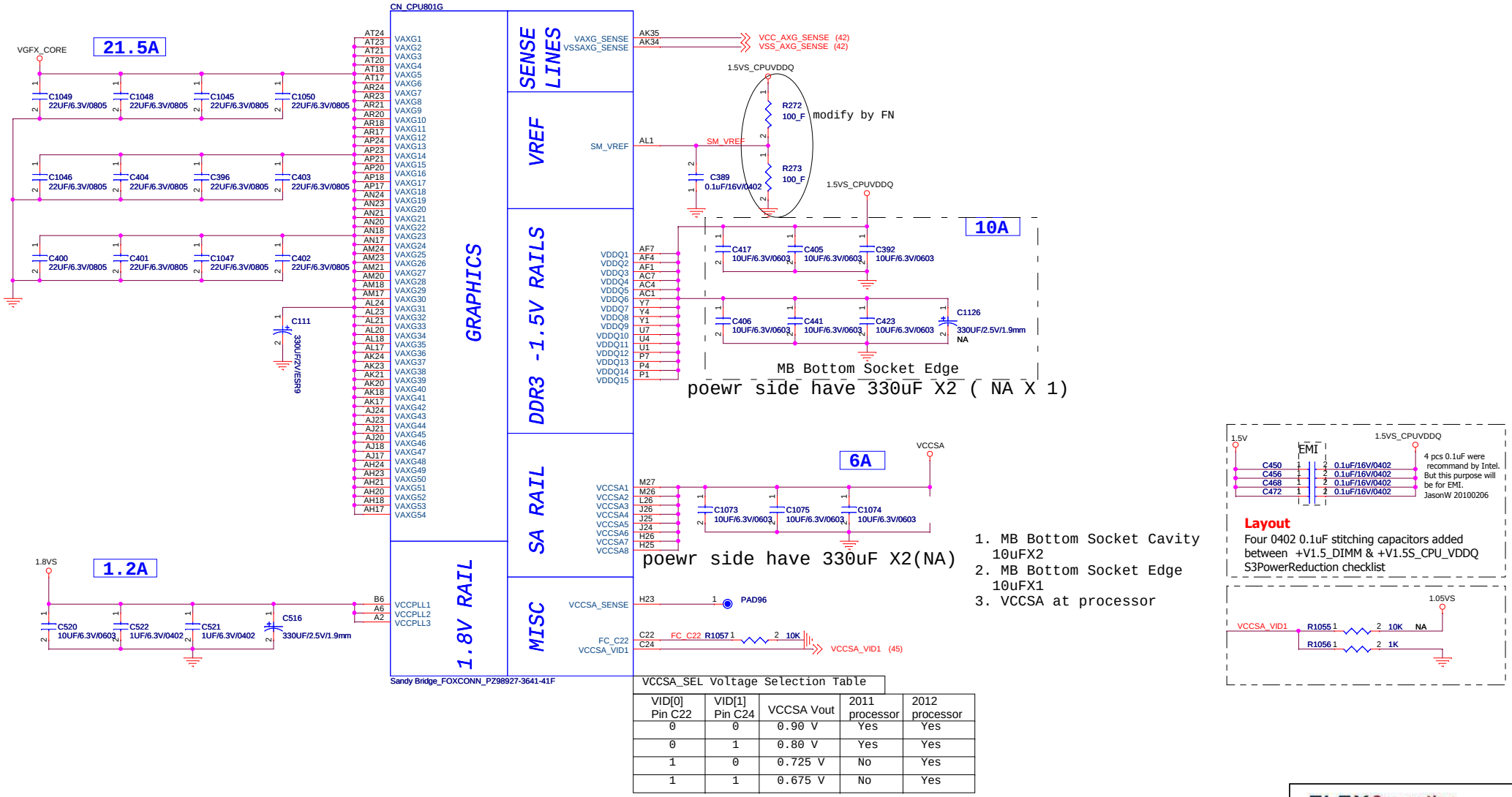
1.05VS
VCCIO_SENSE R343 1 2 10 NA
VSSIO_SENSE R345 1 2 10 NA

Sandy Bridge_FOXCONN_PZ98927-3641-41F

FLEX Computing

Project Name : H710DI1	Title : CPU_5/7_VCC_VCCIO
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 6 of 63

POWER



1. MB Bottom Socket Cavity 10uFX2
2. MB Bottom Socket Edge 10uFX1
3. VCCSA at processor

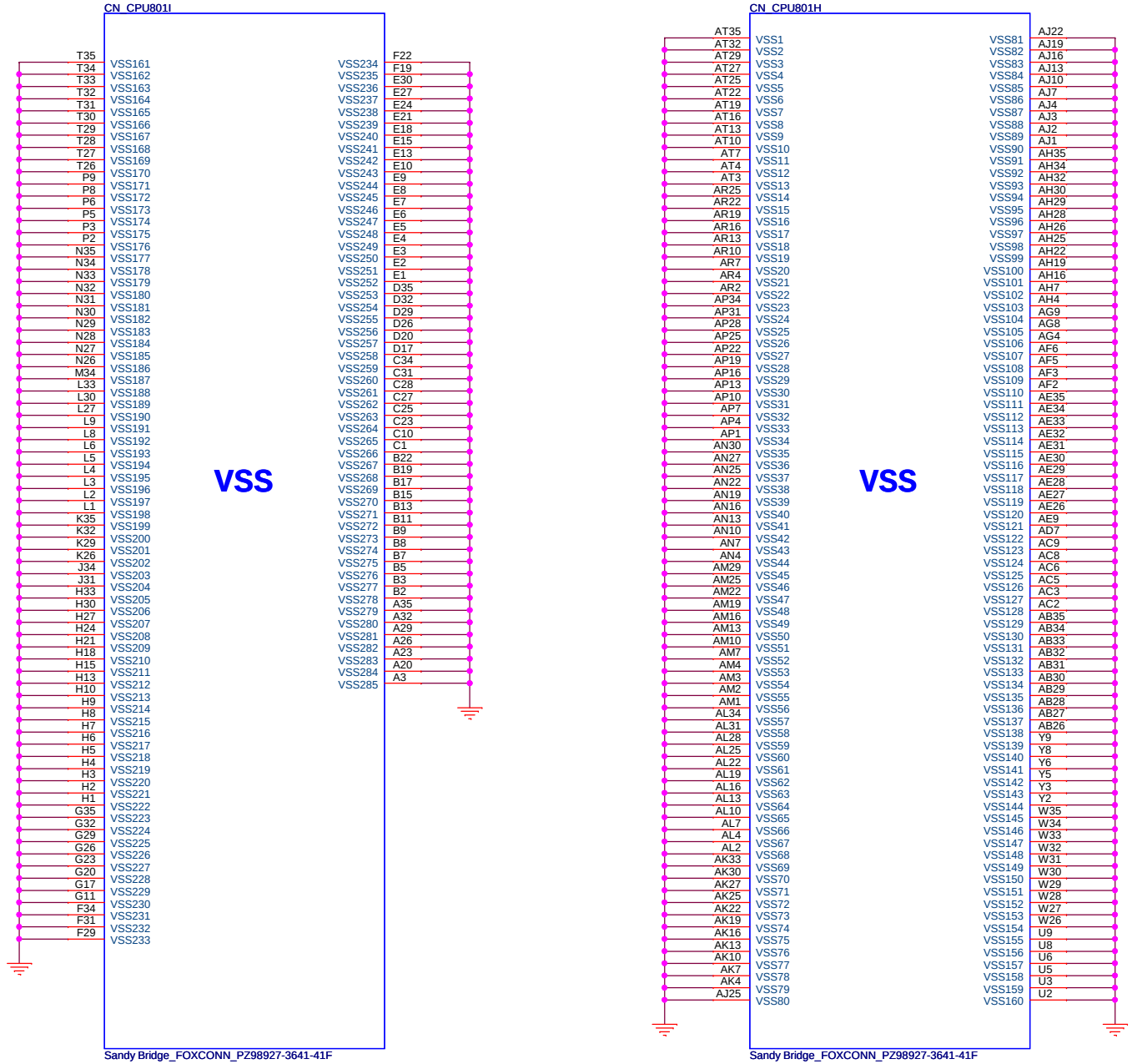
VCCSA_SEL Voltage Selection Table

VID[0] Pin C22	VID[1] Pin C24	VCCSA Vout	2011 processor	2012 processor
0	0	0.90 V	Yes	Yes
0	1	0.80 V	Yes	Yes
1	0	0.725 V	No	Yes
1	1	0.675 V	No	Yes

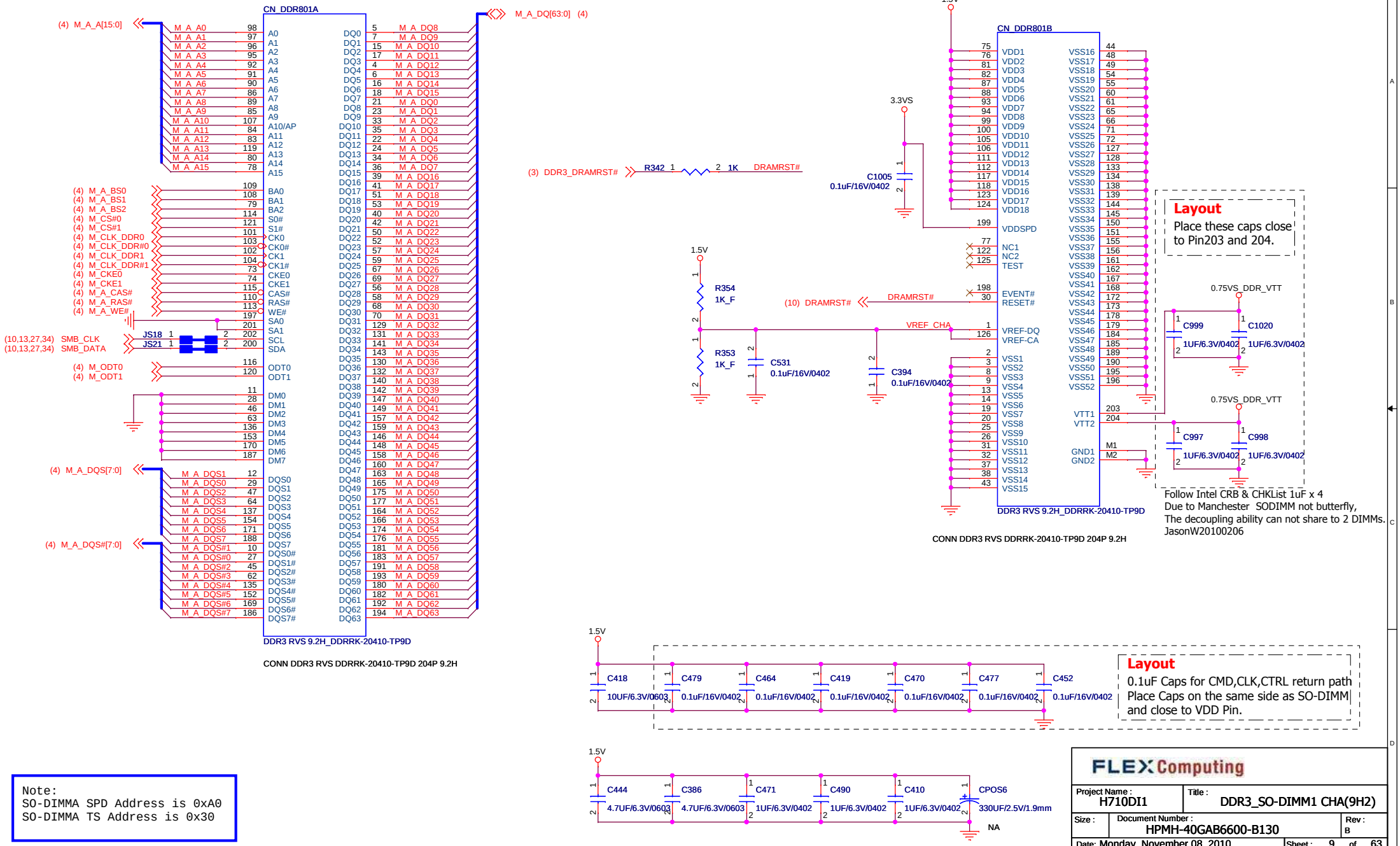
Sandy Bridge_FOXCONN_PZ98927-3641-41F

FLEX Computing

Project Name : H710DI1	Title : CPU_6/7_VGFX_VDDR3
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 7 of 63


CN_CPU801I
T35
T34 VSS161
T33 VSS162
T32 VSS163
T32 VSS164
T31 VSS165
T30 VSS166
T29 VSS167
T28 VSS168
T27 VSS169
T26 VSS170
P9 VSS171
P8 VSS172
P6 VSS173
P5 VSS174
P3 VSS175
P2 VSS176
N35 VSS177
N34 VSS178
N33 VSS179
N32 VSS180
N31 VSS181
N30 VSS182
N29 VSS183
N28 VSS184
N27 VSS185
N26 VSS186
M34 VSS187
L33 VSS188
L30 VSS189
L27 VSS190
L9 VSS191
L8 VSS192
L6 VSS193
L5 VSS194
L4 VSS195
L3 VSS196
L2 VSS197
L1 VSS198
K35 VSS199
K32 VSS200
K29 VSS201
K26 VSS202
J34 VSS203
J31 VSS204
H33 VSS205
H30 VSS206
H27 VSS207
H24 VSS208
H21 VSS209
H18 VSS210
H15 VSS211
H13 VSS212
H10 VSS213
H9 VSS214
H8 VSS215
H7 VSS216
H6 VSS217
H5 VSS218
H4 VSS219
H3 VSS220
H2 VSS221
H1 VSS222
G35 VSS223
G32 VSS224
G29 VSS225
G26 VSS226
G23 VSS227
G20 VSS228
G17 VSS229
G11 VSS230
F34 VSS231
F31 VSS232
F29 VSS233
VSS
VSS234 F22
VSS235 F19
VSS236 E30
VSS237 E27
VSS238 E24
VSS239 E21
VSS240 E18
VSS241 E15
VSS242 E13
VSS243 E10
VSS244 E9
VSS245 E8
VSS246 E7
VSS247 E6
VSS248 E5
VSS249 E4
VSS250 E3
VSS251 E2
VSS252 E1
VSS253 D35
VSS254 D32
VSS255 D29
VSS256 D26
VSS257 D20
VSS258 D17
VSS259 C34
VSS260 C31
VSS261 C28
VSS262 C27
VSS263 C25
VSS264 C23
VSS265 C10
VSS266 C1
VSS267 B22
VSS268 B19
VSS269 B17
VSS270 B15
VSS271 B13
VSS272 B11
VSS273 B9
VSS274 B8
VSS275 B7
VSS276 B5
VSS277 B3
VSS278 B2
VSS279 A35
VSS280 A32
VSS281 A29
VSS282 A26
VSS283 A23
VSS284 A20
VSS285 A3
Sandy Bridge_FOXCONN_PZ98927-3641-41F
CN_CPU801H
AT35
AT32 VSS1
AT29 VSS2
AT27 VSS3
AT25 VSS4
AT22 VSS5
AT19 VSS6
AT16 VSS7
AT13 VSS8
AT10 VSS9
AT7 VSS10
AT4 VSS11
AT3 VSS12
AR25 VSS13
AR22 VSS14
AR19 VSS15
AR16 VSS16
AR13 VSS17
AR10 VSS18
AR7 VSS19
AR4 VSS20
AR2 VSS21
AP34 VSS22
AP31 VSS23
AP28 VSS24
AP25 VSS25
AP22 VSS26
AP19 VSS27
AP16 VSS28
AP13 VSS29
AP10 VSS30
AP7 VSS31
AP4 VSS32
AP1 VSS33
AN30 VSS34
AN27 VSS35
AN25 VSS36
AN22 VSS37
AN19 VSS38
AN16 VSS39
AN13 VSS40
AN10 VSS41
AN7 VSS42
AN4 VSS43
AM29 VSS44
AM25 VSS45
AM22 VSS46
AM19 VSS47
AM16 VSS48
AM13 VSS49
AM10 VSS50
AM7 VSS51
AM4 VSS52
AM3 VSS53
AM2 VSS54
AM1 VSS55
AL34 VSS56
AL31 VSS57
AL28 VSS58
AL25 VSS59
AL22 VSS60
AL19 VSS61
AL16 VSS62
AL13 VSS63
AL10 VSS64
AL7 VSS65
AL4 VSS66
AL2 VSS67
AK33 VSS68
AK30 VSS69
AK27 VSS70
AK25 VSS71
AK22 VSS72
AK19 VSS73
AK16 VSS74
AK13 VSS75
AK10 VSS76
AK7 VSS77
AK4 VSS78
AJ25 VSS79
VSS80
VSS
VSS81 AJ22
VSS82 AJ19
VSS83 AJ16
VSS84 AJ13
VSS85 AJ10
VSS86 AJ7
VSS87 AJ4
VSS88 AJ3
VSS89 AJ2
VSS90 AJ1
VSS91 AH35
VSS92 AH34
VSS93 AH32
VSS94 AH30
VSS95 AH29
VSS96 AH28
VSS97 AH26
VSS98 AH25
VSS99 AH22
VSS100 AH19
VSS101 AH16
VSS102 AH7
VSS103 AH4
VSS104 AG9
VSS105 AG8
VSS106 AG4
VSS107 AF6
VSS108 AF5
VSS109 AF3
VSS110 AF2
VSS111 AE35
VSS112 AE34
VSS113 AE33
VSS114 AE32
VSS115 AE31
VSS116 AE30
VSS117 AE29
VSS118 AE28
VSS119 AE27
VSS120 AE26
VSS121 AE9
VSS122 AD7
VSS123 AC9
VSS124 AC8
VSS125 AC6
VSS126 AC5
VSS127 AC3
VSS128 AC2
VSS129 AB35
VSS130 AB34
VSS131 AB33
VSS132 AB32
VSS133 AB31
VSS134 AB30
VSS135 AB29
VSS136 AB28
VSS137 AB27
VSS138 AB26
VSS139 Y9
VSS140 Y8
VSS141 Y6
VSS142 Y5
VSS143 Y3
VSS144 Y2
VSS145 W35
VSS146 W34
VSS147 W33
VSS148 W32
VSS149 W31
VSS150 W30
VSS151 W29
VSS152 W28
VSS153 W27
VSS154 W26
VSS155 U9
VSS156 U8
VSS157 U6
VSS158 U5
VSS159 U3
VSS160 U2
Sandy Bridge_FOXCONN_PZ98927-3641-41F
FLEXComputing
Project Name : H710DI1
Title : CPU_7/7_VSS
Size :
Document Number : HPMH-40GAB6600-B130
Rev : B
Date: Monday, November 08, 2010
Sheet : 8 of 63

Channel-A

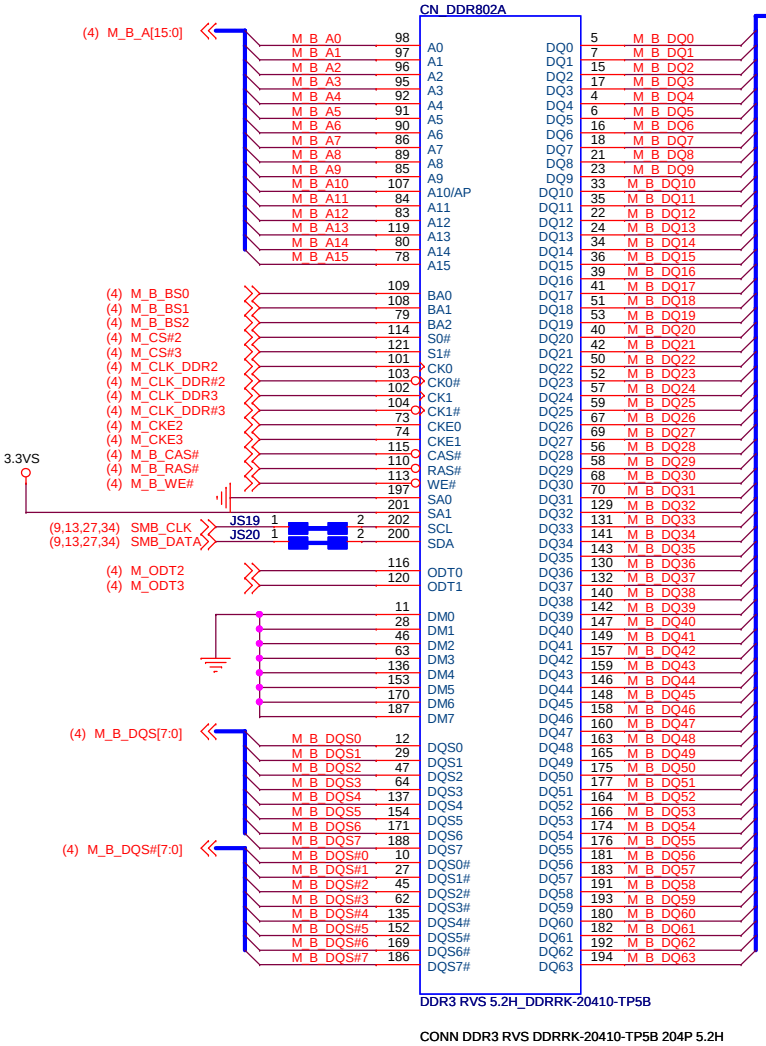


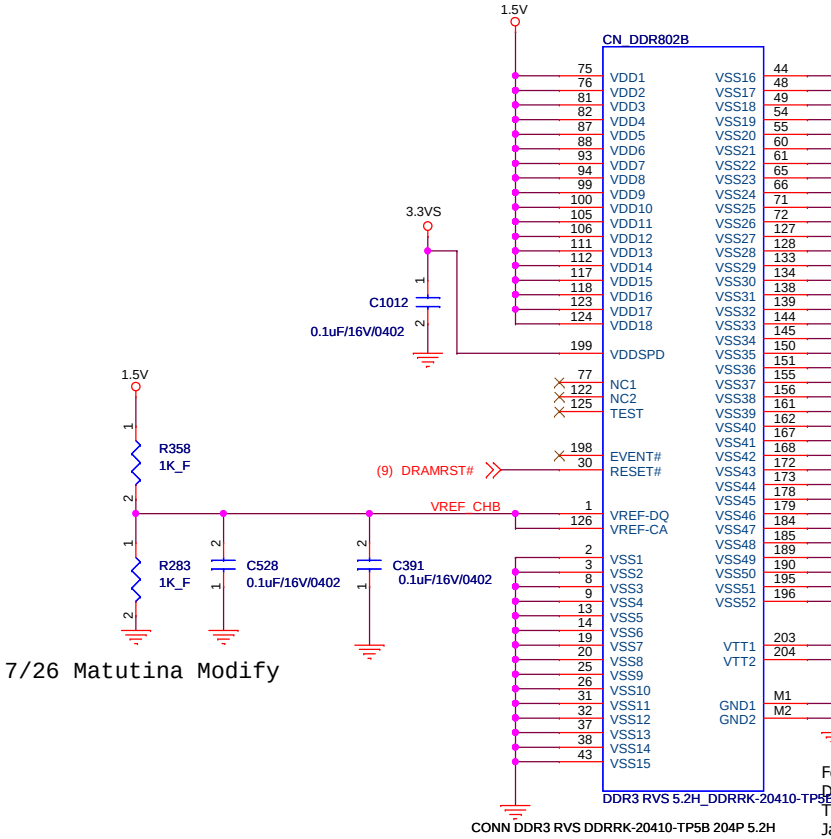
Note:
SO-DIMMA SPD Address is 0xA0
SO-DIMMA TS Address is 0x30

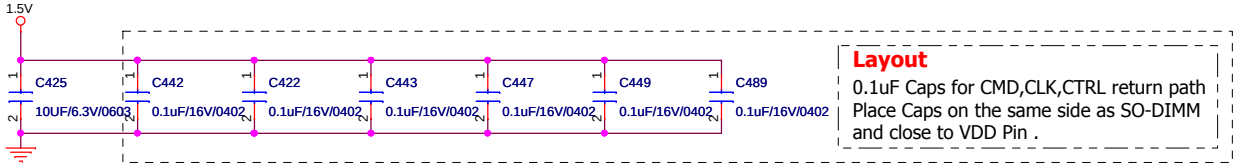
FLEXComputing

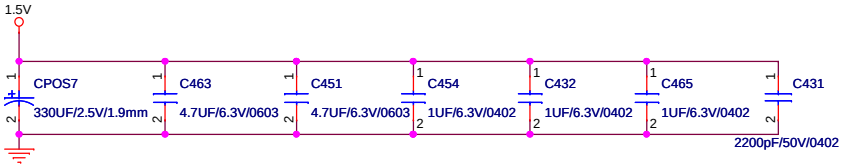
Project Name : H710DI1	Title : DDR3_SO-DIMM1 CHA(9H2)
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 9 of 63

Channel-B









Note:
SO-DIMMB SPD Address is 0xA4
SO-DIMMB TS Address is 0x34

SO-DIMM Address		
SA0_DIM0 = 0, SA1_DIM0 = 0	SPD	0xA0
	TS	0x30
SA0_DIM1 = 0, SA1_DIM1 = 1	SPD	0xA4
	TS	0x34

FLEXComputing

Project Name : H710DI1	Title : DDR3_SO-DIMM2 CHB(5H2)
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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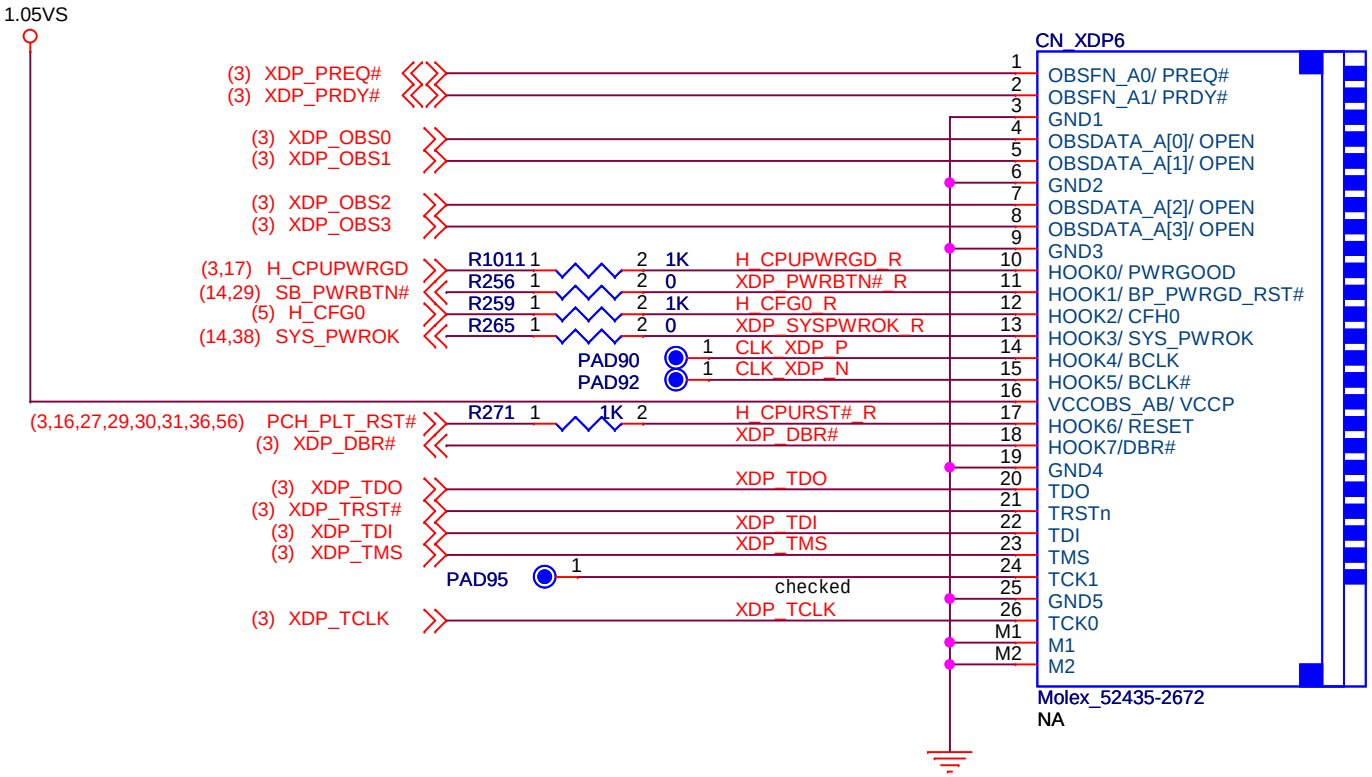
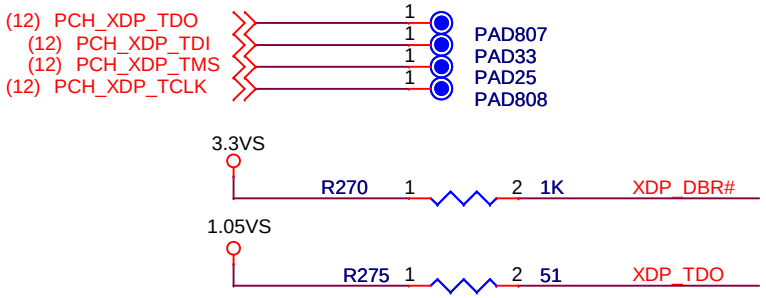
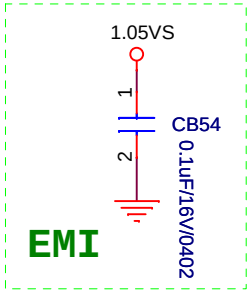
Debug Port







FLEX Computing

Project Name : H710DI1	Title : XDP(PROCESSOR / PCH)	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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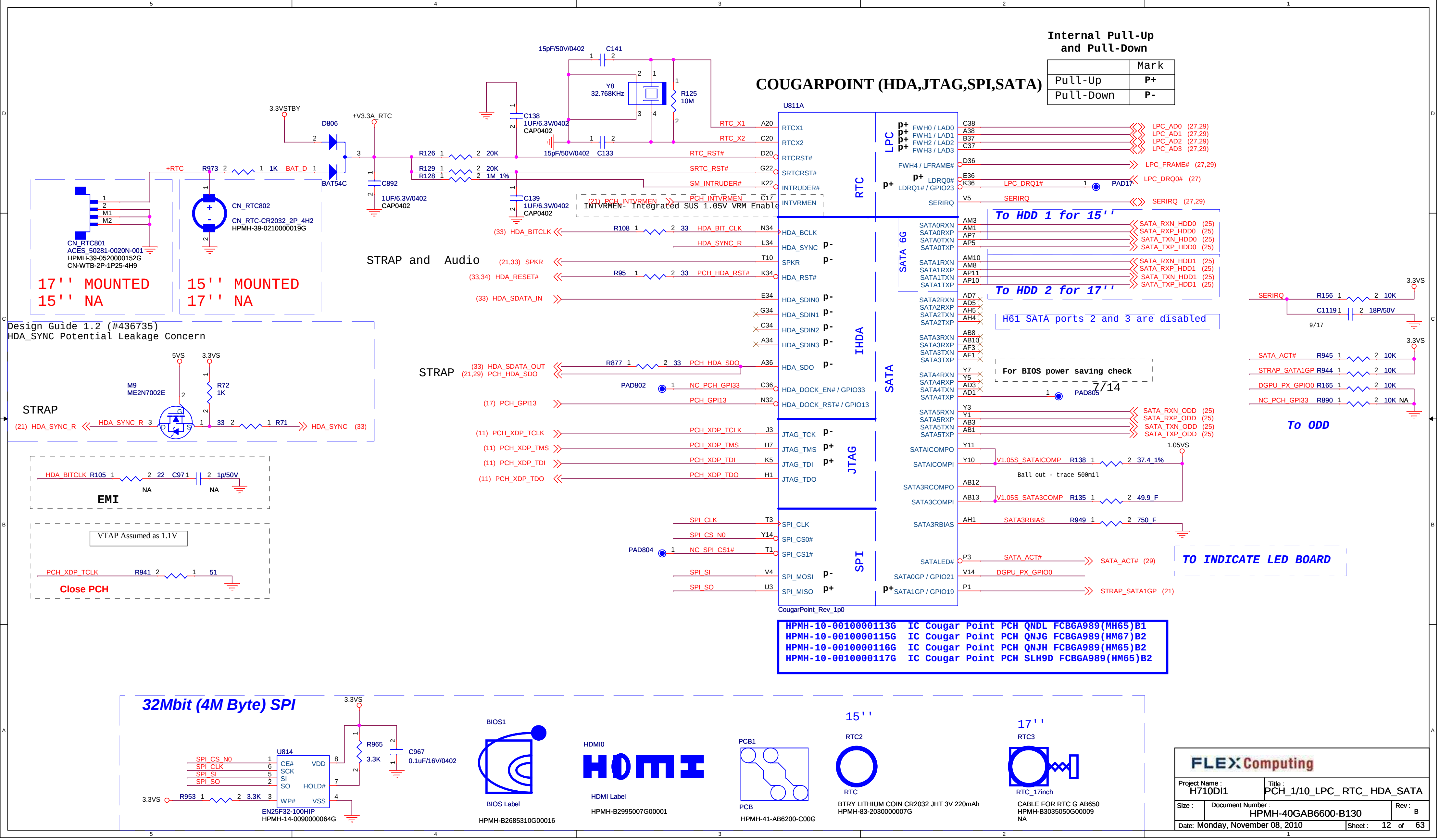

COUGARPOINT (HDA,JTAG,SPI,SATA)
Internal Pull-Up and Pull-Down
Mark
Pull-Up P+
Pull-Down P-
U811A
RTCX1
RTCX2
RTCRST#
SRTCRST#
INTRUDER#
INTVRMEN
RTC
LPC
FWH0 / LAD0
FWH1 / LAD1
FWH2 / LAD2
FWH3 / LAD3
FWH4 / LFRAME#
LDRQ0#
LDRQ1# / GPIO23
SERIRQ
INTVRMEN- Integrated SUS 1.05V VRM Enable
HDA_BCLK
HDA_SYNC
SPKR
HDA_RST#
HDA_SDIN0
HDA_SDIN1
HDA_SDIN2
HDA_SDIN3
HDA_SDO
HDA_DOCK_EN# / GPIO33
HDA_DOCK_RST# / GPIO13
IHDA
JTAG_TCK
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG
SPI_CLK
SPI_CS0#
SPI_CS1#
SPI_MOSI
SPI_MISO
SPI
SATA 6G
SATA
SATAICOMPO
SATAICOMPI
SATA3RCOMPO
SATA3COMPI
SATA3RBIAS
SATALED#
SATA0GP / GPIO21
SATA1GP / GPIO19
CougarPoint_Rev_1p0
To HDD 1 for 15''
To HDD 2 for 17''
H61 SATA ports 2 and 3 are disabled
For BIOS power saving check
7/14
To ODD
TO INDICATE LED BOARD
Ball out - trace 500mil
STRAP and Audio
STRAP
Design Guide 1.2 (#436735)
HDA_SYNC Potential Leakage Concern
EMI
VTAP Assumed as 1.1V
Close PCH
17'' MOUNTED
15'' NA
15'' MOUNTED
17'' NA
CN_RTC801
ACES_50281-0020N-001
HPMH-39-0520000152G
CN-WTB-2P-1P25-4H9
CN_RTC802
CN_RTC-CR2032_2P_4H2
HPMH-39-0210000019G
Y8
32.768KHz
D806
BAT54C
HPMH-10-00100001113G IC Cougar Point PCH QNDL FCBGA989(HM65)B1
HPMH-10-00100001115G IC Cougar Point PCH QNJG FCBGA989(HM67)B2
HPMH-10-00100001116G IC Cougar Point PCH QNJH FCBGA989(HM65)B2
HPMH-10-00100001117G IC Cougar Point PCH SLH9D FCBGA989(HM65)B2
32Mbit (4M Byte) SPI
U814
EN25F32-100HIP
HPMH-14-0090000064G
BIOS1
BIOS Label
HPMH-B2685310G00016
HDMI0
HDMI Label
HPMH-B2995007G00001
PCB1
PCB
HPMH-41-AB6200-C00G
15''
RTC2
RTC
BTRY LITHIUM COIN CR2032 JHT 3V 220mAh
HPMH-83-2030000007G
17''
RTC3
RTC_17inch
CABLE FOR RTC G AB650
HPMH-B3035050G00009
NA
FLEXComputing
Project Name : H710DI1
Title : PCH_1/10_LPC_ RTC_HDA_SATA
Size :
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COUGARPOINT (PCI-E,SMBUS,CLK)

PCI-E 2.0 x1	Usage
Lane 1	LAN
Lane2	WLAN
Lane 3	Card Reader
Lane 4	USB3.0
Lane 5	
Lane 6	
Lane 7	
Lane 8	

LAN

WLAN

Card Reader

USB3.0

U811B

PCI-E*

SMBUS

Controller Link

CLOCKS

FLEX CLOCKS

TO Audio SO-DIMM TO WLAN

TO KBC

TO dGPU

CRB use this pin to control DDR3_DRAMRST#

For BIOS power saving check

7/19 Matutina Modify

Clock termination for FCIM
1. External clock present: 10k unstuffed
2. External clock no present: 10k stuffed

EMI

CougarPoint_Rev_1p0

FLEXComputing

Project Name : H710DI1	Title : PCH_2/10_PCIE_ SMBUS_ CLK
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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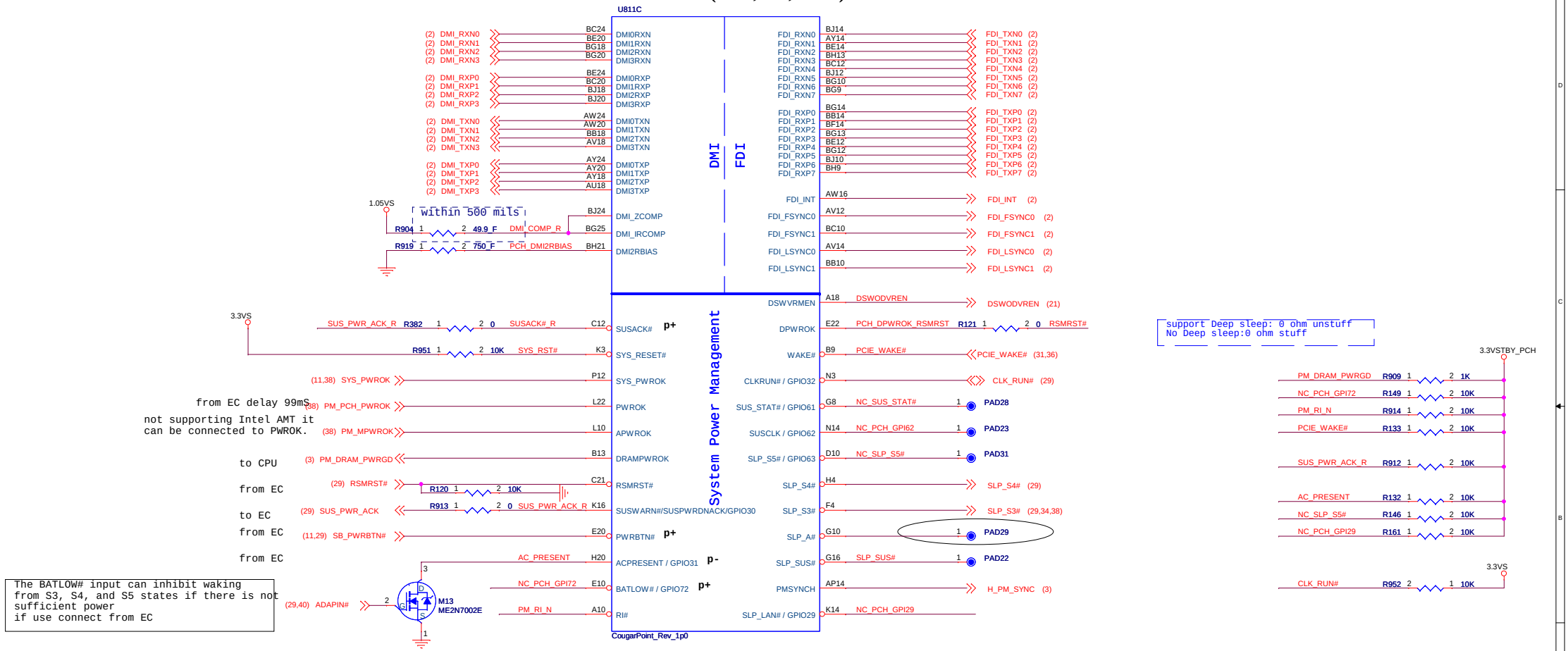
COUGARPOINT (DMI,FDI,GPIO)



Project Name : H710DI1	Title : PCH_3/10_DMI_ FDI_SPM
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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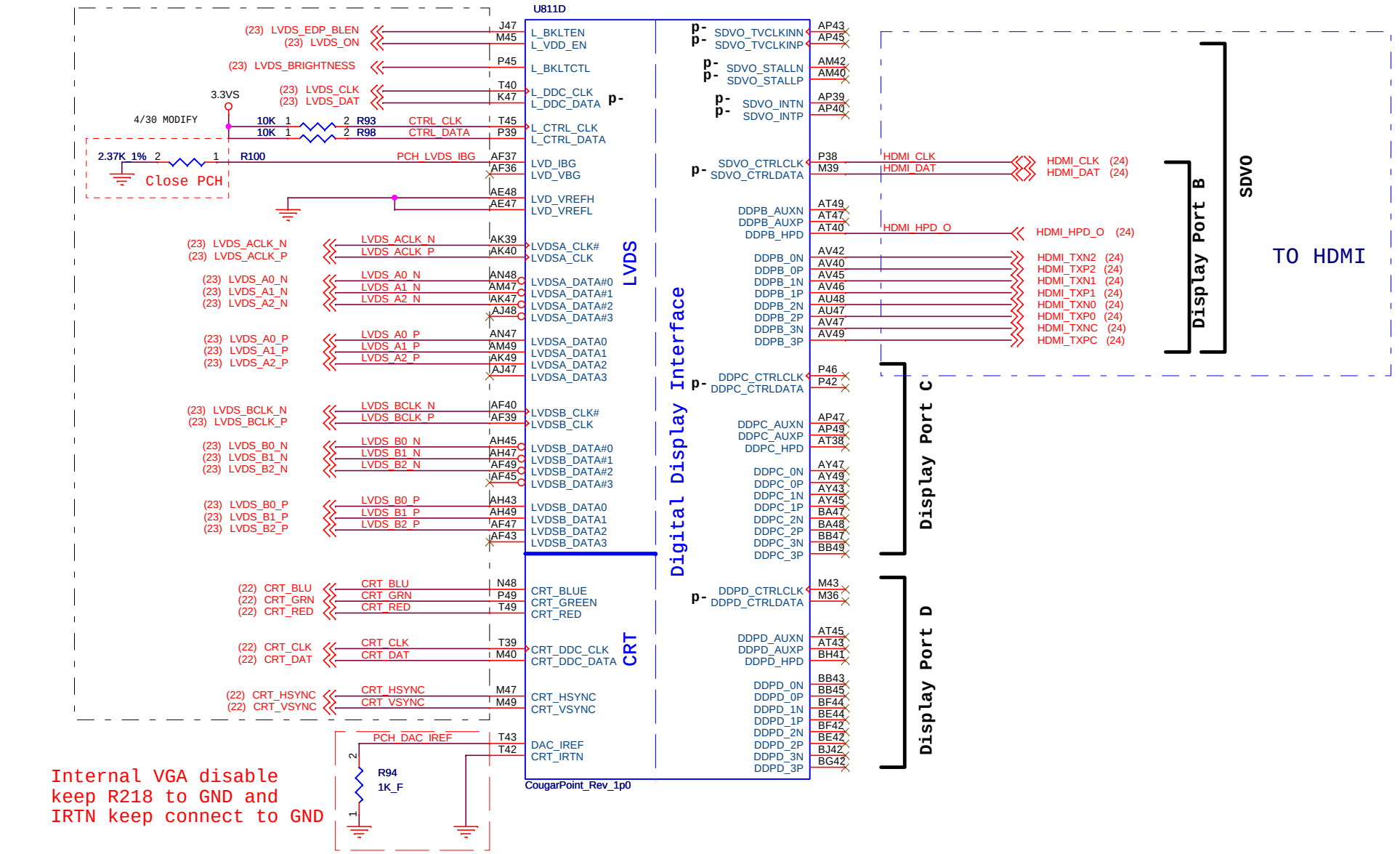
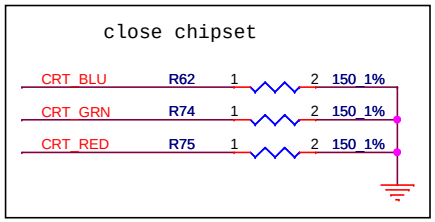
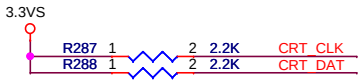
FLEX Computing

COUGARPOINT (LVDS,DDI)



close chipset

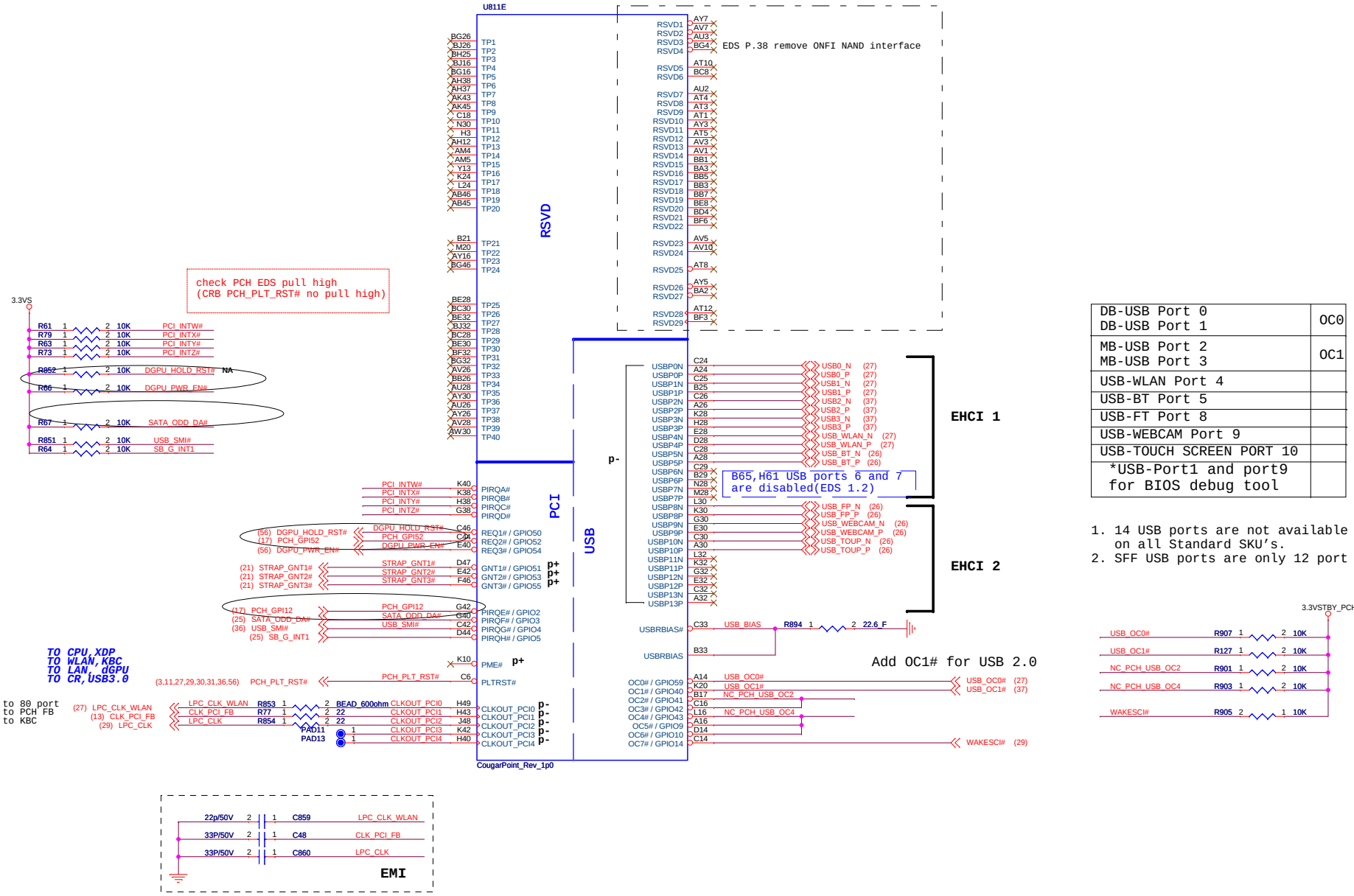




FLEX Computing

Project Name : H710DI1	Title : PCH_4/10_CRT_ LVDS_DDI
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 15 of 63

COUGARPOINT (PCI,USB,NVRAM)



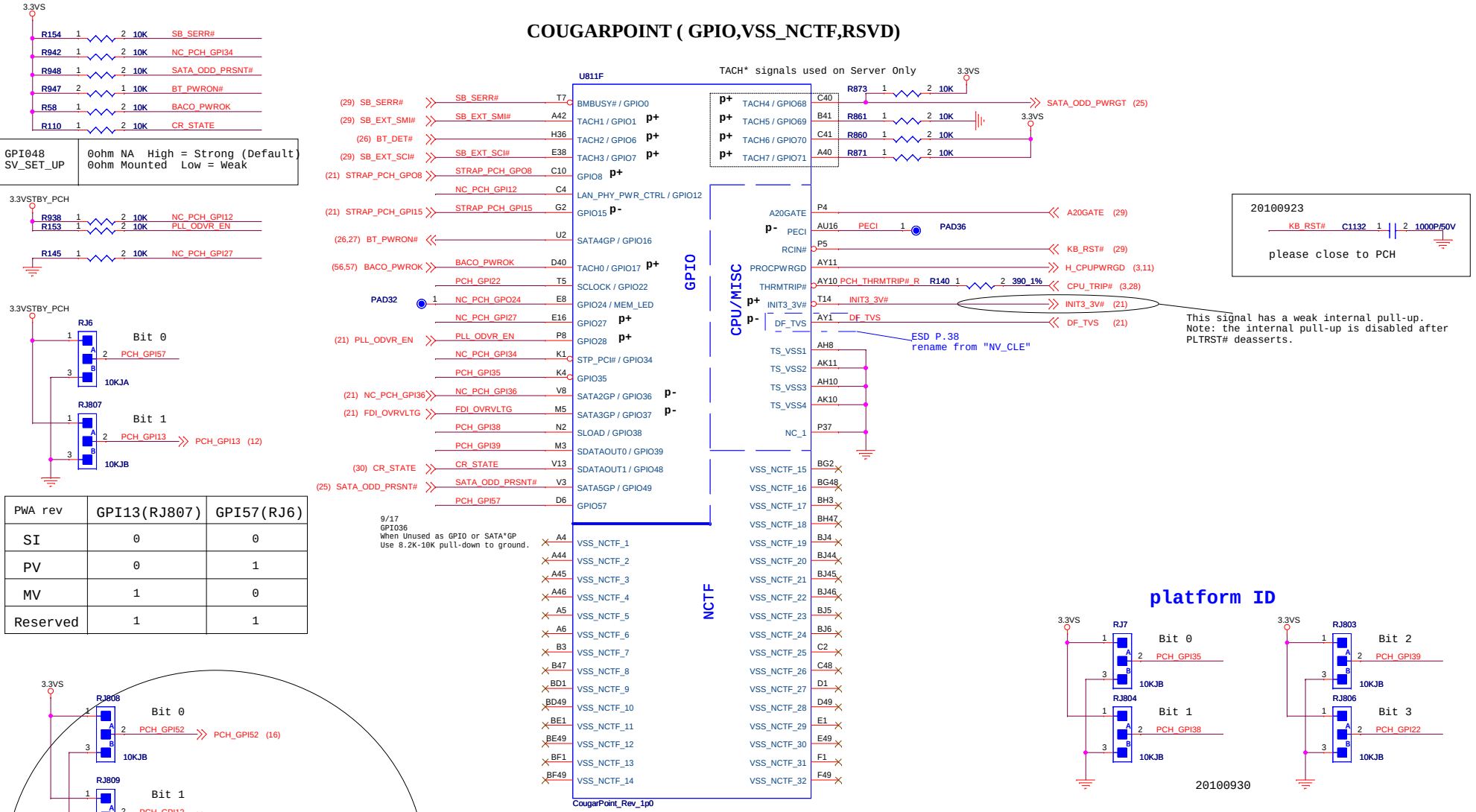
DB-USB Port 0 DB-USB Port 1	OC0
MB-USB Port 2 MB-USB Port 3	OC1
USB-WLAN Port 4	
USB-BT Port 5	
USB-FT Port 8	
USB-WEBCAM Port 9	
USB-TOUCH SCREEN PORT 10	
*USB-Port1 and port9 for BIOS debug tool	

1. 14 USB ports are not available on all Standard SKU's.
2. SFF USB ports are only 12 port

FLEX Computing

Project Name : H710DI1	Title : PCH_5/10_PCI_USB_NVRAM
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 16 of 63

COUGARPOINT (GPIO,VSS_NCTF,RSVD)



PWA rev	GPI13(RJ807)	GPI57(RJ6)
SI	0	0
PV	0	1
MV	1	0
Reserved	1	1

DC or QC HM65 or HM67	GPI12(RJ809) Bit 1	GPI52(RJ808) Bit 0
DC CPU(35W) HM65 PCH	0	0
DC CPU(35W) HM67 PCH	0	1
QC CPU(45W) HM67 PCH	1	0
QC CPU(45W) HM67 PCH	1	1

RJ806	RJ803	RJ804	RJ7	platform	platform ID	SI	PV	
0(B)	0(B)	0(B)	0(B)	Grant 1.0 SG w/ AMD Seymour & Intel Graphic (Beats)	0x1656			
0(B)	0(B)	0(B)	1(A)	Grant 1.0 SG w/ AMD Whistler & Intel Graphic (Beats)	0x1657	SKU4		
0(B)	0(B)	1(A)	0(B)	Grant 1.0 UMA (Beats)	0x1658	SKU2		
0(B)	0(B)	1(A)	1(A)	Grant 1.0 SG w/ AMD Seymour & Intel Graphic (non Beats/Dolby)	0x3581	SKU3		
0(B)	1(A)	0(B)	0(B)	Grant 1.0 SG w/ AMD Whistler & Intel Graphic (non Beats/Dolby)	0x3582			
0(B)	1(A)	0(B)	1(A)	Grant 1.0 UMA (non Beats/Dolby)	0x3583	SKU1		
0(B)	1(A)	1(A)	0(B)	Bogart 1.0 SG w/ AMD Seymour & Intel Graphic+Subwoofer(Beats)	0x1659	SKU5,6		
0(B)	1(A)	1(A)	1(A)	Bogart 1.0 SG w/ AMD Whistler & Intel Graphic+Subwoofer(Beats)	0x165A	SKU7,8		

FLEXComputing

Project Name : H710DI1	Title : PCH_6/10_CPU_GPIO_VSS_RSD	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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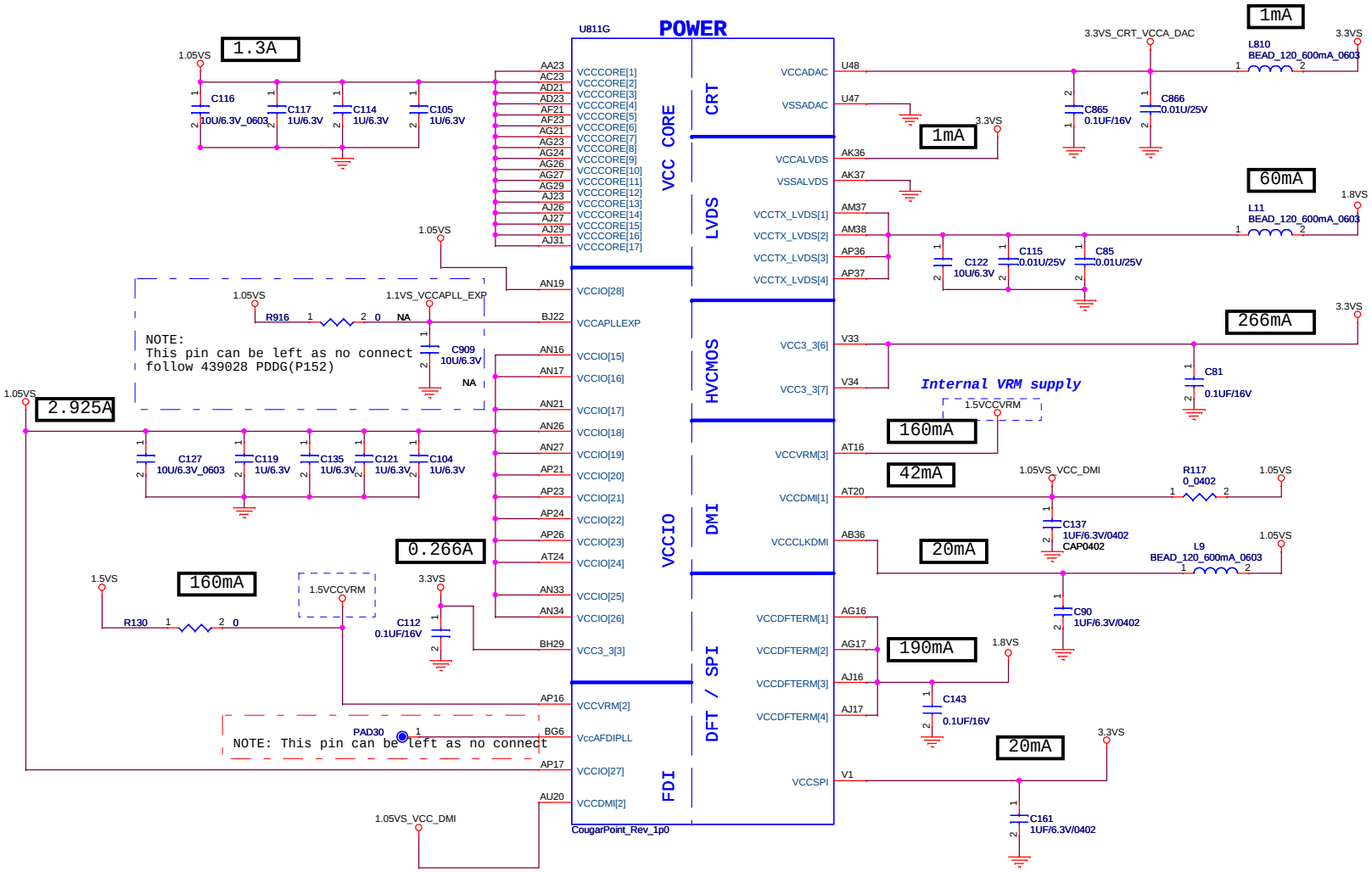
COUGARPOINT (POWER)



Project Name : H710DI1	Title : PCH_7/10_POWER 1
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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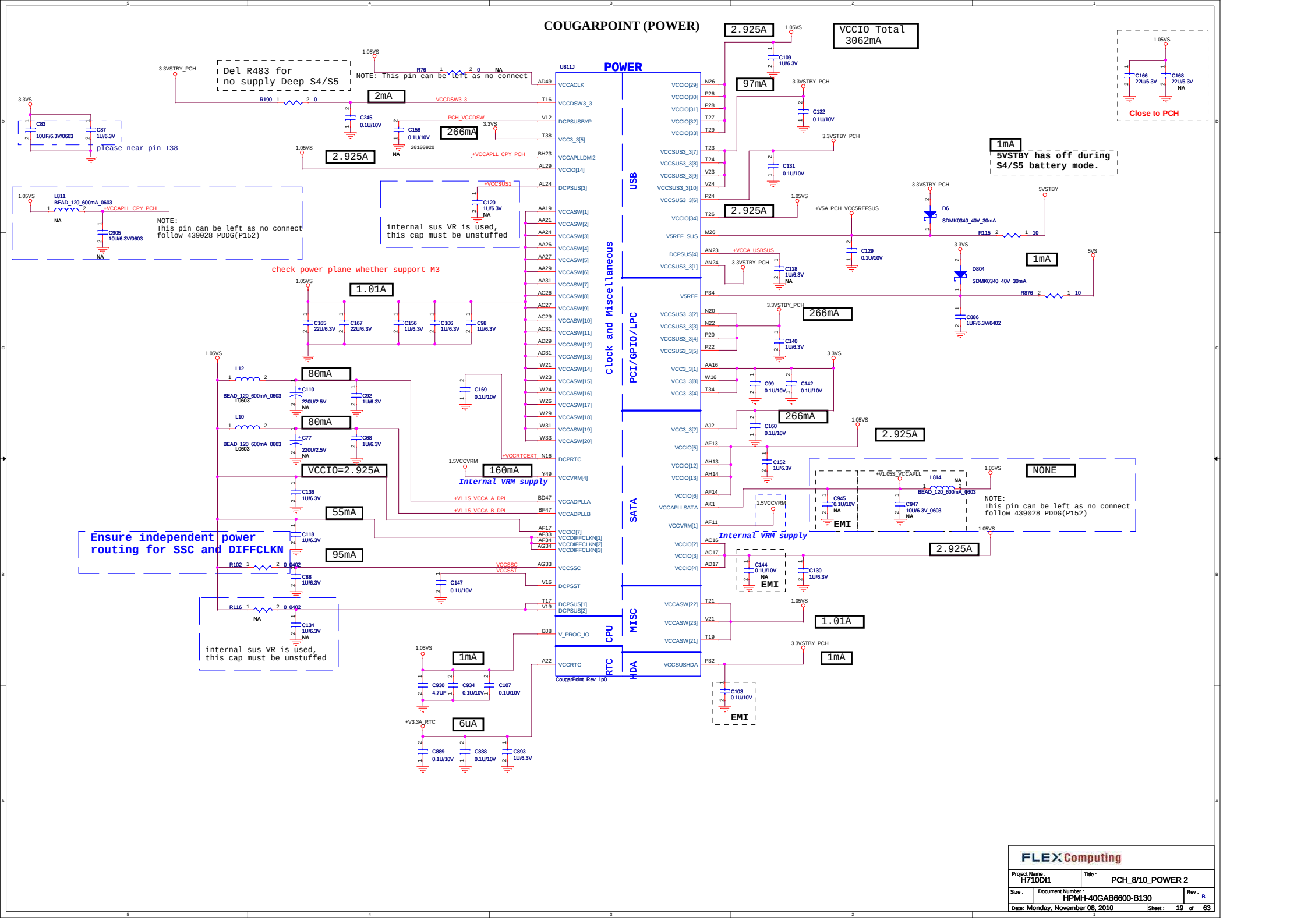
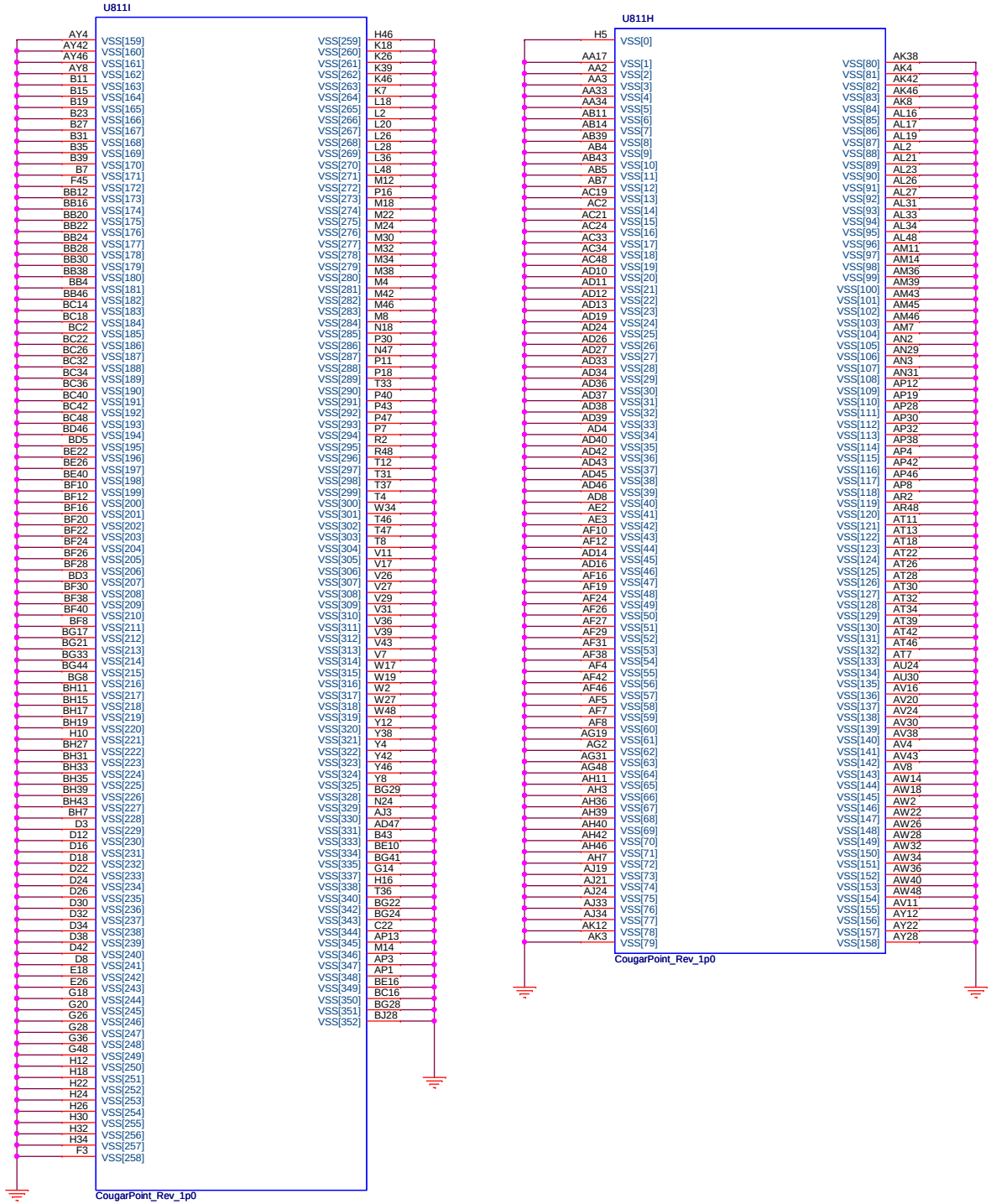
FLEX Computing

COUGARPOINT (POWER)



COUGARPOINT (GND)



FLEXComputing

Project Name : H710DI1	Title : PCH_9/10_GND	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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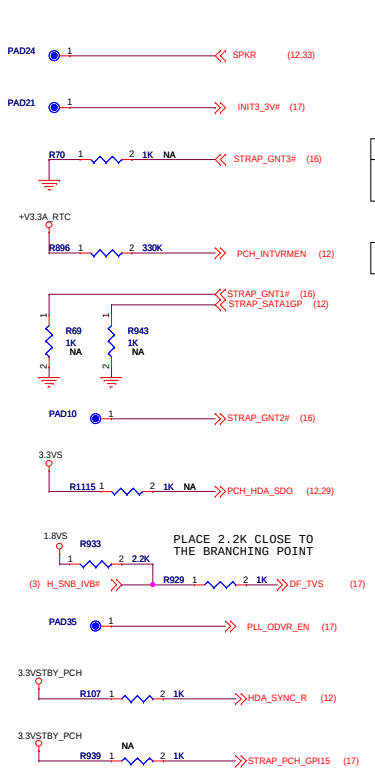
Signal	Usage	When Sampled	Internal PULL	Comment
SPKR	No Reboot	Rising edge of PWROK	Internal PD (The internal PD is disabled after PLTRST# de-asserts)	H: If the signal is sampled high, this indicates that the system is strapped to the No Reboot mode L: Cougar Point will disable the TCO Timer system reboot feature (Chipset Config Registers: Offset (3410h:Bit 5). **Default**
INIT3_3V#	Reserved	Rising edge of PWROK	Internal PU (The internal PU is disabled after PLTRST# de-asserts)	This signal should not be pulled low
GNT[3]#/ GPIO[55]	Top-Block Swap Override	Rising edge of PWROK	Internal PU (The internal PU is disabled after PLTRST# de-asserts)	H: Top Block Swap Mode disabled **Default** L: If the signal is sampled low, this indicates that the system is strapped to the Top Block swap mode
INTVRMEN	Integrated 1.05 V VRM Enable / Disable	Always	NA	H: Integrated 1.05V VRMs enabled **Default** This signal should always be External pulled high L: Integrated 1.05V VRMs disabled
GNT1#/ GPIO51/ SATA1GP/ GPIO19	Boot BIOS Strap bit [1] BBS[1] Boot BIOS Strap bit[0] BBS[0]	Rising edge of PWROK Rising edge of PWROK	Internal PU (The internal PU is disabled after PLTRST# de-asserts) Internal PU (The internal PU is disabled after PLTRST# de-asserts)	GNT1# SATA1GP Boot BIOS Location 0 0 LPC 0 1 Reserved 1 0 PCI 1 1 SPI **Default**
GNT2#/ GPIO53	ESI Strap (Server Only)	Rising edge of PWROK	Internal PU (The internal PU is disabled after PLTRST# de-asserts)	H: Should not be pulled low for desktop and mobile **Default** ESI compatible mode is for server platforms only. L: Configures DMI for ESI compatible operation
HDA_SDO	Flash Descriptor Security Override/ ME Debug Mode	Rising edge of RSMRST#	Internal PD	H: If sampled high,the Flash Descriptor Security will be overridden. L: If strap is sampled low, (Default) the security measures defined in the Flash Descriptor will be in effect. This signal should not be pulled high
DF_TVS	DMI and FDI Tx/ Rx Termination Voltage	Rising edge of PWROK	Internal PD	The internal pull-down is disabled after PLTRST# deasserts
GPIO28	On-Die PLL Voltage Regulator	Rising edge of RSMRST# pin	Internal PU	H: The On-Die PLL voltage regulator is enabled when sampled high **Default** L: When sampled low the On-Die PLL Voltage Regulator is disabled
HDA_SYNC	On-Die PLL Voltage Regulator Voltage Select	Rising edge of RSMRST# pin	Internal PD	H: On-Die PLL VR is supplied by 1.5 V **Default** L: On-Die PLL VR is supplied by 1.8 V
GPIO15	TLS Confidentiality	Rising edge of RSMRST# pin	Internal PD The weak internal pull-down is disabled after RSMRST# deasserts	H: Intel ME Crypto TLS cipher suite with confidentiality L: Intel ME Crypto Transport Layer Security (TLS) cipher suite with no confidentiality **Default**
L_DDC_DATA	LVDS Detected	Rising edge of PWROK	Internal PD The internal pull-down is disabled after PLTRST# deasserts.	H:LVDS is detected **Default** L:LVDS is not detected
SDVO_CTRLDATA	Port B Detected	Rising Edge of PWROK	Internal PD (The internal PD is disabled after PLTRST# de-asserts)	H:Port B is detected L:Port B is not detected **Default**
DDPC_CTRLDATA	Port C Detected	Rising edge of PWROK	Internal PD (The internal PD is disabled after PLTRST# de-asserts)	H: Port C is detected L: Port C is not detected **Default**
DDPD_CTRLDATA	Port D Detected	Rising edge of PWROK	Internal PD (The internal PD is disabled after PLTRST# de-asserts)	H: Port D is detected L: Port D is not detected **Default**
DSWVRMEN	Deep S4/S5 Well On-Die Voltage Regulator Enable	Always	NA	If strap is sampled high, the Integrated Deep S4/S5 Well (DSW) On-Die VR mode is enabled.
SATA2GP/ GPIO36	Reserved	Rising edge of PWROK	Internal PD (The internal pull-down is disabled after PLTRST# deasserts.)	NOTE: This signal should not be pulled high when strap is sampled.
SATA3GP/ GPIO37	Reserved	Rising edge of PWROK	Internal PD (The internal pull-down is disabled after PLTRST# deasserts.)	NOTE: NOTE: This signal should not be pulled high when strap is sampled.
GPIO8	Reserved	Rising edge of RSMRST#	Internal PU (Pull-up is disabled after RSMRST# is deasserted.)	NOTE: This signal should not be pulled low



NO REBOOT	
NA	Low=Disable(Default)
MOUNTED	High=Enable

A16 swap override Strap	
STP_A16OVR	Low = A16 swap override High = Default

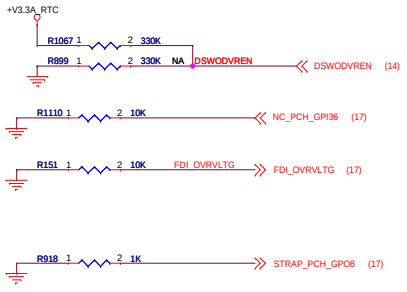
INTVRMEN- Integrated SUS 1.05V VRM Enable

Flash Descriptor Security Overide		
	NA	Low=Disable(Default)
PCH_HDA_SDO	MOUNTED	High=Enable

DMI & FDI Termination Voltage	
DF_TVS	Set to Vss when LOW Set to Vcc when HIGH

PLL ON DIE VR ENABLE	
PLL_ODVR_EN	ENABLE- UNSTUFF DISABLE-STUFF

HR only support 1.5 V
HDA_SYNC need PU to HDA SUS rail through 1k ohm for 451710_451710 SPEC



DSWODVREN - On Die DSW VR Enable	
Pull High	Enable (Default)
Pull Down	Disable

DMI TERMINATION VOLTAGE OVERRIDE	
GPIO36	LOW - Tx, Rx terminated to same voltage (DC Coupling Mode) DEFAULT

FDI TERMINATION VOLTAGE OVERRIDE	
GPIO37 (FDI_OVRVLTG)	LOW - Tx, Rx terminated to same voltage (DC Coupling Mode) DEFAULT

GPIO8 Integrated Clock Chip Enable
High : Disable Low : Enable(default)

FLEXComputing

Project Name : H710DI1	Title : PCH_10/10_STRAP	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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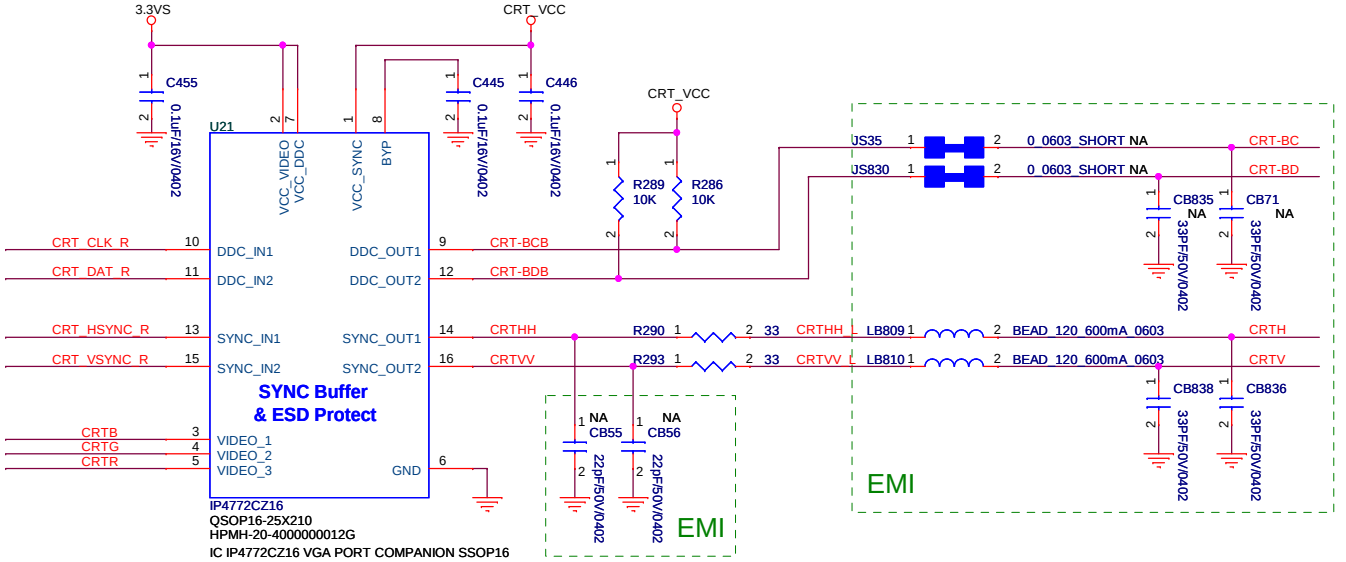
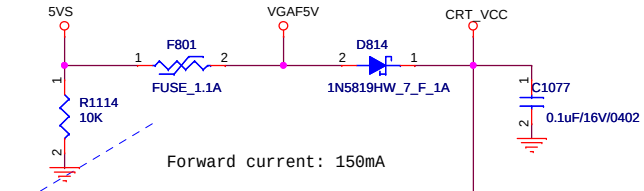
D-Sub



5V/1.1A

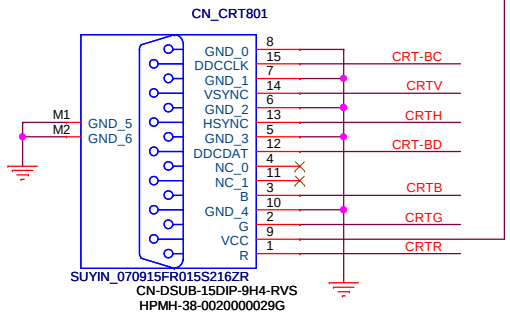
for HDMI Conn

for CRT Conn

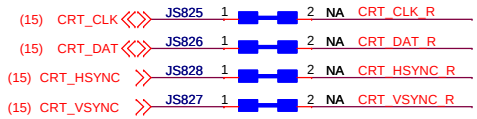


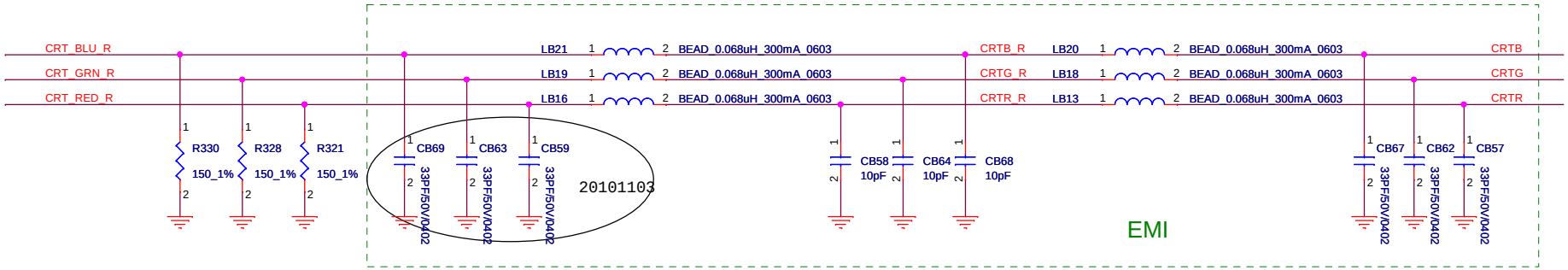
ESD rating printing : 1.1A/5V

Check with Connector spec

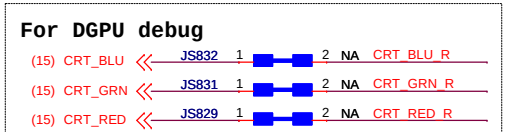


For DGPU debug





For DGPU debug



FLEXComputing

Project Name : H710DI1	Title : CRT CONN	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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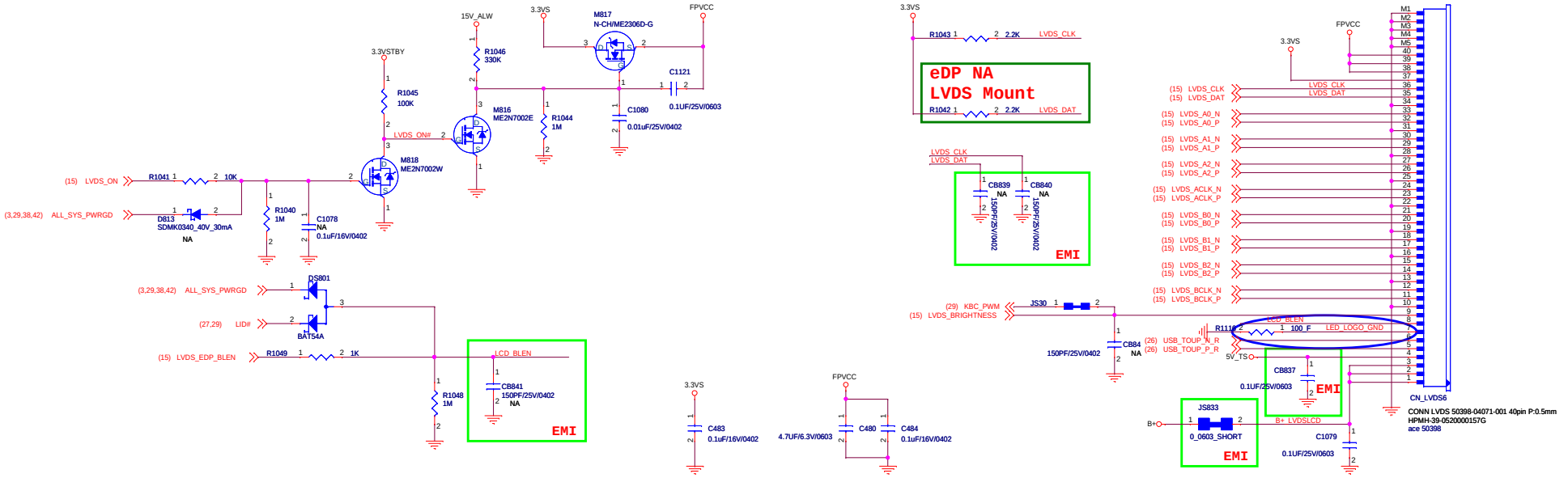

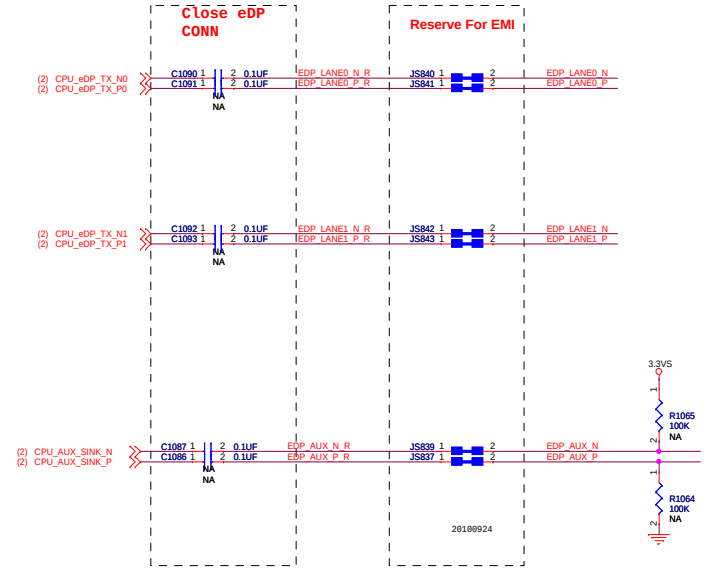

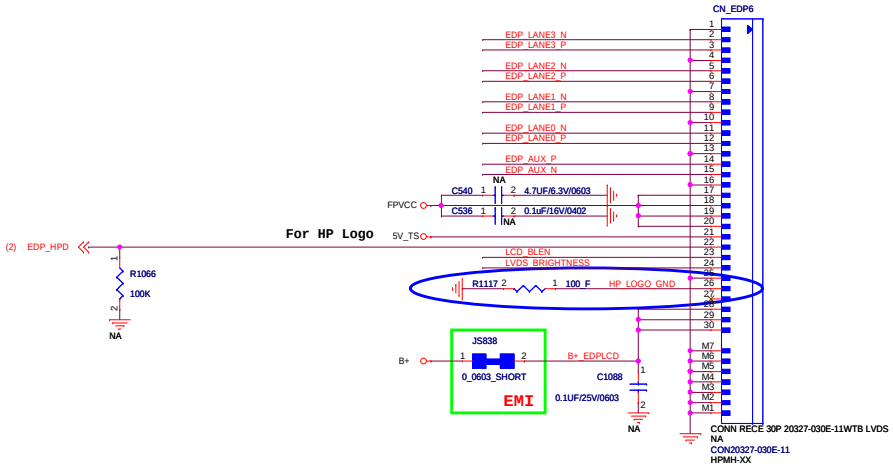

1. Check pin definition of eDP panel spec.
2. Confirm connector PN

FLEXComputing		
Project Name : H710DI1	Title : eDP_LVDS CONN_HP Logo	
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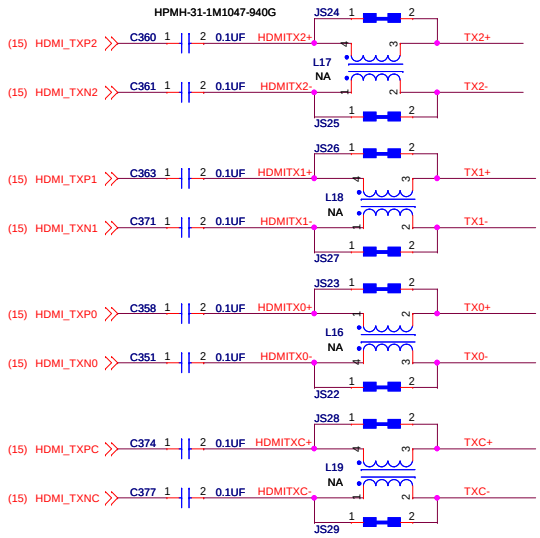
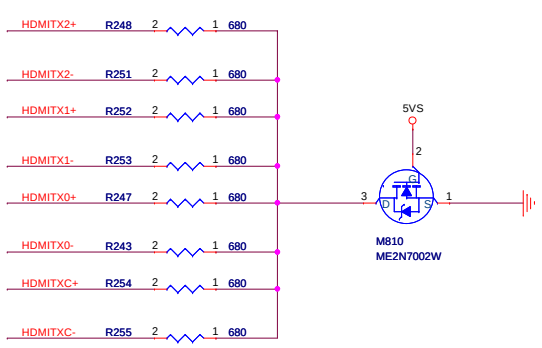
HDMI

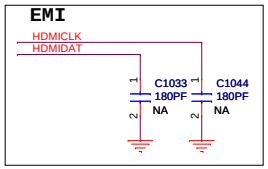
CLOSE to CN_HDMI1

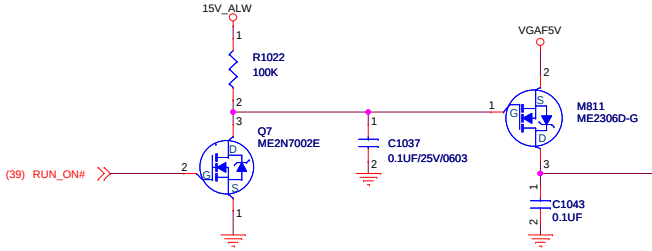
HPMH-32-4000000104G

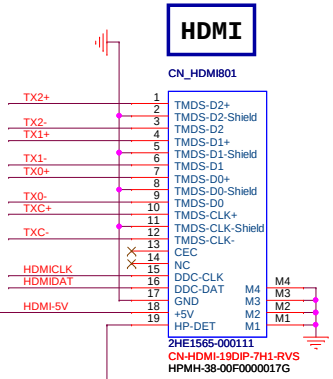
Intel Huron River: 680 ohm
AMD Danube: 715 ohm
AMD Sabine: 715 ohm

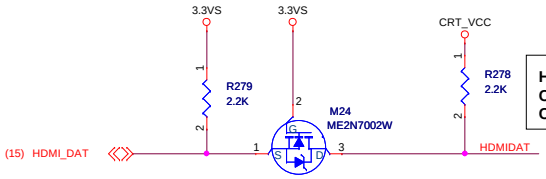




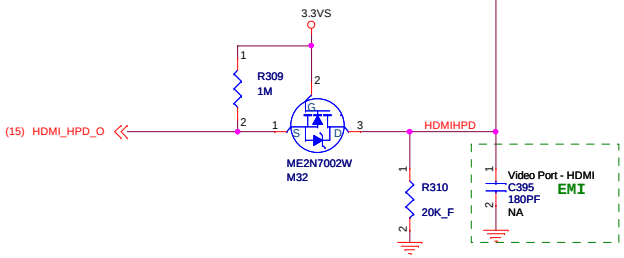


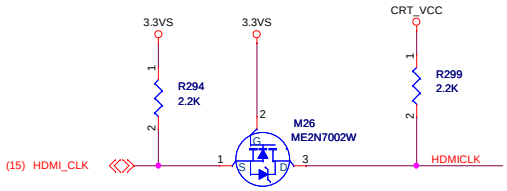






HDMI test
C1 -- Cp=45pf
C2 -- Cp=46pf (spec<50pf)





FLEX Computing

Project Name : H710DI1	Title : HDMI CONN
Size : Custom	Document Number : HPMH-40GAB6600-B130
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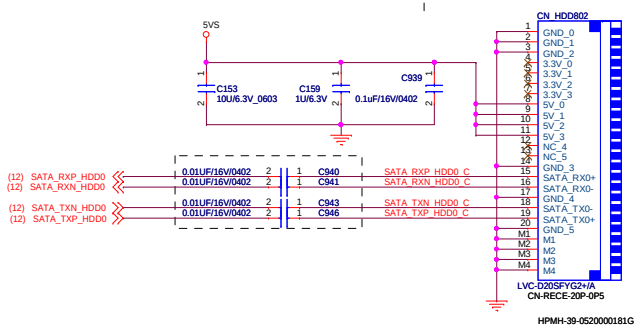
HDD

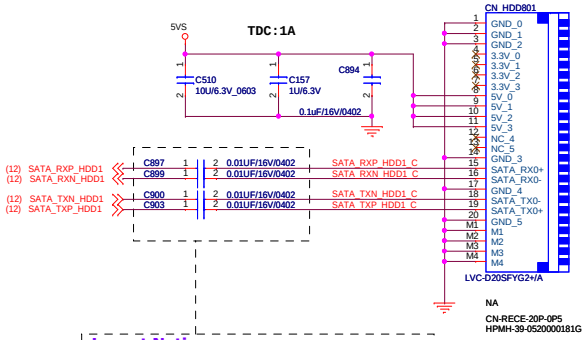
Layout Notice:
0.01uF series cap close to connector
follow SATA Signal Connection Checklist



2nd HDD

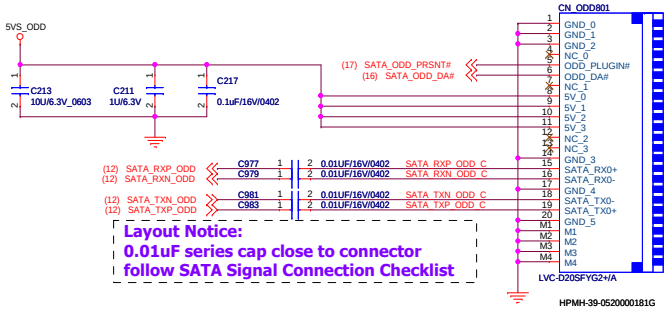
FOR 17" MB USE WTB CONNECTOR

CONN SPEC:0.3A/PIN



Layout Notice:
0.01uF series cap close to connector
follow SATA Signal Connection Checklist

ODD



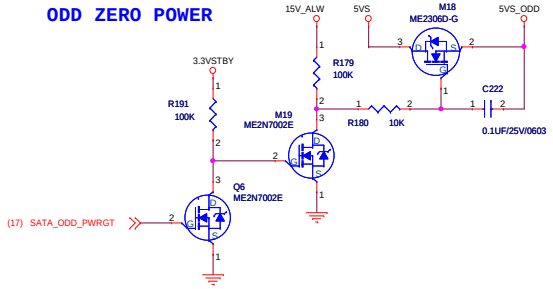
Layout Notice:
0.01uF series cap close to connector
follow SATA Signal Connection Checklist

TDC:2A

Change to Cable type Conn

ODD Zero Power

Check if meet max current!!

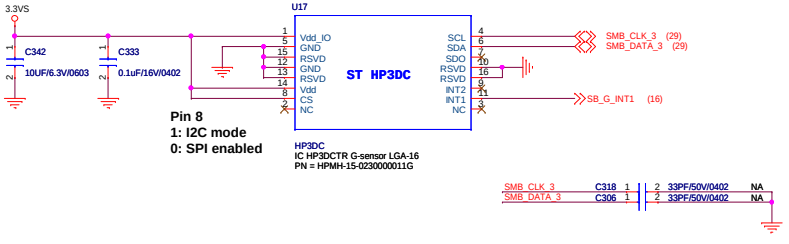


G-Sensor

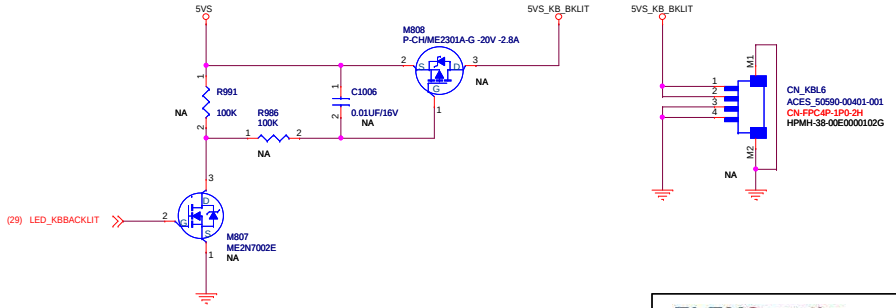
G-SENSOR

ST HP3DC

3.3VS
ADDR: 0011000x(30h) - SDO PD
ADDR: 0011010x(32h) - SDO NC
SINK: ??mA@VoL=0.33V(MAX)



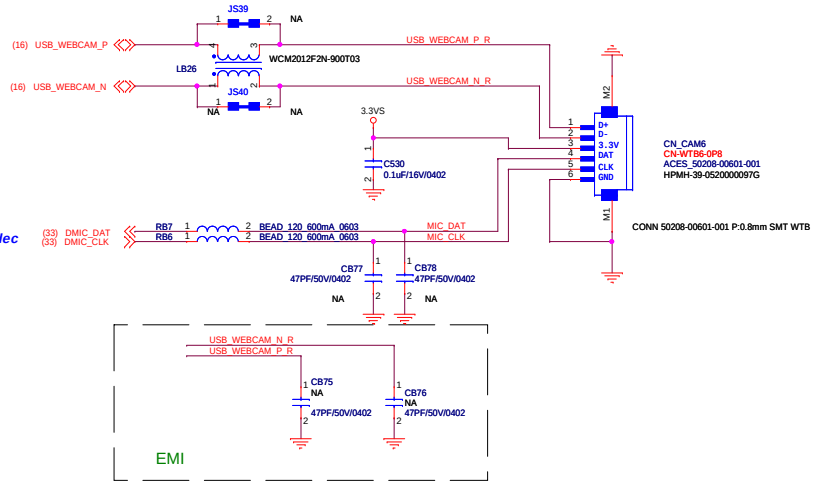
KB Backlit



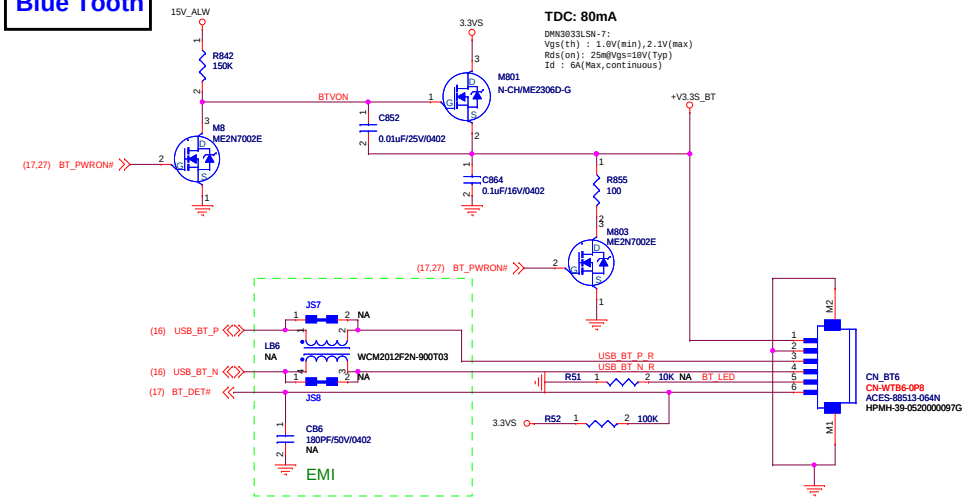
FLEXComputing

Project Name : H710DI1	Title : HDD_ODD_G-Sensor_KB BKL
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
Date: Monday, November 08, 2010	Sheet : 25 of 63

Web CAM



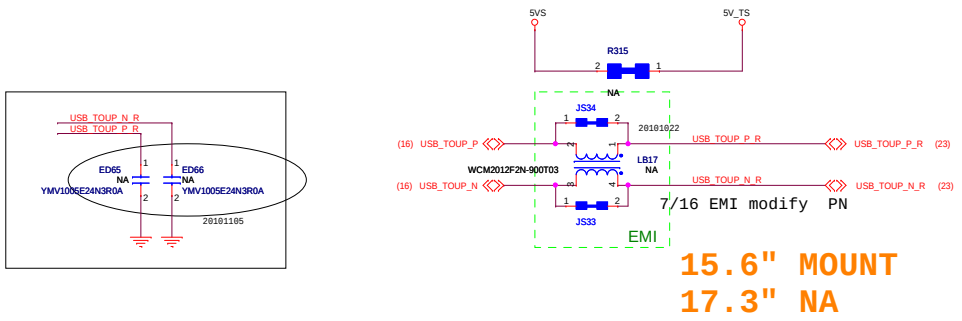
Blue Tooth



TouchScreen
(Module CONN)

Touch Screen power is 5V type

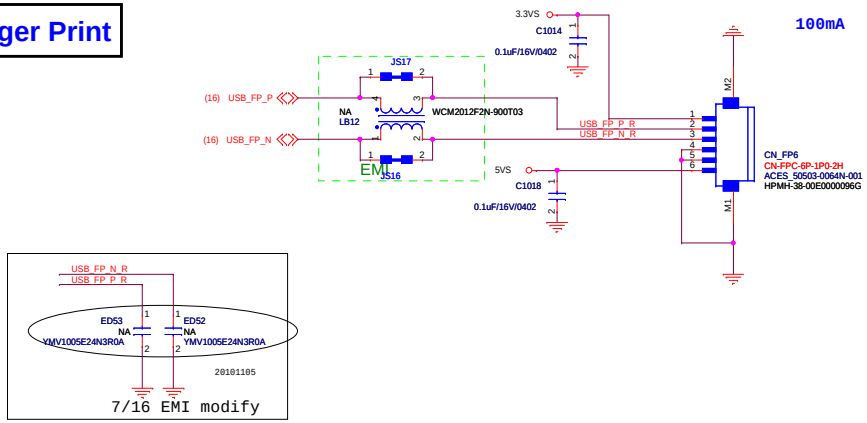
Peak 200mW 40mA



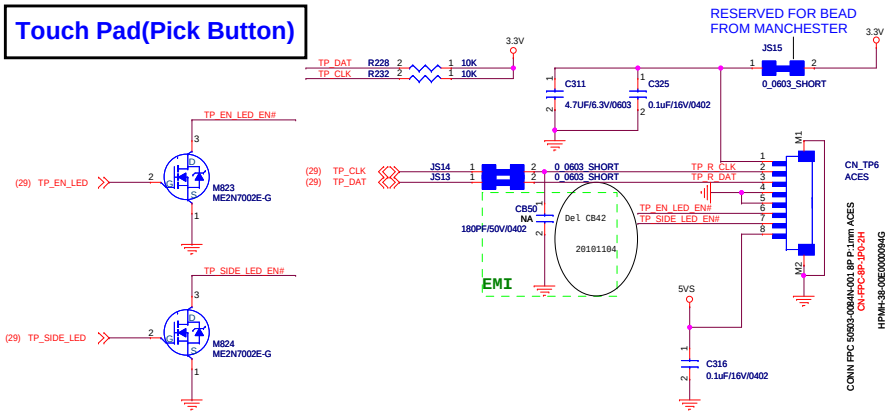
15.6" MOUNT
17.3" NA

Finger Print

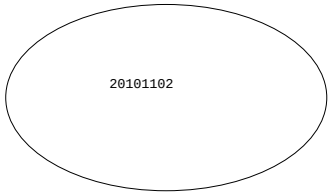
100mA



Touch Pad(Pick Button)



LID



FLEX Computing

Project Name : H710DI1	Title : WebCAM_BT_FP_TS_TP_LID
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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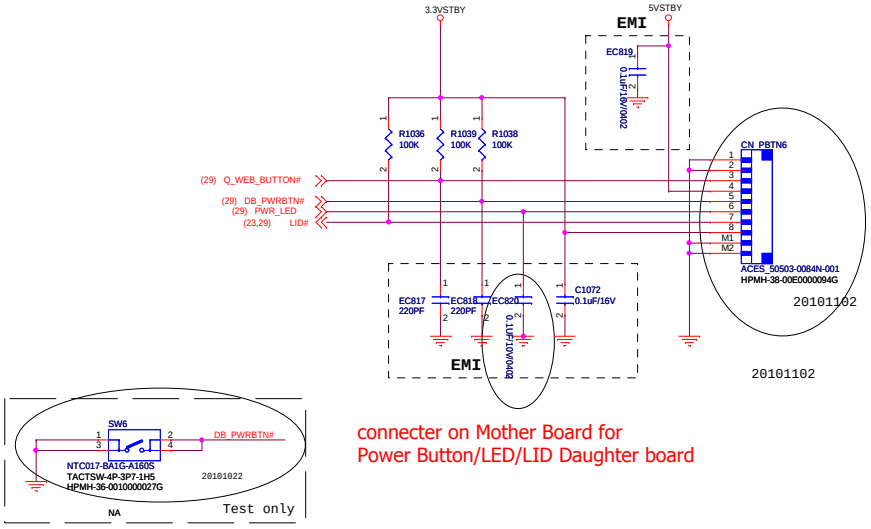
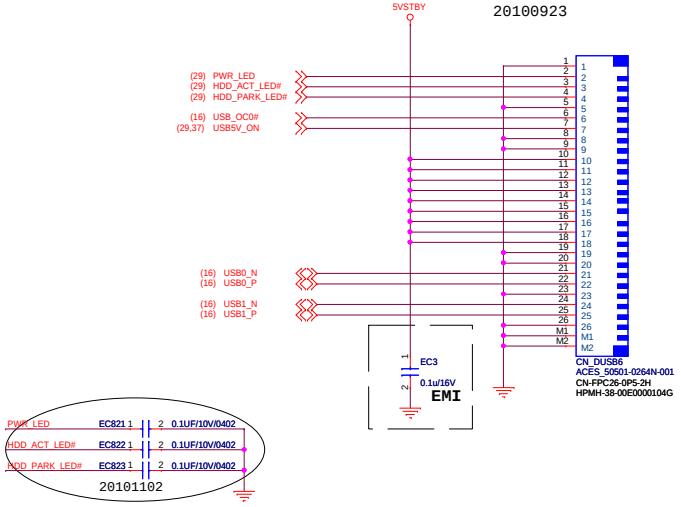
PWRBTN BOARD

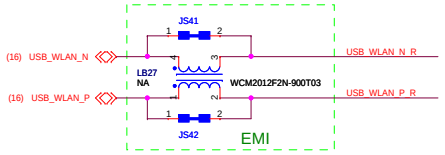


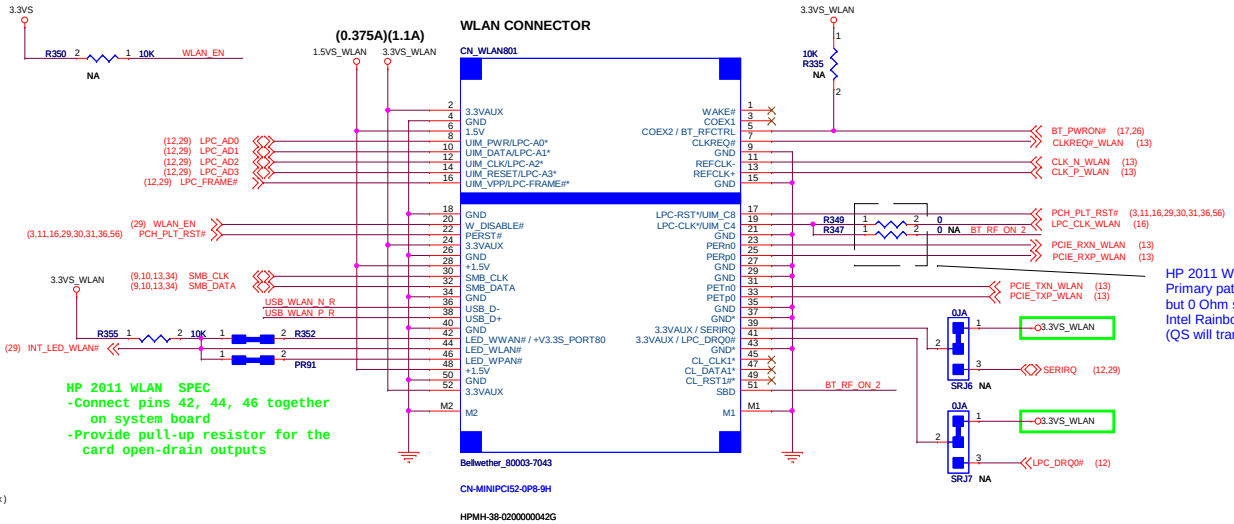
connecter on Mother Board for
Power Button/LED/LID Daughter board

USB BOARD



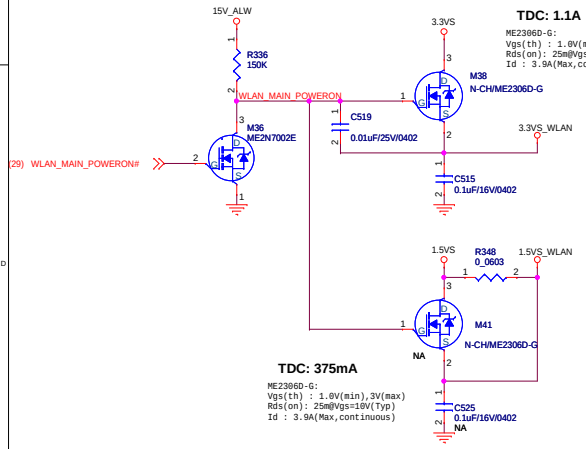
Mini-PCIE - WLAN (Half size)

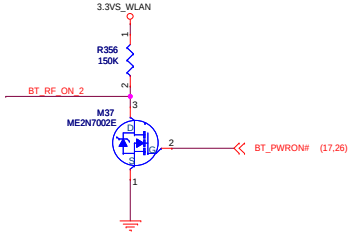


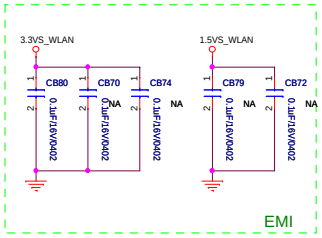


HP 2011 WLAN SPEC
-Connect pins 42, 44, 46 together on system board
-Provide pull-up resistor for the card open-drain outputs

HP 2011 WLAN SPEC 2'nd RF ON/OFF Pin Primary path is to implement it on pin 51, but 0 Ohm strap to pin 19 required for Intel Rainbow Peak ES2 cards use (QS will transition to pin 51).







FLEXComputing		
Project Name : H710D1	Title : MB to DB CONN_WLAN	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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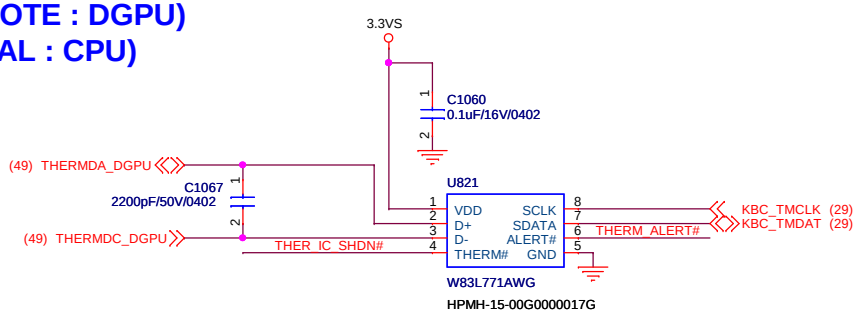
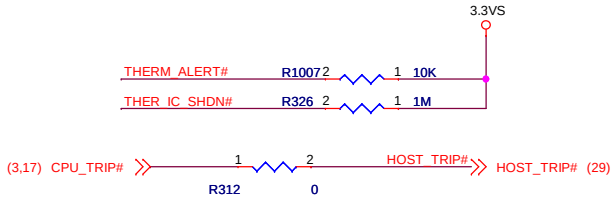
Thermal Sensor
(REMOTE : DGPU)
(LOCAL : CPU)



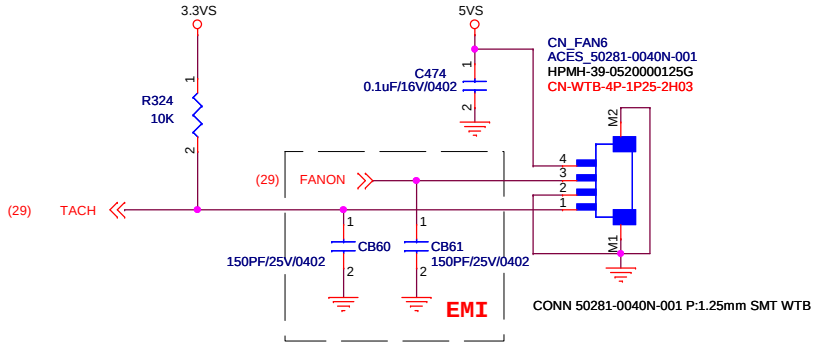
Place between CPU and VGA



THERMAL IC FOR CPU or DGPU

WINBOND	W83L771AWG	ODMH-15-00G0000017G 1001100x(98h)
ON SEMI	ADT7421ARMZ-REEL	???
GMT	G780P81U	???

FAN CONN



FLEXComputing

Project Name : H710DI1	Title : THERM IC_FAN	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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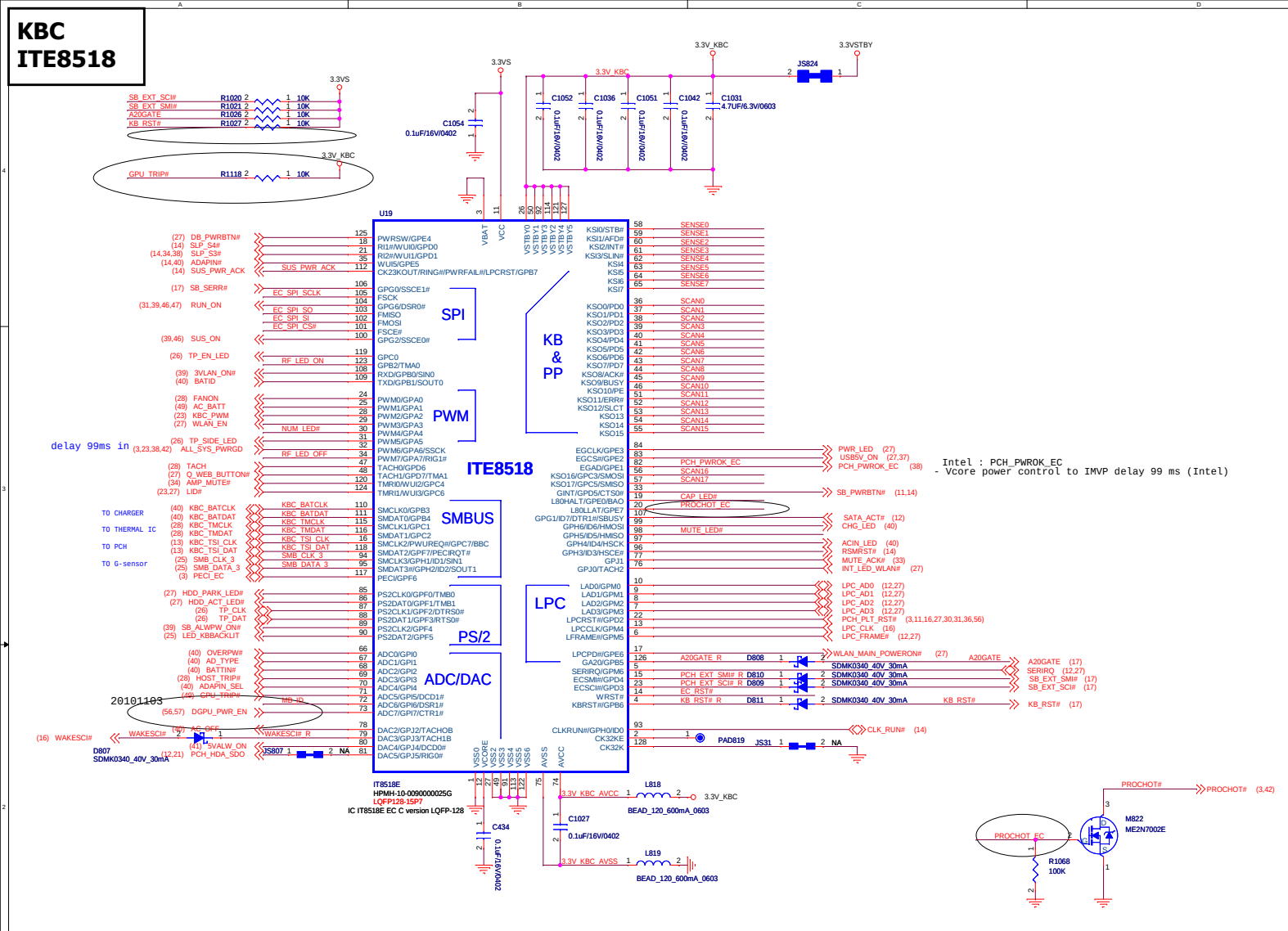
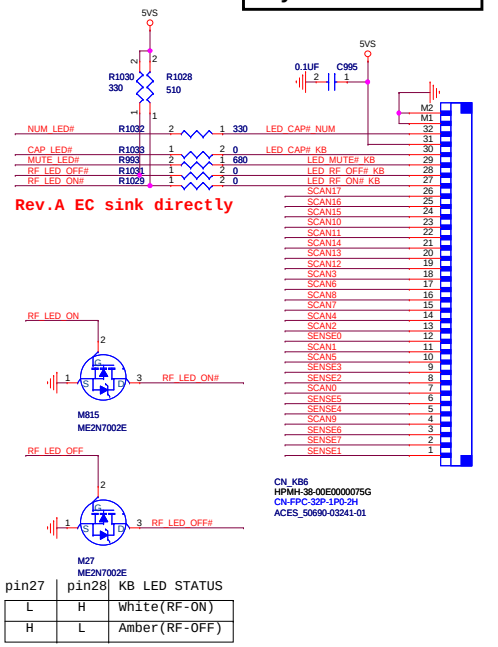
KBC ITE8518

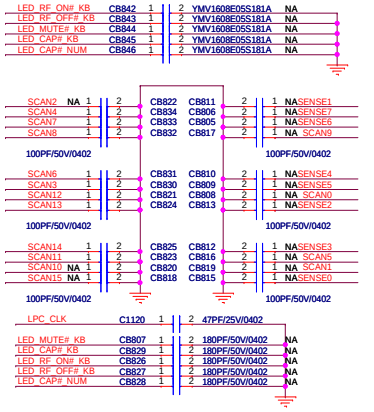


Keyboard Connector

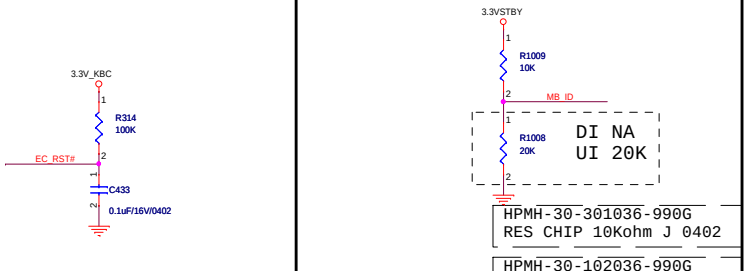


pin27	pin28	KB LED STATUS
L	H	White(RF-ON)
H	L	Amber(RF-OFF)

EMI

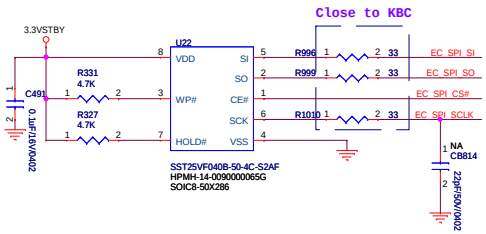


Board ID

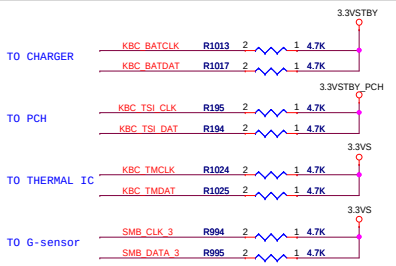


MB-ID		
3.3v	INTEL-DI	10K PULL UP
2.2v	INTEL-UI	10K PULL UP,20K PULL LOW
1.1v	AMD-DA	20K PULL UP,10K PULL LOW
0v	AMD-UA	10K PULL LOW

SPI ROM (512KB)



SM BUS



FLEX Computing

Project Name : H710DI1	Title : SPI_KBC(ITE8502E)
Size :	Document Number : HPMH-40GAB6600-B130 — Rev : B
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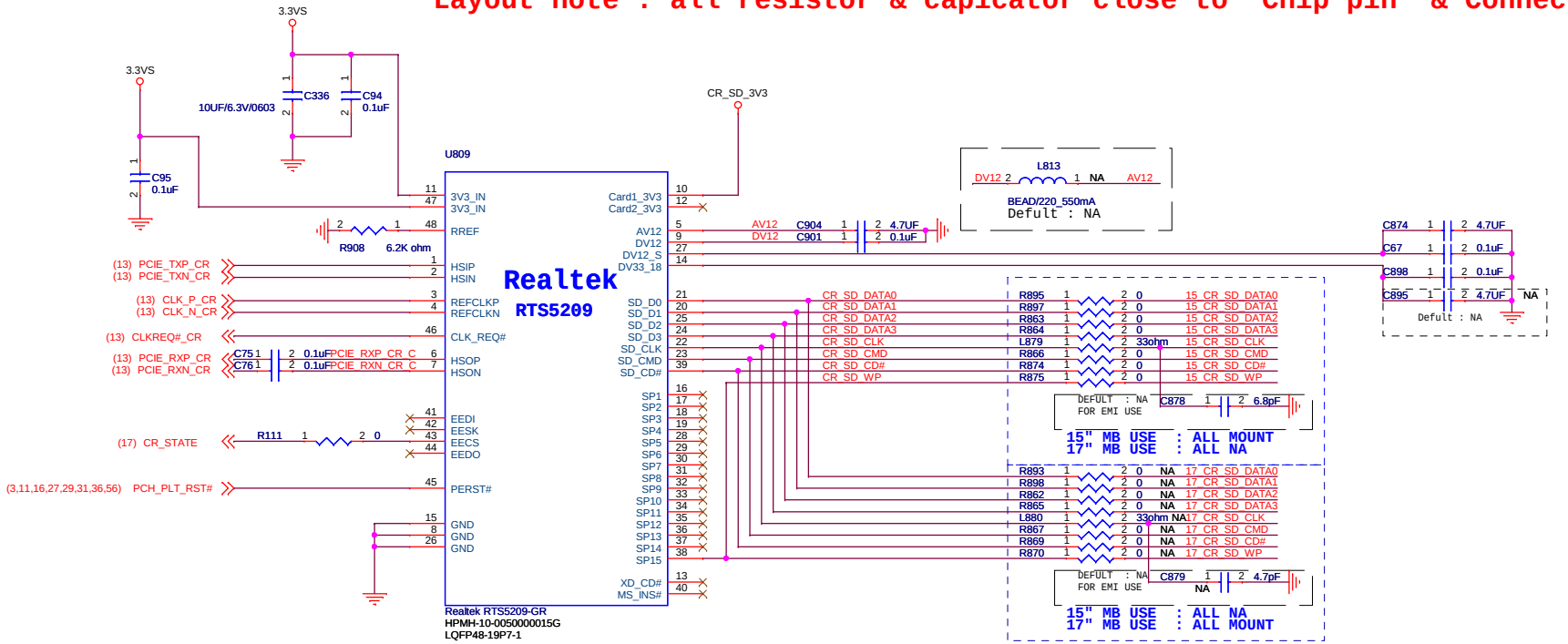
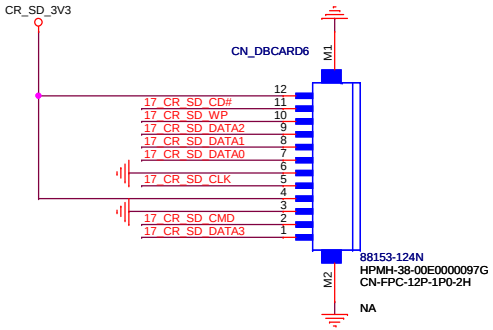
Card Reader

Layout note : all resistor & capicator close to Chip pin & Connector pin



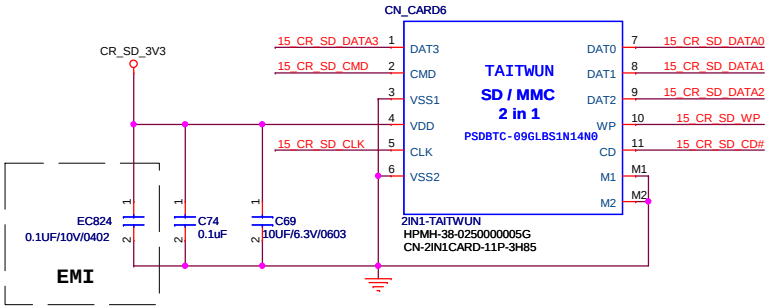
FOR 17" MB USE WTB CONNECTOR



FOR 15" MB ALL COMPONENT : NA

FOR 17" MB ALL COMPONENT : MOUNT

FOR 15" MB USE CardReader CONNECTOR



FOR 15" MB ALL COMPONENT : MOUNT

FOR 17" MB ALL COMPONENT : NA

FLEX Computing

Project Name : H710DI1	Title : Card Reader (R5U220)
Size :	Document Number : HPMH-40GAB6600-B130 — Rev : B
Date: Monday, November 08, 2010	Sheet : 30 of 63

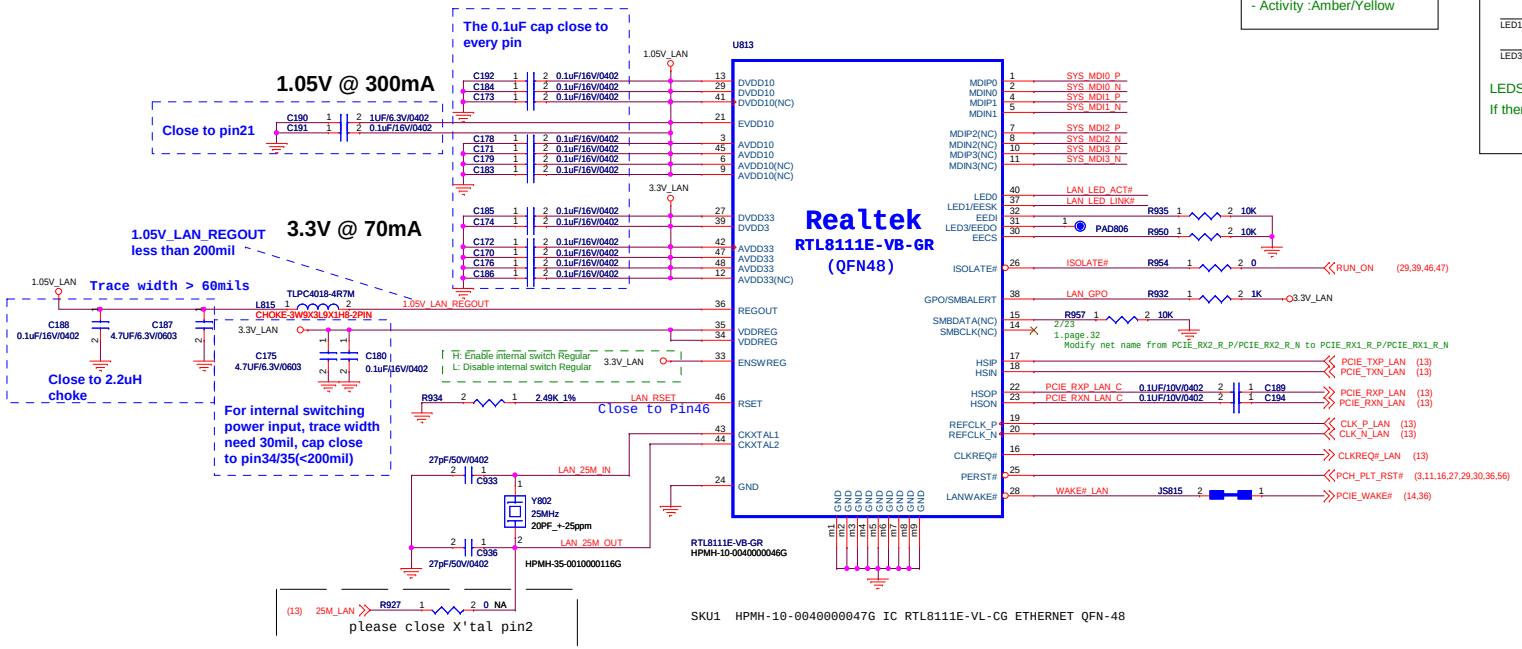
GBit LAN Controller

Mini-spec requirements:
10/100/1000 :
- Link :White
- Activity :Amber/Yellow

RTL8111E

LEDS1-0	00	01	10	11
LED0	ACT ALL	LINK ALL /ACT ALL	LINK10 /ACT ALL	LINK10 /ACT10
LED1	LINK100	LINK100	LINK100	LINK100 /ACT100
LED3	LINK1000	LINK1000	LINK1000	LINK1000 /ACT1000

LEDS1-0s initial value comes from the EEPROM
If there is no EEPROM, the default value is 11



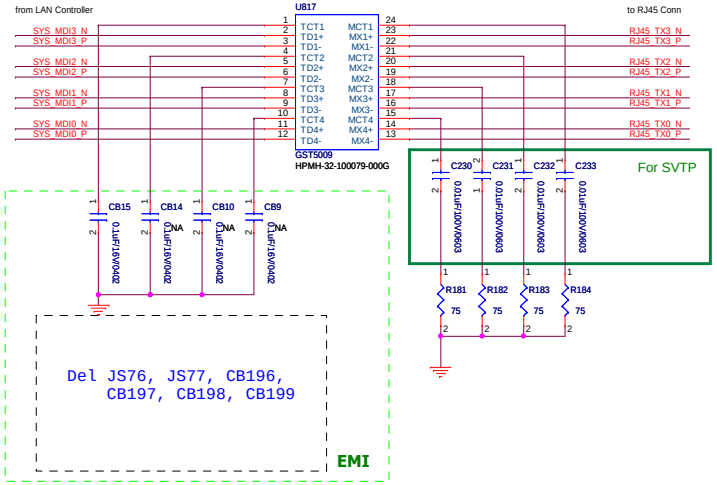
SKU1 HPMH-10-0040000047G IC RTL8111E-VL-CG ETHERNET QFN-48

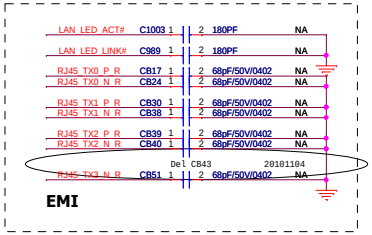
TRANSFORMER

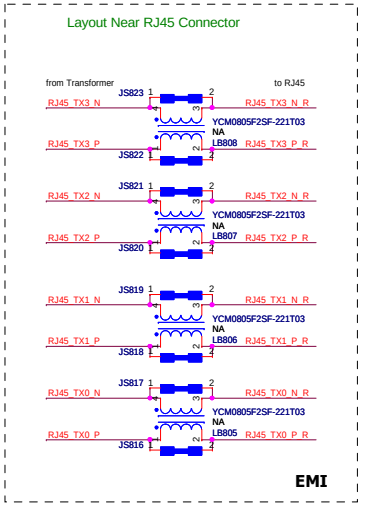
2009.09.22 ref. "RTL8102E_8111D 48PIN demo_board v200_2008.04.30"

Transformer :
Gbit P/N: 32-100079-000G(GST5009)
10/100 P/N: 32-0000000009G (TST1284)

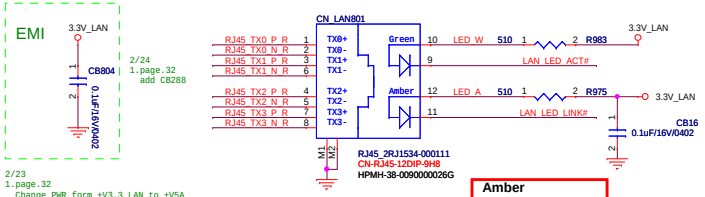
Layout near RJ45 Connector





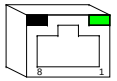


RJ45 Cable Connector



Amber
Vf=2V If =20mA
White
Vf=3.2V If =30mA

Reference:
RJ45 Phone Jack
Pin define:
1 TXD+0
2 TXD-0
3 TXD+1
4 TXD+2
5 TXD-2
6 TXD-1
7 TXD+3
8 TXD-3



SVTP_v4.03
2.6 - Ethernet Checklist - Rev C.xls

- Ch.3.1.4.4
Some older cheap RJ-45s only populate pins 1,2,3,6. 10/100 requires the other 4 pins for grounding. Gigabit Ethernet requires all 8 pins for data signals.

- Ch.3.1.4.13
Resistance from RJ-45 shell to any other chassis ground point (ohms) less than 1 ohm

- Ch.3.1.4.14 & Ch.3.1.4.15
Protection against non-standard power-over-Ethernet (PoE) : Resistance between pins 1,3 (TXD0P,TXD1P) and pins 4,7 (TXD2P,TXD3P) of the RJ-45 greater than 58K ohms.

FLEXComputing

Project Name : H710DI1	Title : RJ45_LAN (RTL8111E-VB-GR)
Size : C	Document Number : HPMH-40GAB6600-B130
Rev : B	
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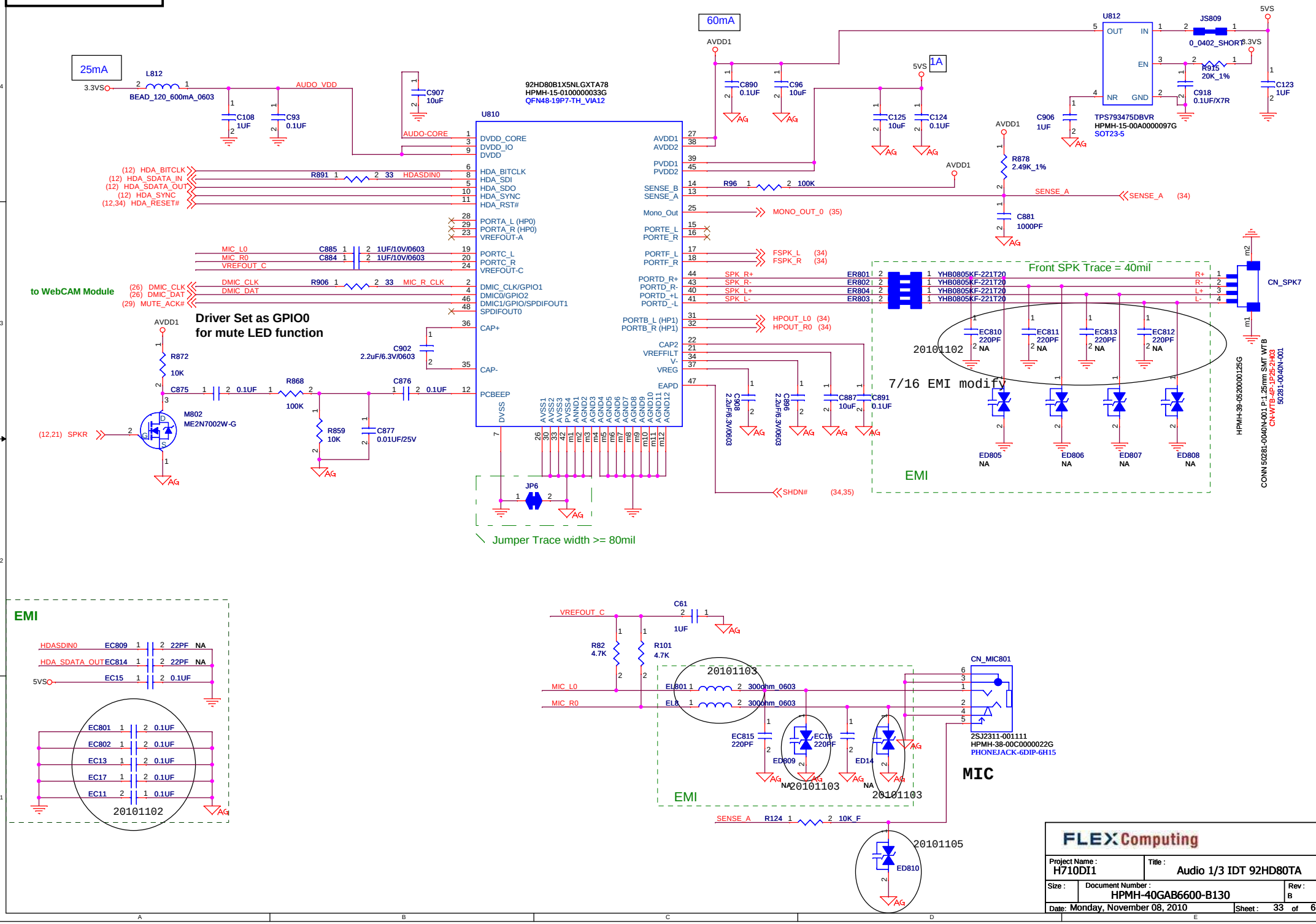
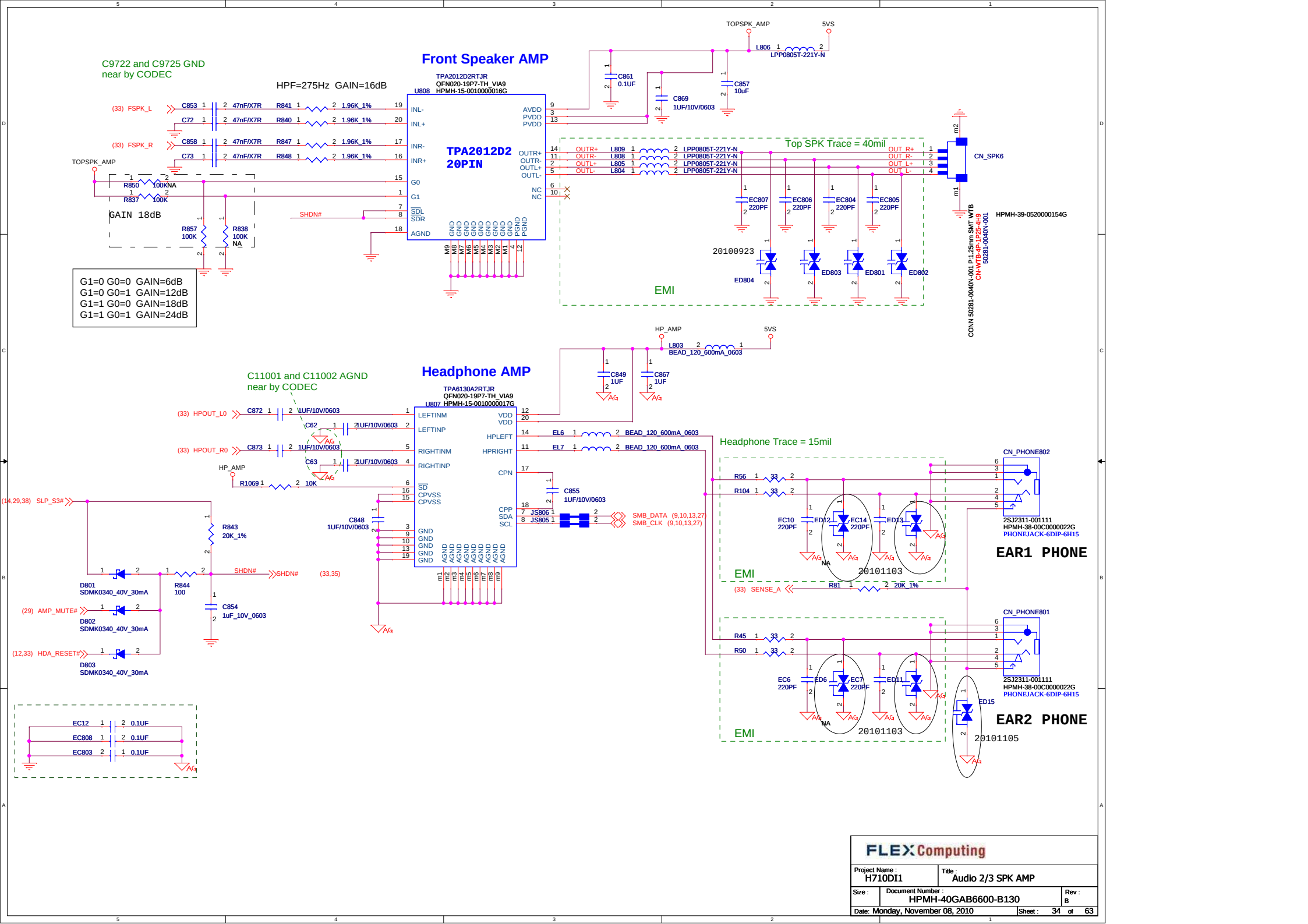
FLEX Computing

Project Name : H710DI1	Title : RESERVE	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
Date: Monday, November 08, 2010	Sheet : 32 of 63	

Audio CODEC



FLEX Computing			
Project Name : H710DI1	Title : Audio 1/3 IDT 92HD80TA		
Size :	Document Number : HPMH-40GAB6600-B130		Rev : B
Date: Monday, November 08, 2010		Sheet : 33 of 63	



FLEX Computing		
Project Name : H710DI1	Title : Audio 2/3 SPK AMP	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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If without supply Woofer all page NA

WOOFER AMP

HPA00836PWPR
HTSSOP28-25P6X220-TH
U805

HPA00836PWPR
28PIN

+PWR_SRC_AMP
B+
L807 LPP0805T-221Y-N

C850 1000PF
C863 0.1UF/25V
C856 4.7uF/25V
C817 4.7uF/25V
C862 1000PF
C823 0.1UF/25V
C824 4.7uF/25V
C818 4.7uF/25V
R1070 10_0805
C868 1UF/25V
R1071 10K

C9742 GND
near by CODEC
5VS
WOOFER_IN C844 1UF/10V/0603
R834 0
R835 0
C64 1UF/10V/0603
R821 100K NA
R825 100K NA
GAIN 20dB
R822 100K
R826 100K

G1=0 G0=0 GAIN=20dB
G1=0 G0=1 GAIN=26dB
G1=1 G0=0 GAIN=32dB
G1=1 G0=1 GAIN=36dB

C839 1UF/10V/0603
R1072 49.9K_F
R1073 28.7K_F
C1094 1UF/10V/0603
(33,34) SHDN#

INN
INP
GAIN0
GAIN1
GVDD
PLIMIT
SD
FAULT
NC
AGND

PVCCR
PVCCL
AVCC
BSN
OUTN
BSP
OUTP
GND
PGND

C840 0.1uF/25V
C843 0.1uF/25V
L8 LPP0805T-221Y-N
L7 LPP0805T-221Y-N
R827 10
R836 10
C828 470pF
C851 470pF

Woofer SPK Trace = 40mil
CN_WOF6
ACES_88266-040001
EC9 1000PF
EC8 1000PF
CN-WTB-2P-1P25-2H03
CONN 50214-00201-001 P:1mm SMT WTB
HPMH-39-0520000126G

Kevin modify-0909

AVDD1
VREF_EQ
R824 10K_F
R830 10K_F
C847 4.7uF/0603
C845 0.1UF
AG

(33) MONO_OUT_0
C846 1UF/10V/0603
R832 10K_F
C841 5600pF
R831 10K_F
C831 0.1UF
C830 100PF/50V/0402
U804A
TLV2464
C822 47nF

R814 30.1K_F
C819 47nF
R816 10K_F
C826 100PF/50V/0402
U804B
R815 10K_F
C821 47nF
IC TLV2464CPWR Audio AMP TSSOP-14

R819 60.4K_F
R818 60.4K_F
R820 30.1K_F
C827 47nF
R817 10K_F
C829 100PF/50V/0402
U804C
R813 10K_F
C825 47nF

C842 5600pF
R833 10K_F
C837 1UF/10V/0603
U804D
C838 100PF/50V/0402
WOOFER_IN

R823 0
NA

Always NA

FLEX Computing

Project Name : H710DI1	Title : Audio 3/3 WOOFER AMP	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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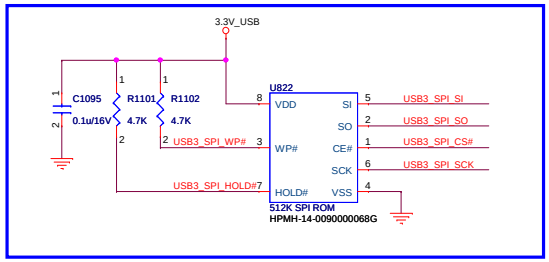
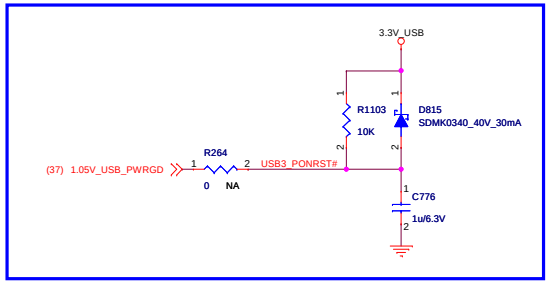
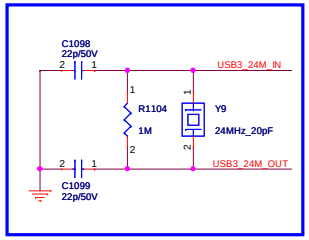
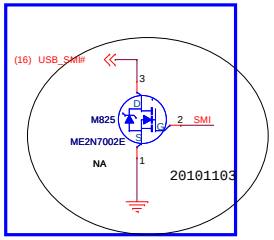
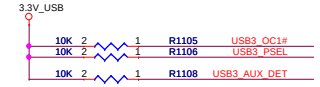
USB3.0 NEC uDP720200

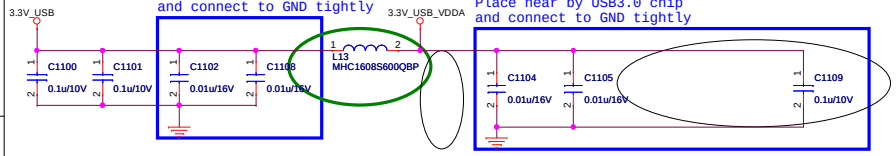


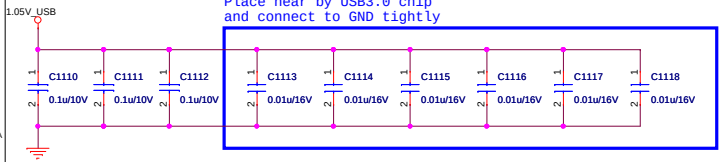


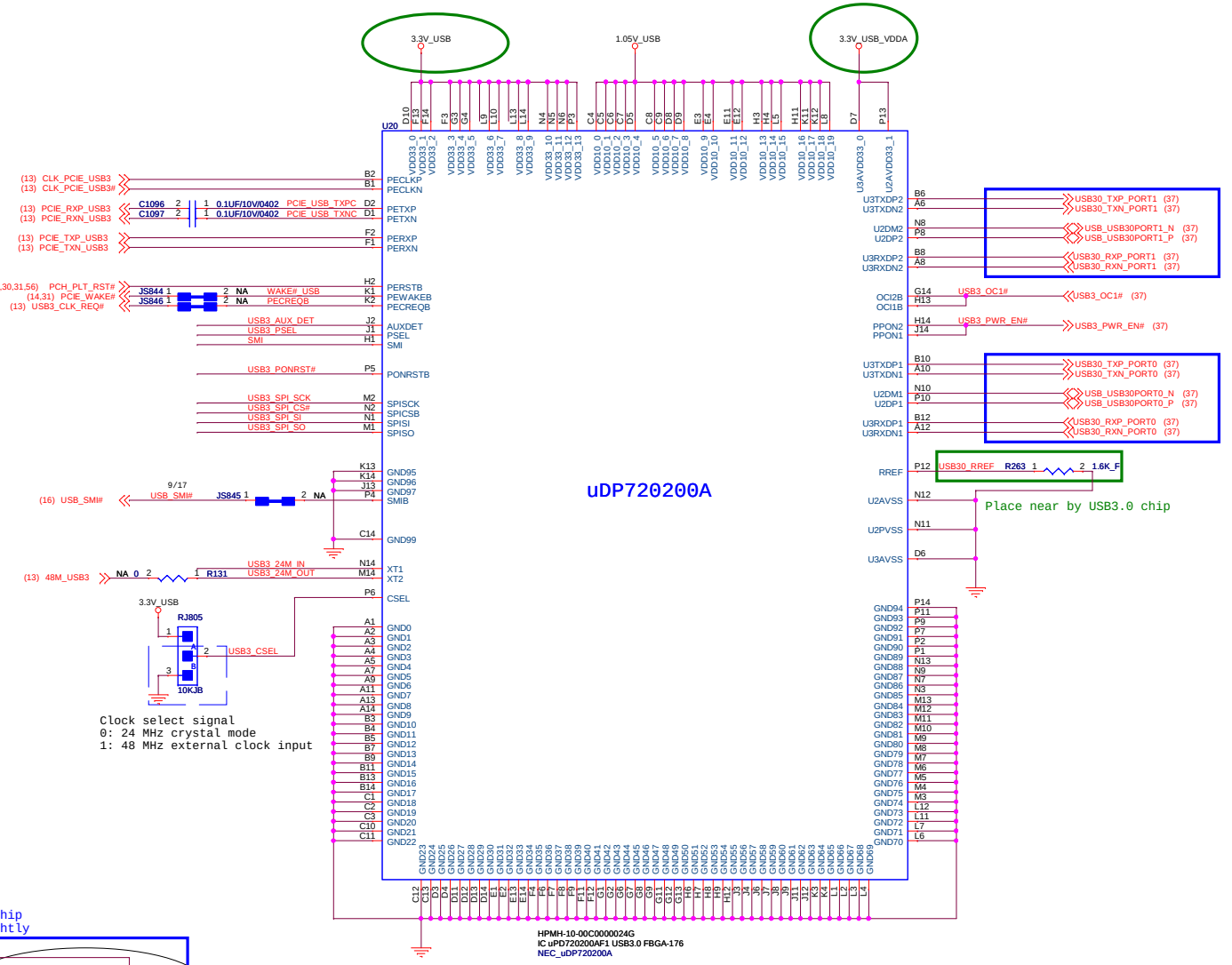












FLEX Computing			
Project Name : H710DI1	Title : USB30_uDP720200		
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B	
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7/14

USB 2.0 NA
USB 3.0 Mount

Correvtive the ESD link topology. 20100810

USB2.0 CONN USE HPMH-38-0040000060G
USB3.0 CONN USE HPMH-38-0040000065G

USB 2.0 2nd Source
HPMH-38-0040000078G
HPMH-38-0040000080G
HPMH-38-0040000087G

USB 3.0 2nd Source
HPMH-38-0040000085G
HPMH-38-0040000068G
HPMH-38-0040000088G

USB 2.0 NA
USB 3.0 Mount

Correvtive the ESD link topology. 20100810

USB2.0 CONN Main Source HPMH-38-0040000066G
USB3.0 CONN Main Source HPMH-38-0040000065G

USB3.0 3.3V

500mW / 3.3V
(0.151Amp)

20100921

USB3.0 1.05V_USB

593mW / 1.05V
(0.72Amp)

Vout=0.8*(R1+R2)/R2

USB 2.0 Mount
USB 3.0 NA

USB2.0 MOUNTED
USB3.0 NA

USB2.0 MOUNTED
USB3.0 NA

USB POWER SW

7/14 for USB3.0 and USB 2.0

7/14 USB 3.0 mount B
USB 2.0 mount B

2A

Don't delete this pull-down resistor for disable Power SW in G3.

7/14 for USB3.0 (A)and USB 2.0(B)

Project Name : H710DI1	Title : USB30_CNN/PWR_SW/1.1V/3.3V
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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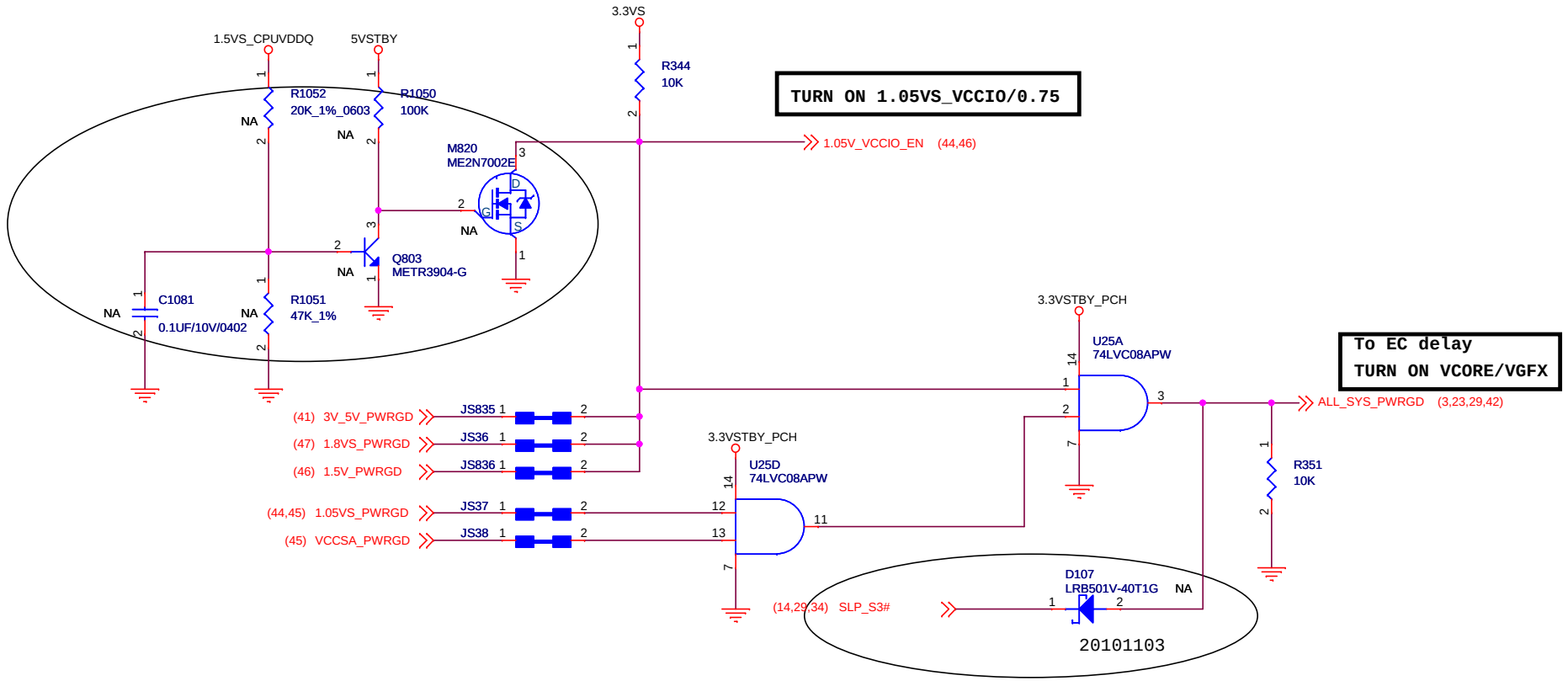
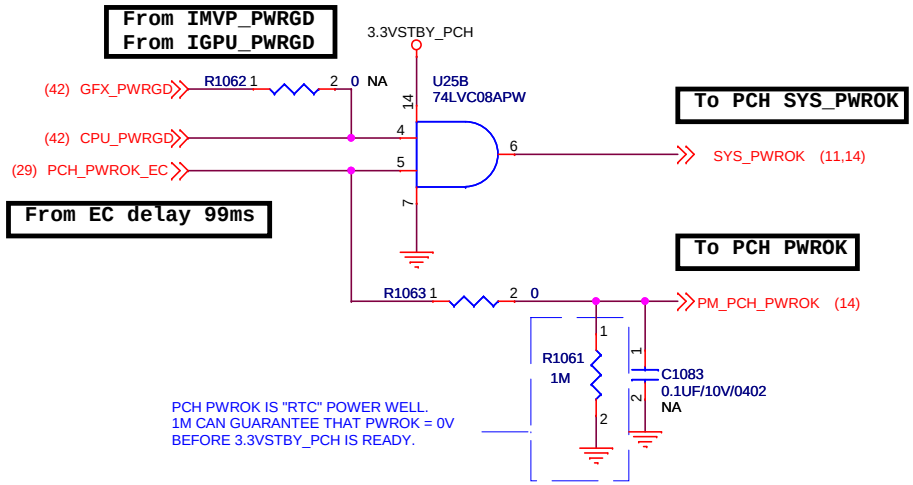
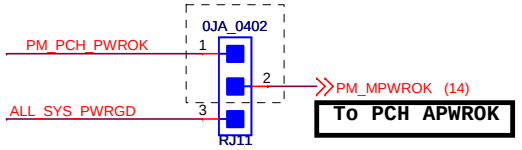
FLEXComputing

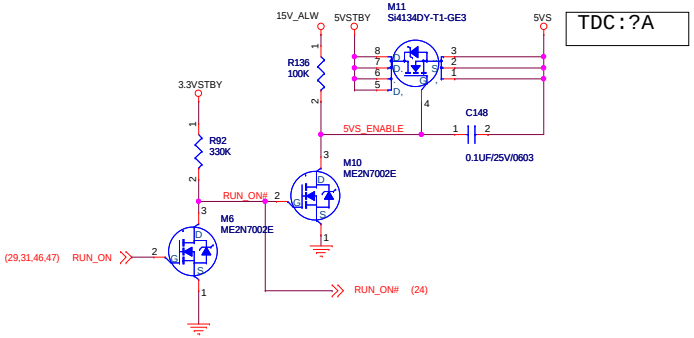




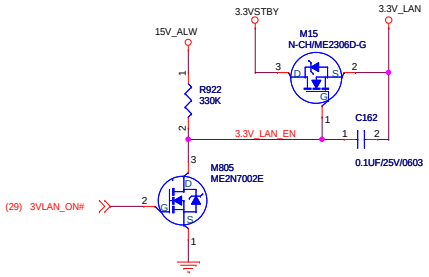


FLEX Computing

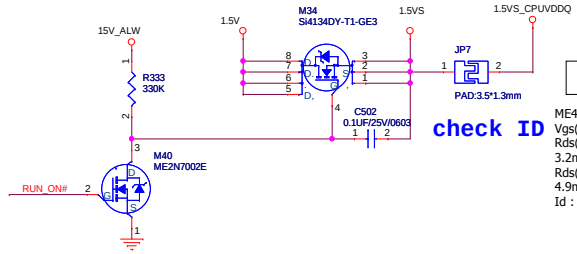
Project Name : H710DI1	Title : POWER_GOOD
Size : Custom	Document Number : HPMH-40GAB6600-B130
Rev : B	
Date: Monday, November 08, 2010	Sheet : 38 of 63



TDC:?A



TDC:0.3A

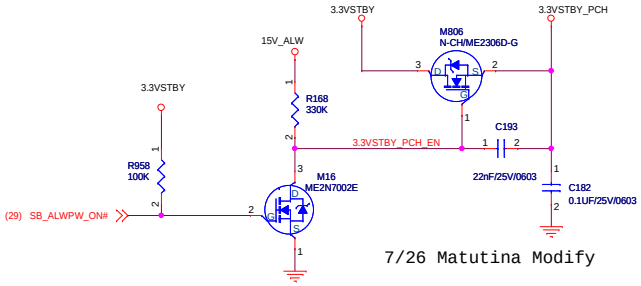


TDC:?A

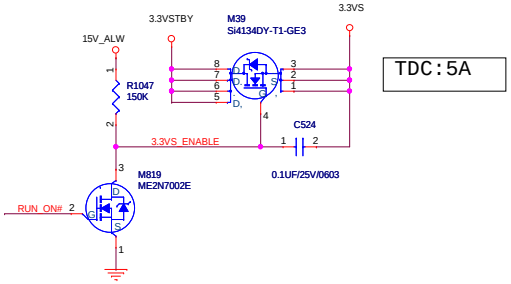
check ID

ME4626 :
Vgs(th): 3V(max)
Rds(on):
3.2m@Vgs = 10V (Max)
Rds(on):
4.9m@Vgs = 4.5V (Max)
Id : 23A

TDC:0.6A



7/26 Matutina Modify



TDC:5A

ME2306D:

Vgs(th) : 1.0V(min),3.0V(max)
Rds(on) : 31m@Vgs = 10V(MAX)
Rds(on) : 52m@Vgs = 4.5V(MAX)
Id : 3.9A(Max)

ME4894-G:

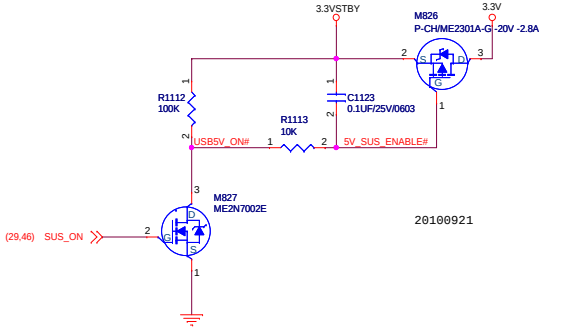
Vgs(th) : 1.0V(min),3.0V(max)
Rds(on) : 11.7m@Vgs = 10V (MAX)
Rds(on) : 18.2m@Vgs = 4.5V(MAX)
Id : 11.5A(Max)

ME2301A:

Vgs(th) : -0.9V(max)
Rds(on) : 75m@Vgs = -4.5V(MAX)
Id : -2.8A(Max)

3.3V

500mW / 3.3V

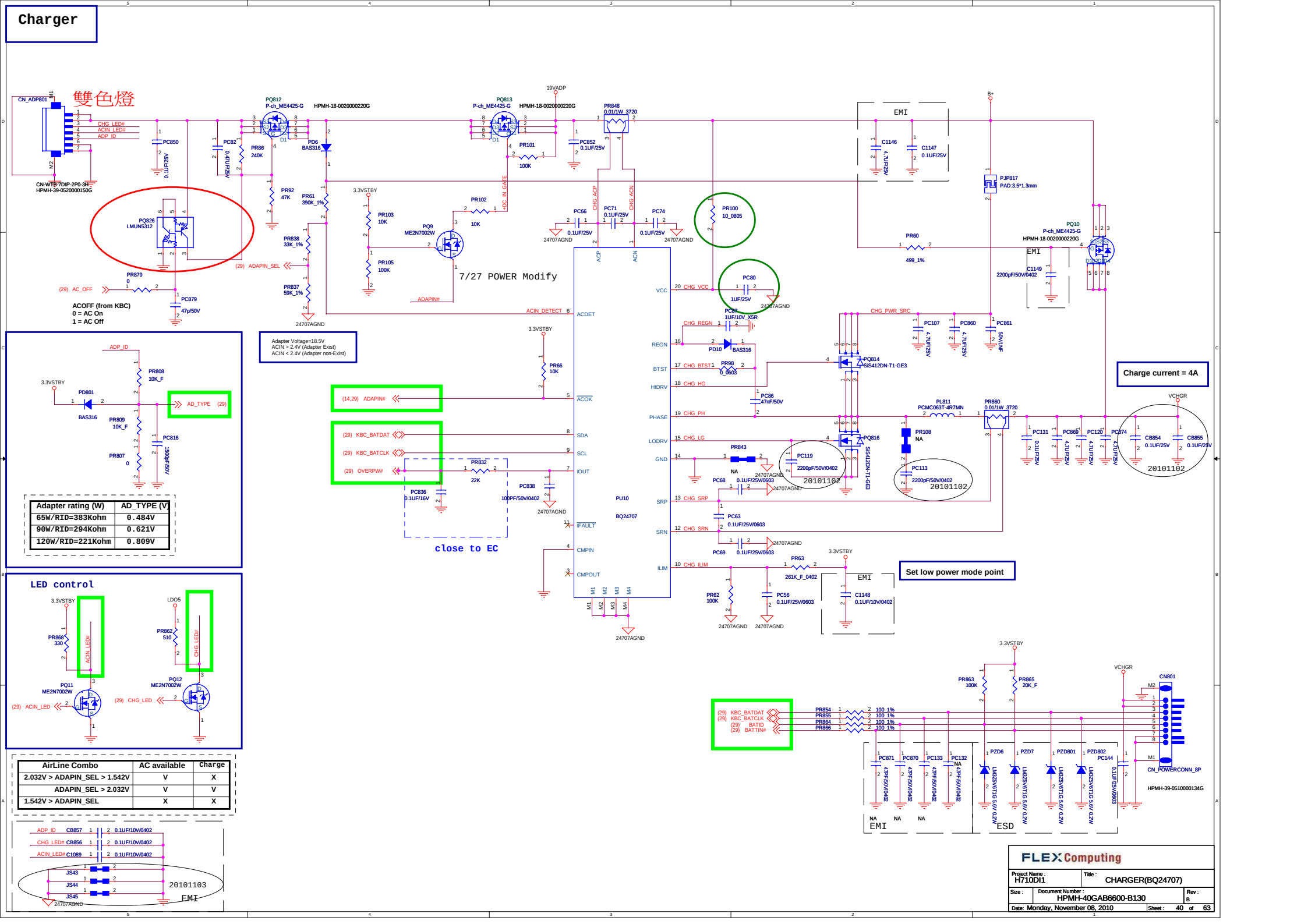


20100921

FLEX Computing

Project Name : H710DI1	Title : RUN_PWR & SUS_PWR
Size : Custom	Document Number : HPMH-40GAB6600-B130
Rev : B	
Date: Monday, November 08, 2010	Sheet : 39 of 63

Charger


雙色燈
CN_ADP801
CN-WTB-7DIP-2P0-3H
HPMH-39-0520000150G
CHG_LED#
ACIN_LED#
ADP_ID
PQ826
LMUN5312
PR879
0
(29) AC_OFF
PC879
47pf/50V
ACOFF (from KBC)
0 = AC On
1 = AC Off
PQ812
P-ch_ME4425-G
HPMH-18-0020000220G
PQ813
P-ch_ME4425-G
HPMH-18-0020000220G
PD6
BAS316
PC82
0.47UF/25V
PR86
240K
PR92
47K
PR838
33K_1%
PR837
59K_1%
PR61
390K_1%
(29) ADAPIN_SEL
24707AGND
19VADP
PR848
0.01/1W_3720
PR101
100K
PC852
0.1UF/25V
3.3VSTBY
PR103
10K
PR105
100K
PR102
10K
PQ9
ME2N7002W
ADAPIN#
DC_IN_GATE
CHG_ACP
CHG_ACN
PC66
0.1UF/25V
PC71
0.1UF/25V
PC74
0.1UF/25V
7/27 POWER Modify
PR100
10_0805
PC80
1UF/25V
PC81
1UF/10V_X5R
ACIN_DETECT
ACDET
ACP
ACN
ACOK
SDA
SCL
IOUT
IFAULT
CMPIN
CMPOUT
PU10
BQ24707
VCC
REGN
BTST
HIDRV
PHASE
LODRV
GND
SRP
SRN
ILIM
CHG_VCC
CHG_REGN
CHG_BTST
CHG_HG
CHG_PH
CHG_LG
CHG_SRP
CHG_SRN
CHG_ILIM
PD10
BAS316
PR98
0_0603
PC86
47nF/50V
PR843
NA
PC68
0.1UF/25V/0603
PC63
0.1UF/25V/0603
PC69
0.1UF/25V/0603
PR63
261K_F_0402
PC56
0.1UF/25V/0603
PR62
100K
PC119
2200pF/50V/0402
20101102
PQ814
SIS412DN-T1-GE3
PQ816
SIS412DN-T1-GE3
PR108
NA
PC113
2200pF/50V/0402
20101102
PL811
PCMC063T-4R7MN
PR860
0.01/1W_3720
CHG_PWR_SRC
PC107
4.7UF/25V
PC860
4.7UF/25V
PC861
50V/1NF
EMI
C1146
4.7UF/25V
C1147
0.1UF/25V
PJP817
PAD:3.5*1.3mm
B+
PR60
499_1%
PQ10
P-ch_ME4425-G
HPMH-18-0020000220G
C1149
2200pF/50V/0402
PC131
0.1UF/25V
PC865
4.7UF/25V
PC120
4.7UF/25V
PC874
4.7UF/25V
CB854
0.1UF/25V
CB855
0.1UF/25V
VCHGR
20101102
Charge current = 4A
Set low power mode point
PR66
10K
(14,29) ADAPIN#
(29) KBC_BATDAT
(29) KBC_BATCLK
(29) OVERPW#
PR832
22K
PC836
0.1UF/16V
PC838
100PF/50V/0402
close to EC
Adapter Voltage=18.5V
ACIN > 2.4V (Adapter Exist)
ACIN < 2.4V (Adapter non-Exist)
ADP_ID
PR808
10K_F
PD801
BAS316
AD_TYPE (29)
PR809
10K_F
PR807
0
PC816
470PF/50V
Adapter rating (W) | AD_TYPE (V)
65W/RID=383Kohm | 0.484V
90W/RID=294Kohm | 0.621V
120W/RID=221Kohm | 0.809V
LED control
PR868
330
ACIN_LED#
PQ11
ME2N7002W
(29) ACIN_LED
PR862
510
CHG_LED#
PQ12
ME2N7002W
(29) CHG_LED
AirLine Combo | AC available | Charge
2.032V > ADAPIN_SEL > 1.542V | V | X
ADAPIN_SEL > 2.032V | V | V
1.542V > ADAPIN_SEL | X | X
ADP_ID CB857 0.1UF/10V/0402
CHG_LED# CB856 0.1UF/10V/0402
ACIN_LED# C1089 0.1UF/10V/0402
JS43
JS44
JS45
20101103
EMI
(29) KBC_BATDAT
(29) KBC_BATCLK
(29) BATID
(29) BATTIN#
PR854 100_1%
PR855 100_1%
PR864 100_1%
PR866 100_1%
PR863
100K
PR865
20K_F
PC871
PC870
PC133
PC132
PC144
0.1UF/25V/0603
PZD6
PZD7
PZD801
PZD802
LMZ25V6T1G 5.6V 0.2W
ESD
CN801
CN_POWERCONN_8P
HPMH-39-0510000134G
FLEX Computing
Project Name : H710DI1
Title : CHARGER(BQ24707)
Size :
Document Number : HPMH-40GAB6600-B130
Rev : B
Date: Monday, November 08, 2010
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5V / 3.3VSTBY

Freq=300KHz
TDC = 7 A
OCP = 10 A

Freq=375KHz
TDC = 4 A
OCP = 5.7A

PU9
TPS51125RGER

5V/3.3VSTBY ON

TRIP 3V

TRIP 5V

Current limit

ENTrip floating active

* Options 1.
5VSTBY

* Options 2.

* Options 3.
(38) 3V_5V_PWRGD

Vo=(1+R1/R2)*2
(1+32.4K/21K)*2= 5..08V

Vo=(1+R1/R2)*2
= (1+13/20)*2 = 3.3V

For RT8205A
PR92 must MOUNTED
PR94 must NA

INTEL HR / AMD DANUBE
Options 1 - 5VSTBY / 5V
Options 2 - 5VALW_ON / SUS_ON
Options 3 - 3V_5V_PWRGD / 3.3V_5V_PWRGD
Options 4 - 15V_ALW / 15VSTBY
Options 5 - 5VSTBY / 5V

VREG5 : 5V -> 365KHz , 3.3V -> 460KHz
VREG3: 5V -> 300KHz , 3.3V -> 375KHz

7/28 power Modify

For PCB Acustic Noise

PU3-m1
For layout request, no connect anything.

QFN024-19P7-TH_VIA4

Table 3. Enabling State

EN0	ENTRIP1	ENTRIP2	VREF	VREG5	VREG3	CH1	CH2	VCLK
GND	Don't Care	Don't Care	Off	Off	Off	Off	Off	Off
R to GND	Off	Off	On	On	On	Off	Off	Off
R to GND	On	Off	On	On	On	On	Off	Off
R to GND	Off	On	On	On	On	Off	On	Off
R to GND	On	On	On	On	On	On	On	Off
Open	Off	Off	On	On	On	Off	Off	Off
Open	On	Off	On	On	On	On	Off	On
Open	Off	On	On	On	On	Off	On	Off
Open	On	On	On	On	On	On	On	On

+15V Charge pump

* Options 4.
15V_ALW

* Options 5.
5VSTBY

FLEX Computing

Project Name : H710DI1	Title : 5VSTBY_3VSTBY(TPS51125)
Size : Custom	Document Number : HPMH-40GAB6600-B130
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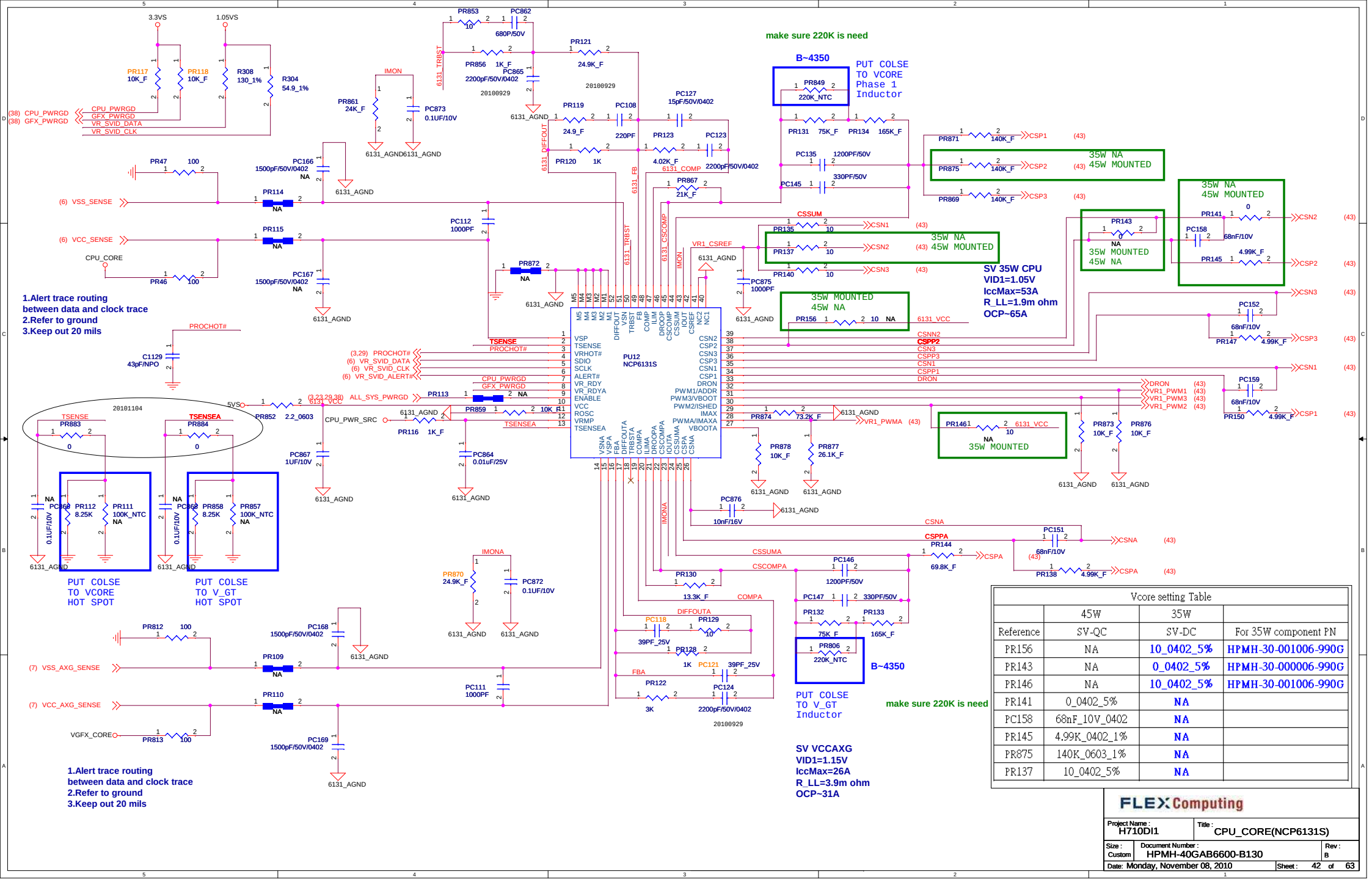
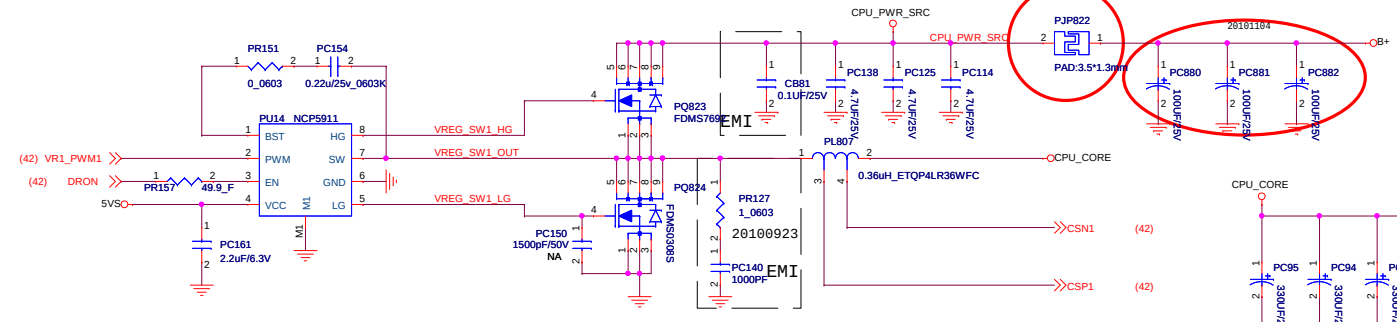
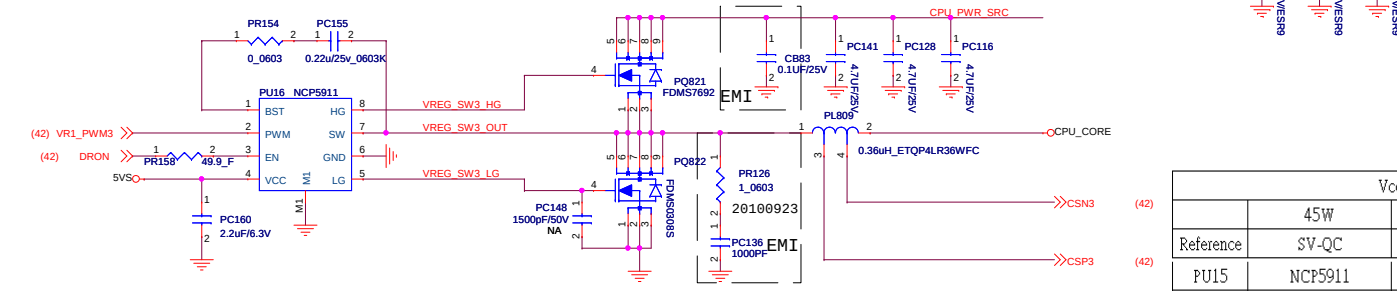


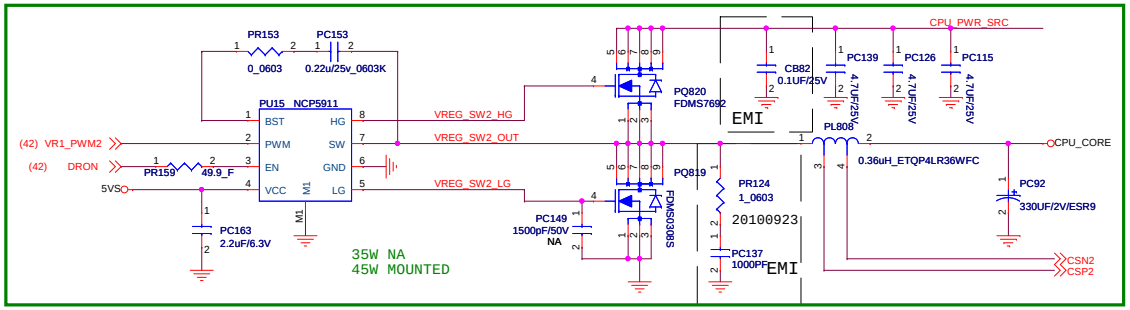
Vcore setting Table			
	45W	35W	
Reference	SV-QC	SV-DC	For 35W component PN
PR156	NA	10_0402_5%	HPMH-30-001006-990G
PR143	NA	0_0402_5%	HPMH-30-000006-990G
PR146	NA	10_0402_5%	HPMH-30-001006-990G
PR141	0_0402_5%	NA	
PC158	68nF_10V_0402	NA	
PR145	4.99K_0402_1%	NA	
PR875	140K_0603_1%	NA	
PR137	10_0402_5%	NA	

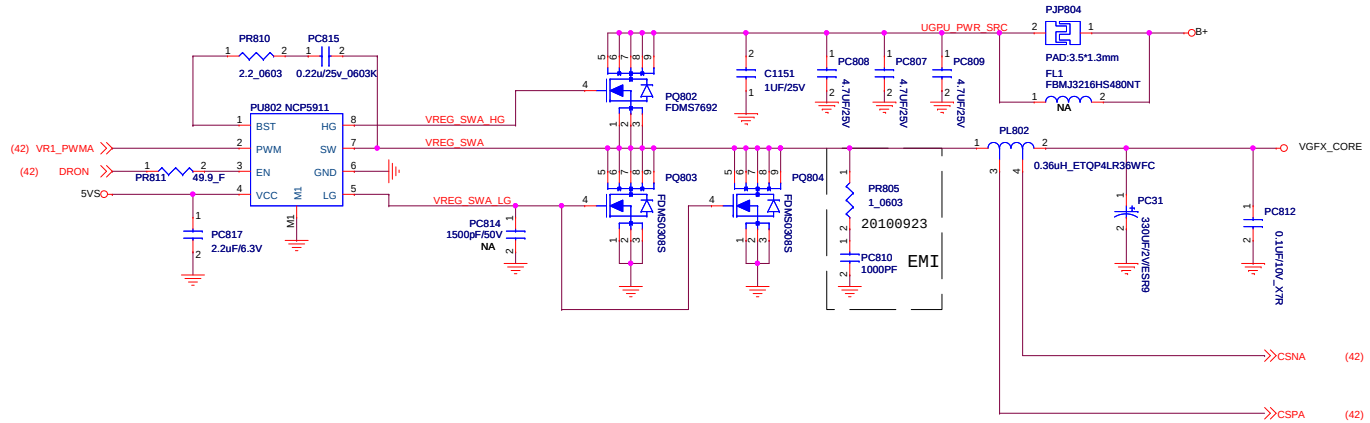
FLEX Computing

Project Name : H710DI1	Title : CPU_CORE(NCP6131S)	
Size : Custom	Document Number : HPMH-40GAB6600-B130	Rev : B
Date: Monday, November 08, 2010	Sheet : 42 of 63	









Vcore setting Table			
	45W	35W	
Reference	SV-QC	SV-DC	For 35W component PN
PU15	NCP5911	NA	
PR153	0_0603_5%	NA	
PC153	0.22UF_25V_0603	NA	
PR159	49.9_0402_1%	NA	
PC163	2.2UF_6.3V_0603	NA	
PQ820	FDMS7692	NA	
PQ819	FDMS0308S	NA	
PL808	0.36uH	NA	
PR874	73.2K_0402_1%	41.2K_0402_1%	HPMH-30-141221-990G
PR861	24K_0402_1%	24.9K_0402_1%	HPMH-30-124921-990G
PR867	21K_0402_1%	12.4K_0402_1%	HPMH-30-112421-990G

FLEX Computing

Project Name : H710DI1	Title : CPU_CORE_DRIVER(NCP5911)
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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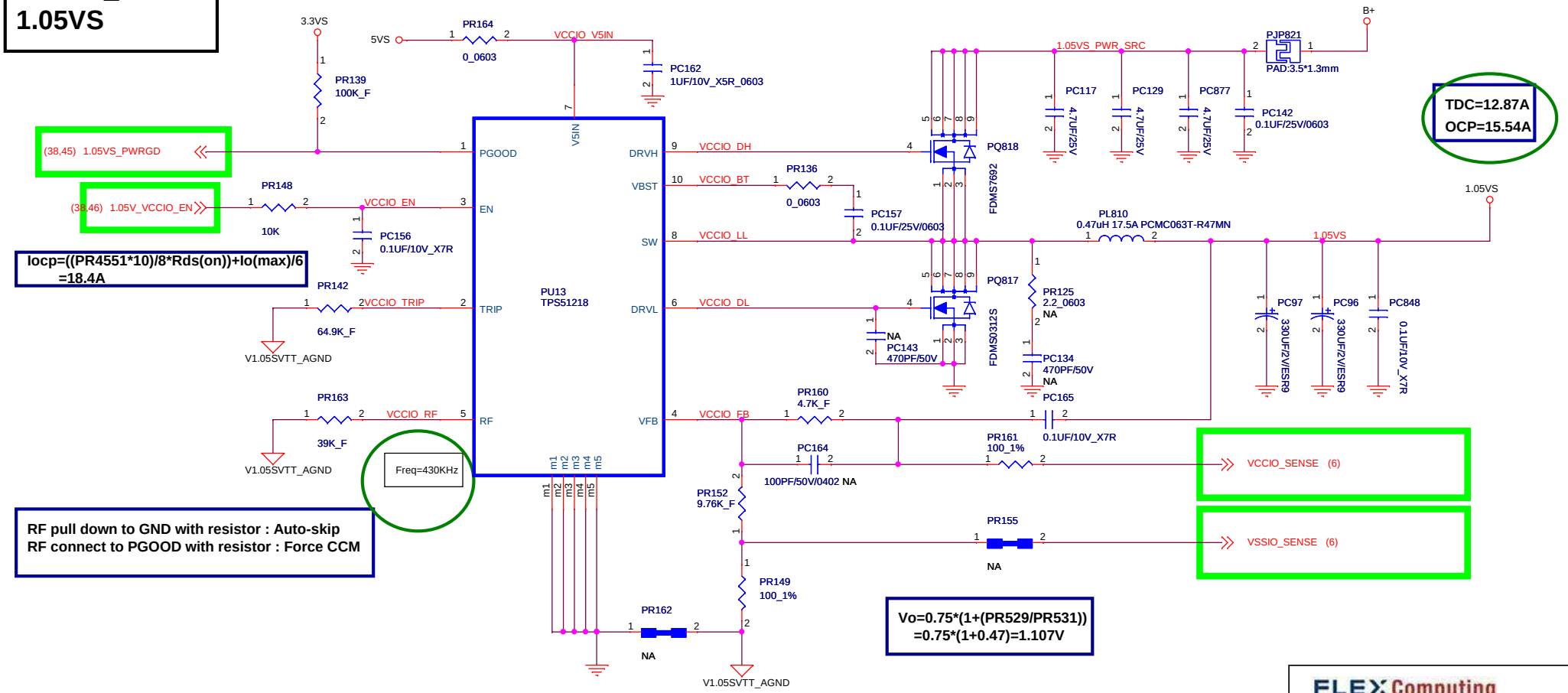
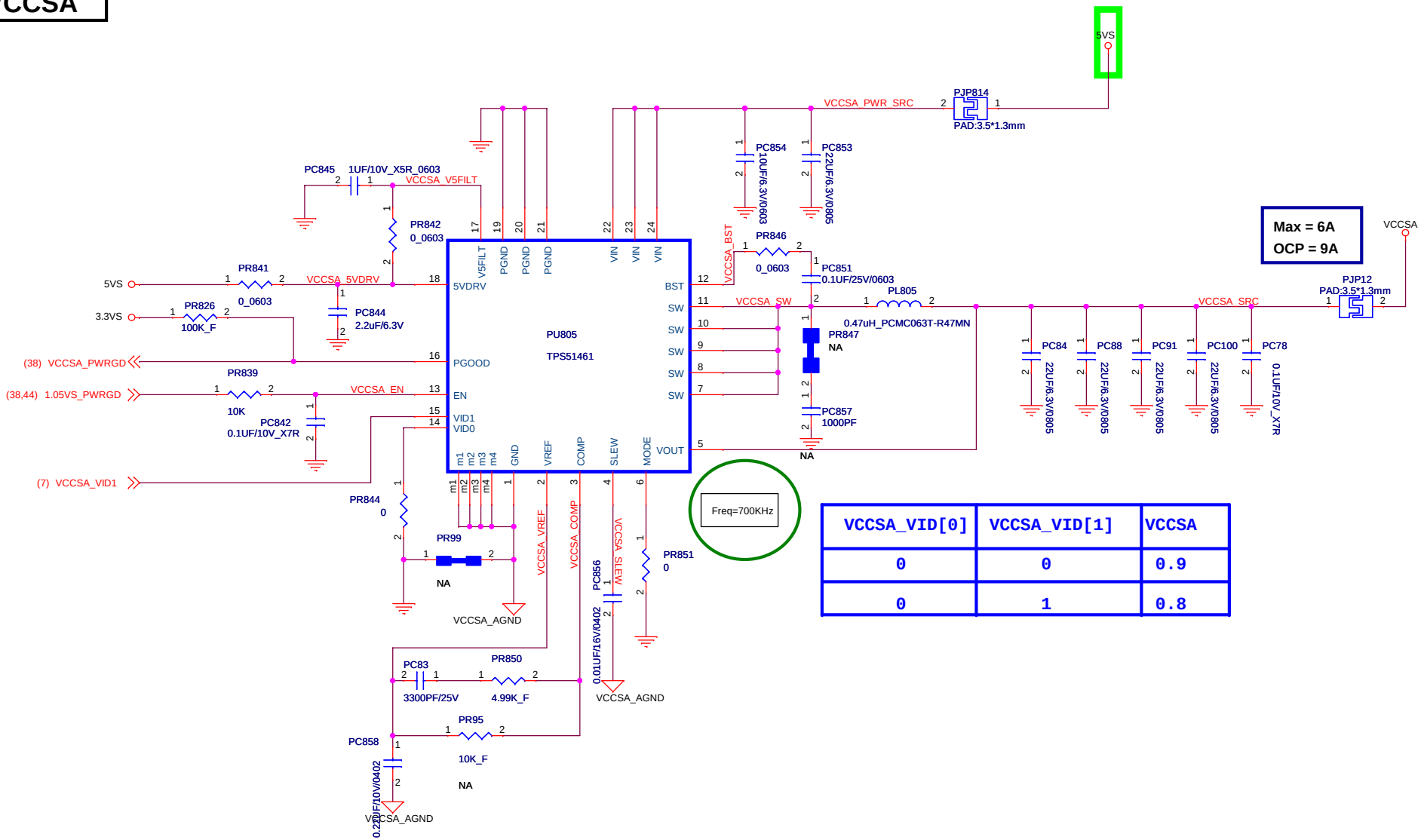
1.05VS_VCCIO
1.05VS



FLEX Computing

Project Name : H710DI1	Title : 1.05VS(TPS51218)
Size : Custom	Document Number : HPMH-40GAB6600-B130
Rev : B	
Date: Monday, November 08, 2010	Sheet : 44 of 63

VCCSA



VCCSA_VID[0]	VCCSA_VID[1]	VCCSA
0	0	0.9
0	1	0.8

FLEXComputing

Project Name : H710DI1	Title : ITE8509E/ 1.1VS	
Size : B	Document Number : HPMH-40GAB6600-B130	Rev : B
Date: Monday, November 08, 2010	Sheet : 45 of 63	

1.5V

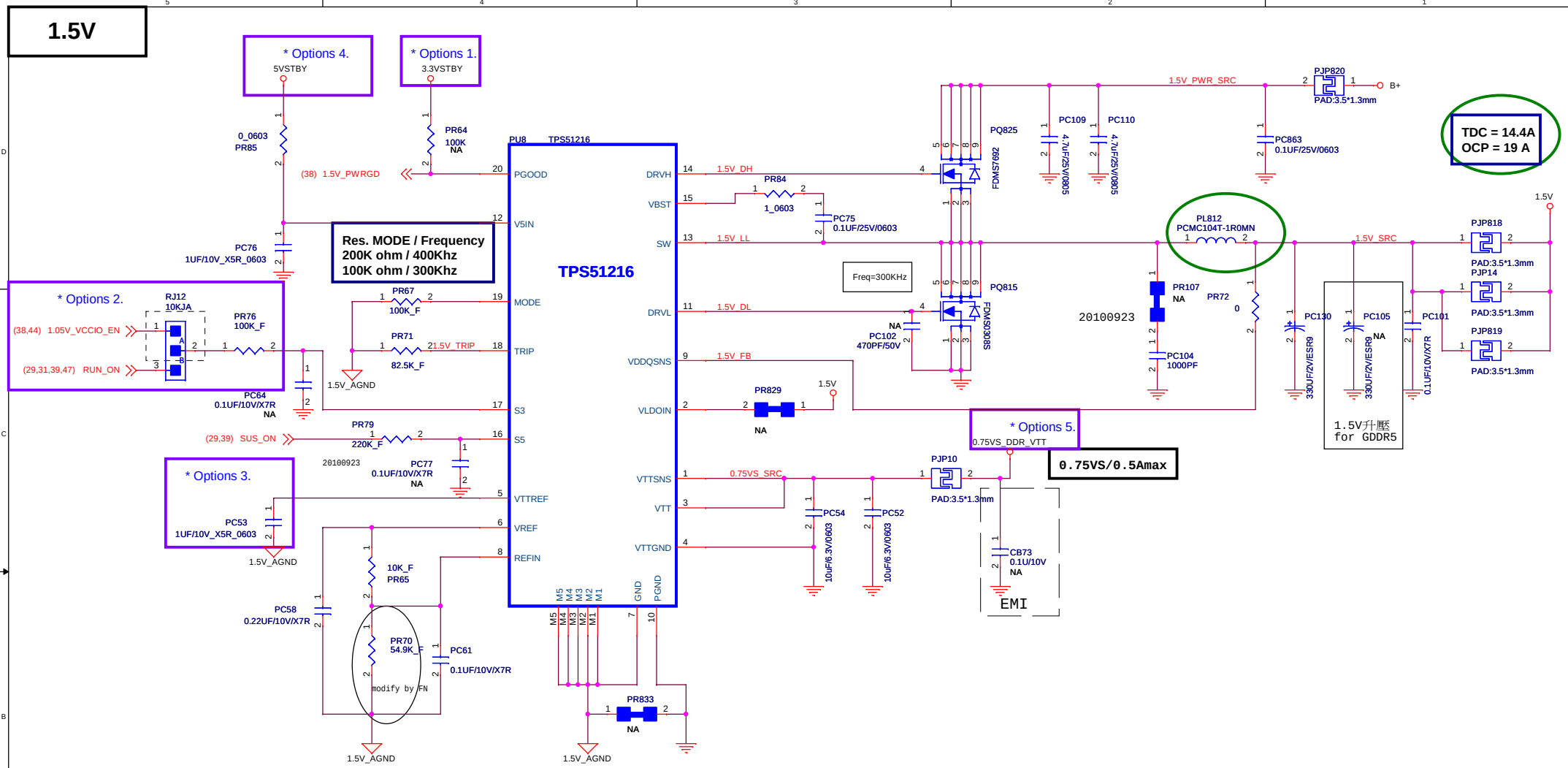


Table 1. S3 and S5 Control Table

STATE	S3	S5	VTTREF	VTT
S0	H	H	1	1
S3	L	H	1	0 (high-Z)
S4/S5	L	L	0 (discharge)	0 (discharge)

INTEL HR / AMD DANUBE

Options 1 - 3.3VSTBY / 3.3V
Options 2 - RUN_ON / SUS_ON
Options 3 - DDR_VTTR / V_DDR_VTT
Options 4 - 5VSTBY / 5V
Options 5 - 0.75VS_DDR_VTT / 0.75V_DDR_VTT

FLEXComputing

Project Name : H710DI1	Title : DDR_PWR(TPS51216)
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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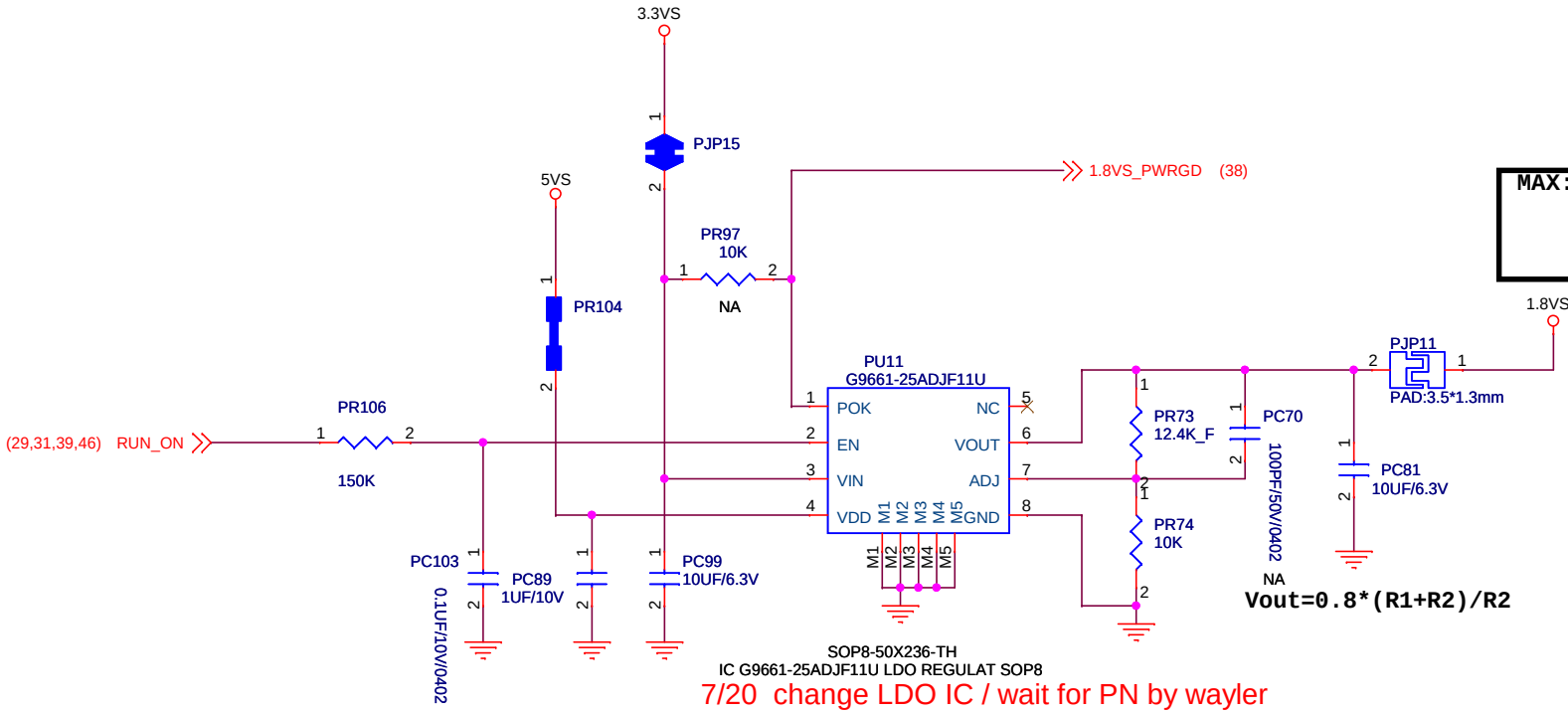
1.8VS



MAX:
UI=1.45A

1.8VS for CPU & PCH

Vout=0.8*(R1+R2)/R2

7/20 change LDO IC / wait for PN by wayler

FLEX Computing

Project Name : H710DI1	Title : 1.8VS	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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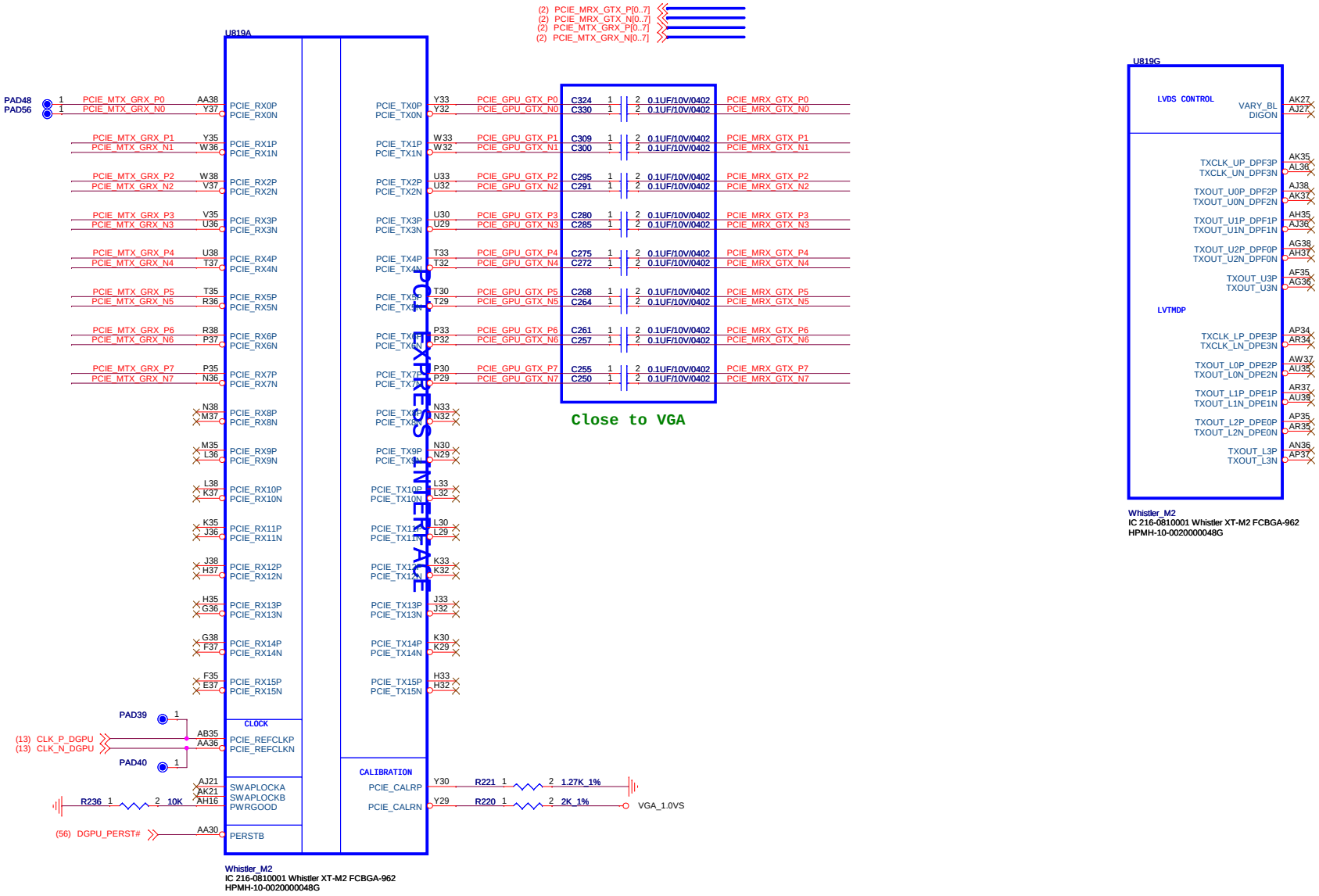

GPU TYPE	PN
Whistler XT	HPMH-10-0020000048G
Seymour-XT	HPMH-10-0020000049G

FLEX Computing

Project Name : H710DI1	Title : Capilano_1/5_PCIE/LVDS
Size :	Document Number : HPMH-40GAB6600-B130 / Rev : B
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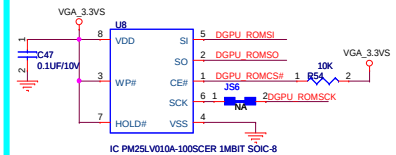
For del vBIOS ROM design:
1.P49 -U8,C47,R54
2.P53 -R1001,R1002,R1015

For GDDR5 used

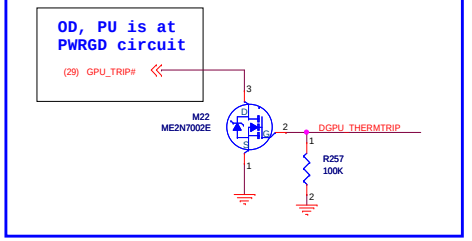


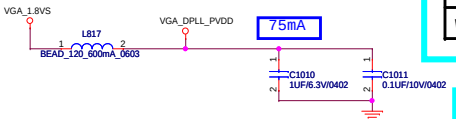
NA for del vBIOS ROM design.

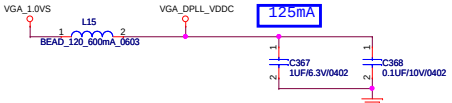
VMEM_ID

	DVPDATA_2	DVPDATA_1	DVPDATA_0
Seymour Hynix H5GQ2H24MFR-T2C (128Mx16) x4pcs	0	0	0
Seymour Samsung K4G20325FC-HC04 (128Mx16) x4pcs	0	0	1
Whistler Hynix H5GQ1H24AFR-T2C (64Mx16) x8pcs	0	1	0
Whistler Samsung K4G10325FE-HC04 (64Mx16) x8pcs	0	1	1
Seymour Hynix H5GQ1H24AFR-T2C (64Mx16) x4pcs	1	0	0
Seymour Samsung K4G10325FE-HC04 (64Mx16) x4pcs	1	0	1
Seymour Elpida EDW2032BABG-50-F(128Mx16) x4pcs	1	0	1
Whistler Elpida EDW1032BABG-50-F(64Mx16) x8pcs	1	1	1

OD, PU is at PWRGD circuit



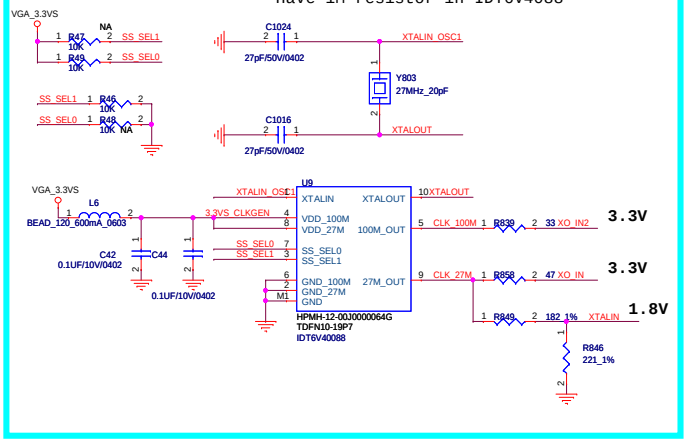


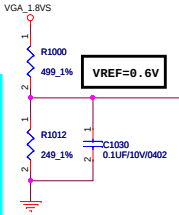


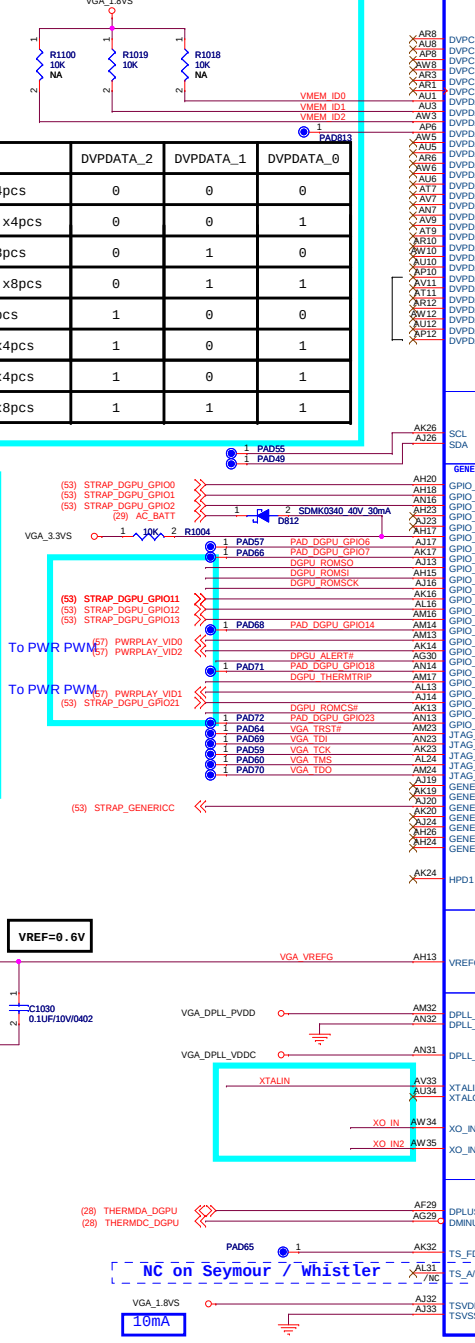
100 MHz Spread Selection Table

PIN3	PIN7	PIN5	
S1	S0	Down Spread%	
L	L	OFF	
L	M	-0.5	
L	H	-2.5	
M	L	-0.25	
M	M	-0.75	
M	H	-1.0	
H	L	-1.5	
H	M	-2.0	Default
H	H	-3.0	

Have 1M resistor in IDT6V4088

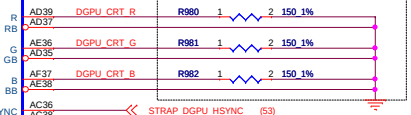






Whistler_M2
IC 216-0810001 Whistler XT-M2 FCBGA-962
HPMH-10-0020000048G

For DGPU debug, mounted Close to chipset



NC on Seymour / Whistler

NC on Seymour / Whistler

NC on Seymour / Whistler

NC on Seymour / Whistler

For DGPU debug

FLEX Computing

Project Name : H710DI1	Title : Capilano_2/5_DP/DAC/GPIO	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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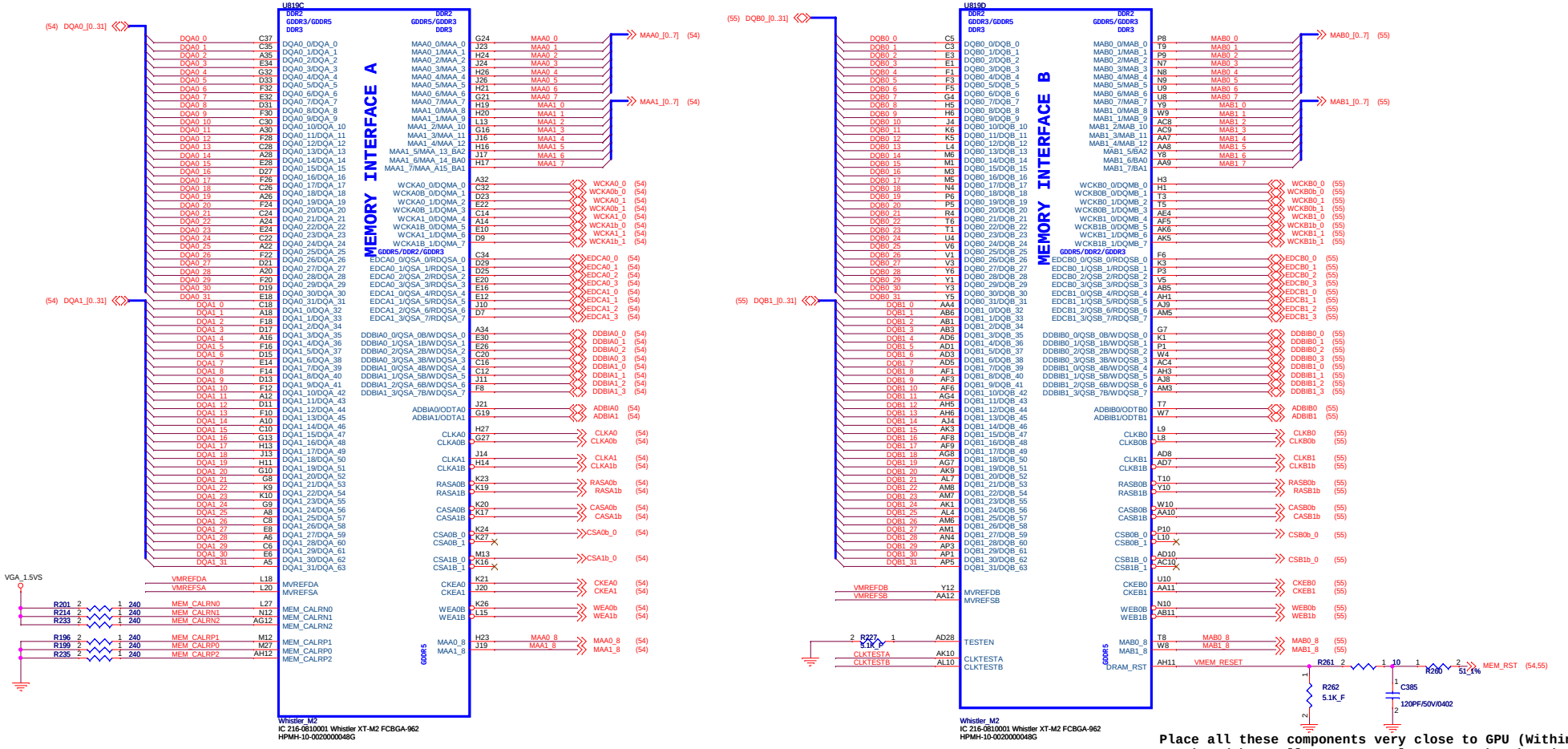
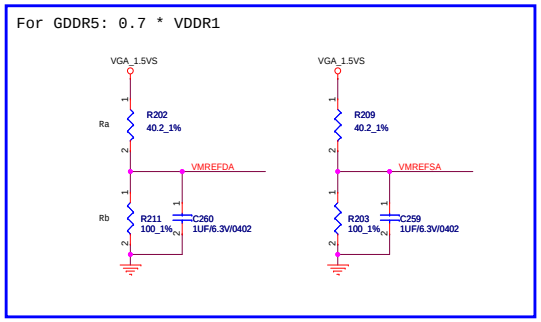
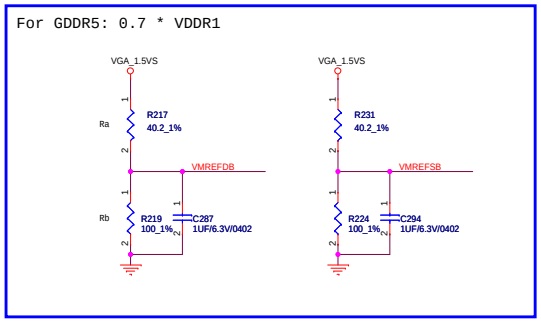
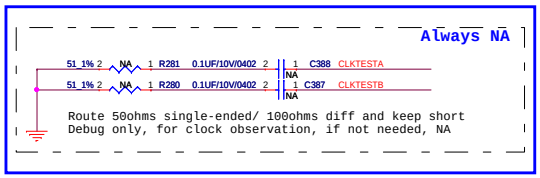


Place all these components very close to GPU (Within 25mm) and keep all component close to each Other (within 5mm) except Rser2

VRAM TYPE		PN
Hynix H5GQ1H24AFR-T2C	64MX16(32MX32)	HPMH-14-0030000001G
Hynix H5GQ2H24MFR-T2C	128MX16(64MX32)	HPMH-14-0030000002G
SAMSUNG K4G10325FE-HC04	64MX16(32MX32)	HPMH-14-0030000003G
SAMSUNG K4G20325FC-HC04	128MX16(64MX32)	HPMH-14-0030000004G
Elpida EDW1032BABG-50-F	64MX16(32MX32)	HPMH-14-0030000005G
Elpida EDW2032BABG-50-F	128MX16(64MX32)	HPMH-14-0030000006G







FLEXComputing

Project Name : H710DI1	Title : Capilano_3/5_VRAM_ IF	
Size :	Document Number : HPMH-40GAB6600-B130	Rev : B
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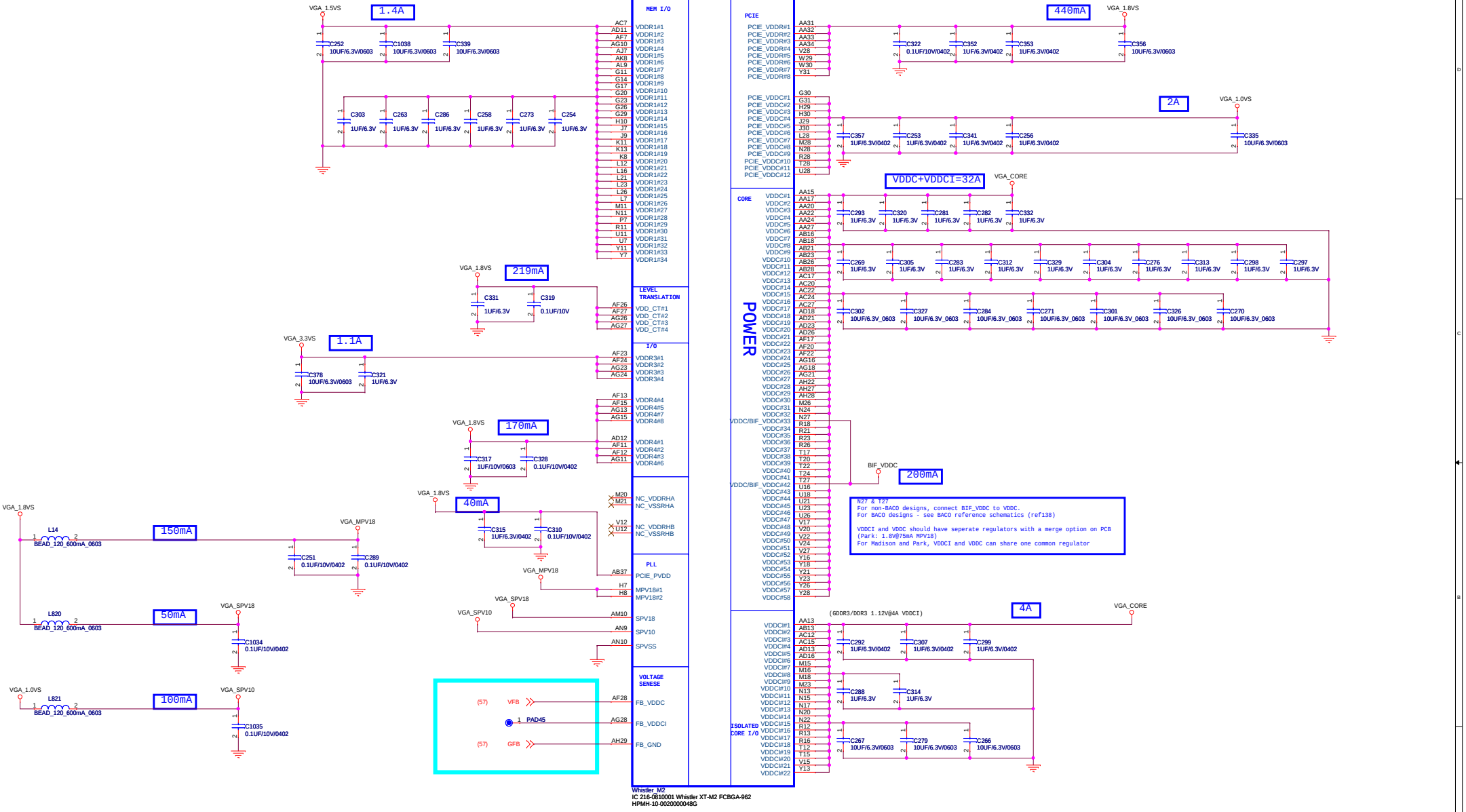

FLEX Computing

Project Name : H710DI1	Title : Capilano_4/5_PWR_IO
Size :	Document Number : HPMH-40GAB6600-B130 Rev : B
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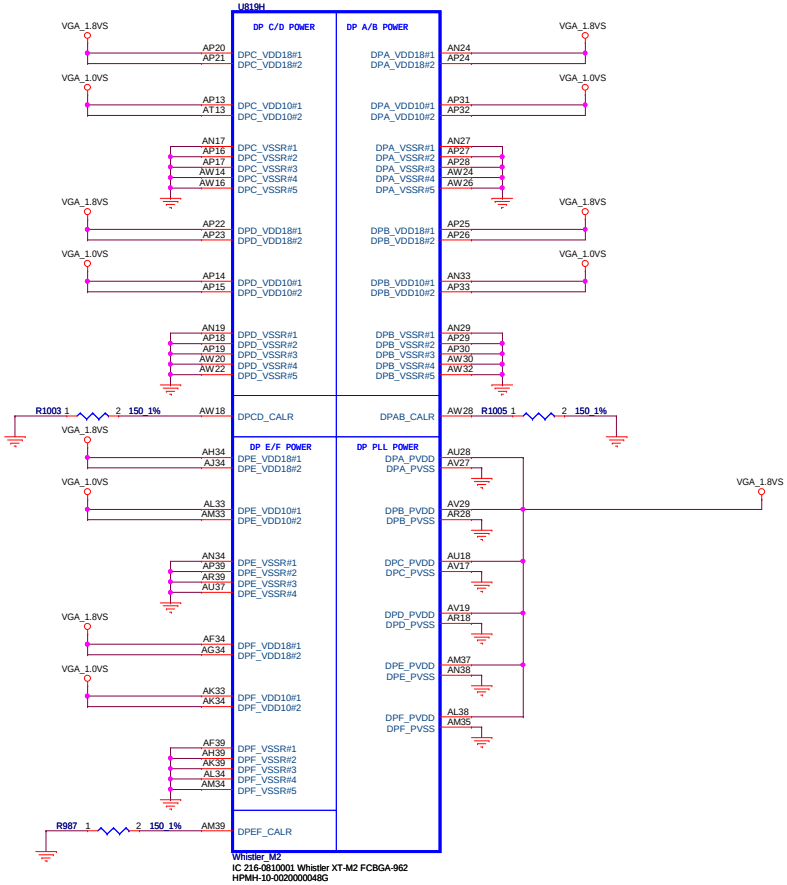

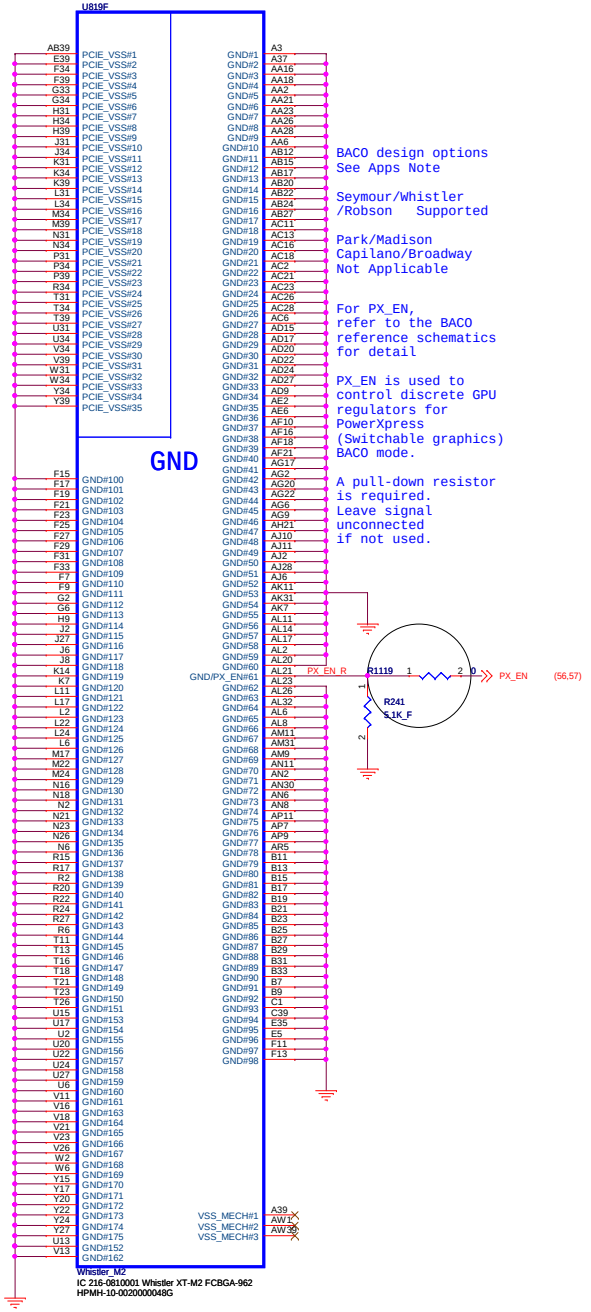

FLEXComputing			
Project Name : H710DI1		Title : Capilano_5/5_PWR_DAC/GND	
Size :	Document Number : HPMH-40GAB6600-B130		Rev : B
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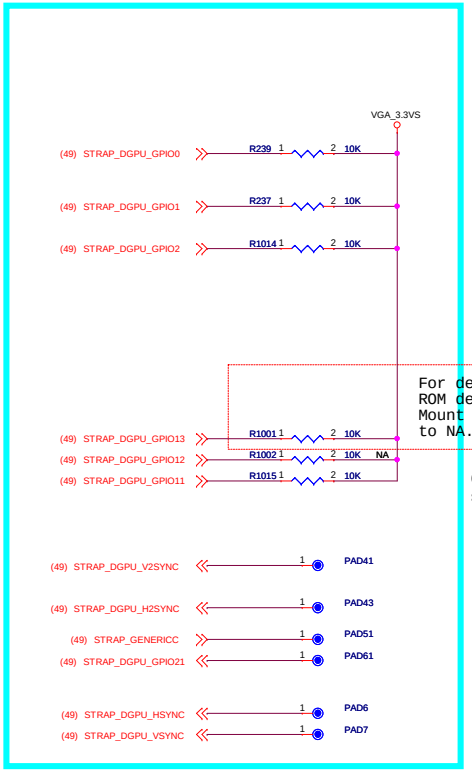
Signal	Seymour/Whistler	Robson/Park Medison/Capilano Broadway
Ball AC32 on M2	NC	DAC2 Output-C on M2 package
Ball AA29 on M2	NC	R2SET on M2 package
Ball AD32 on M2	NC	DAC2 Output- Y
Ball AG33 on M2	NC	A2VDD
Ball AD33 on M2	NC	A2VDDQ
Ball AF33 on M2	TSVSSQ	A2VSSQ
Ball AG33 AG32 on M2	NC	VDD2DI/VSS2DI
H2SYNC	GENLK_CLK: (3.3V) Reference clock input (3.3V) for pixel PLL received from frame-lock/ gen-lock interface	H2SYNC
V2SYNC	GENLK_VSYNC (3.3V) Frame timing indicator.Output to frame-lock/genlock interface	V2SYNC

Signal	Seymour/Whistler	Robson/Park Medison/Capilano Broadway
Ball AJ21 on M2 Ball AG13 on S3	SWAPLOCKA SwaplockA/B signals can be optionally used on a multi-GPU design with multiple display outputs to allow all displays in a group (group A or group B) to update at the same time and have synchronous left/right stereo timing. Genlock of the GPUs is also needed, either via a genlock system, or by feeding all GPUs with the same reference clock. Also connecting SwaplockB is preferred, but not required. SwaplockA/B are open drain, 3.3V signals. If this feature is not required, these signals can be used as 3.3V GPIOs or left unconnected on the PCB.	Ball AJ21 is NC on M2 packages Ball AG13 is R2SET on S3 package
Ball AK21 on M2 Ball H12 on S3	SWAPLOCKB – see above On a multi-gpu design,SwaplockB from all GPUs are connected together with an external pull-up resistor (10K Ohms). If this feature is not required, these signals can be used as 3.3V GPIOs or left unconnected on the PCB.	Ball AK21 is NC on M2 packages Ball AH12 is DAC2 Output- on S3 package

CONFIGURATION STRAPS

STRAPS	PIN	DESCRIPTION	ASIC Deault	Status
TX_PWRS_ENB	GPIO0	Transmitter (Tx) power savings enable. 0: 50% Tx output swing 1: Full Tx output swing (DEFAULT)	0 Internal Pull Down	Mounted
TX_DEEMPH_EN	GPIO1	PCI Express transmitter deemphasis enable. 0: Tx de-emphasis disabled 1: Tx de-emphasis enabled (DEFAULT)		Mounted
RESERVED	GPIO2	0 : PCIe device as 2.5 GT/s capable 1 : PCIe device as 5.0 GT/s capable (DEFAULT)		Mounted
VGA_DIS	GPIO9	VGA disable determines whether or not the card will be recognized as the system's VGA controller (via the SUBCLASS field in the PCI configuration space): 0 : VGA Controller capacity enabled (DEFAULT) 1 : The device will not be recognized as the system's VGA controller		NA NA
BIOS_ROM_EN	GPIO_22_ROMCSB	Enable the external BIOS ROM device: 0 - Disable external BIOS ROM device (DEFAULT) 1 - Enable external BIOS ROM device		Mounted
CONFIG[2] CONFIG[1] CONFIG[0]	GPIO13 GPIO12 GPIO11	BIOS_ROM_EN = 1, Config[2:0] defines the ROM type. BIOS_ROM_EN = 0, Config[2:0] defines the primary memory aperture size Size of the primary memory apertures CONFIG[2:0] 128 MB 000 256 MB 001 (DEFAULT) 64 MB 010 32 MB 011		Mounted NA Mounted
VIP_DEVICE_STRAP_ENA	V2SYNC	IGNORE VIP DEVICE STRAPS L: Ignore VIP Device Strap (DEFAULT) H: Enable VIP Device Strap		NA
RESERVED RESERVED RESERVED RESERVED	H2SYNC GENERICC GPIO8 GPIO21_BB_EN			NA NA NA NA
AUD[1] AUD[0]	HSYNC VSYNC	AUD[1] AUD[0] 0 0 No audio function (DEFAULT) 0 1 Audio for DisplayPort only 1 0 Audio for DisplayPort and HDMI if dongle is detected 1 1 Audio for both DisplayPort and HDMI		NA NA



GPIO 13,12,11 CONFIG[2:0] =>101 for PM25LV010

FLEX Computing

Project Name : H710DI1	Title : Capilano_STRAPS/ChipDiff	
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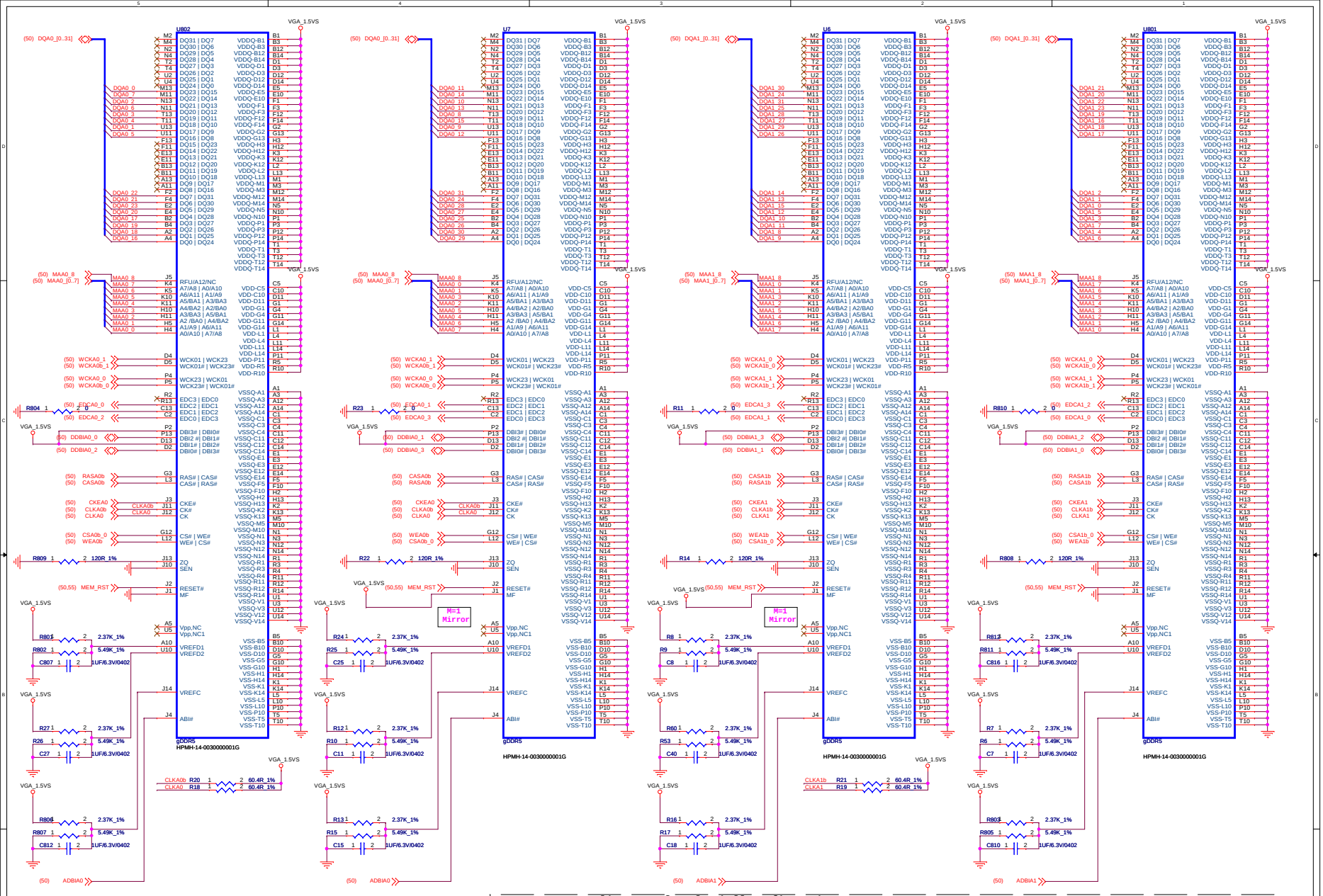

NA for Seymour

GDDR5 Memory Channel A X16 Mode

FLEX Computing	
Project Name : H710DI1	Title : Caplan_VRAM GDDR5 64MX16 A
Size : B	Document Number : HPMH-40GAB6600-B130
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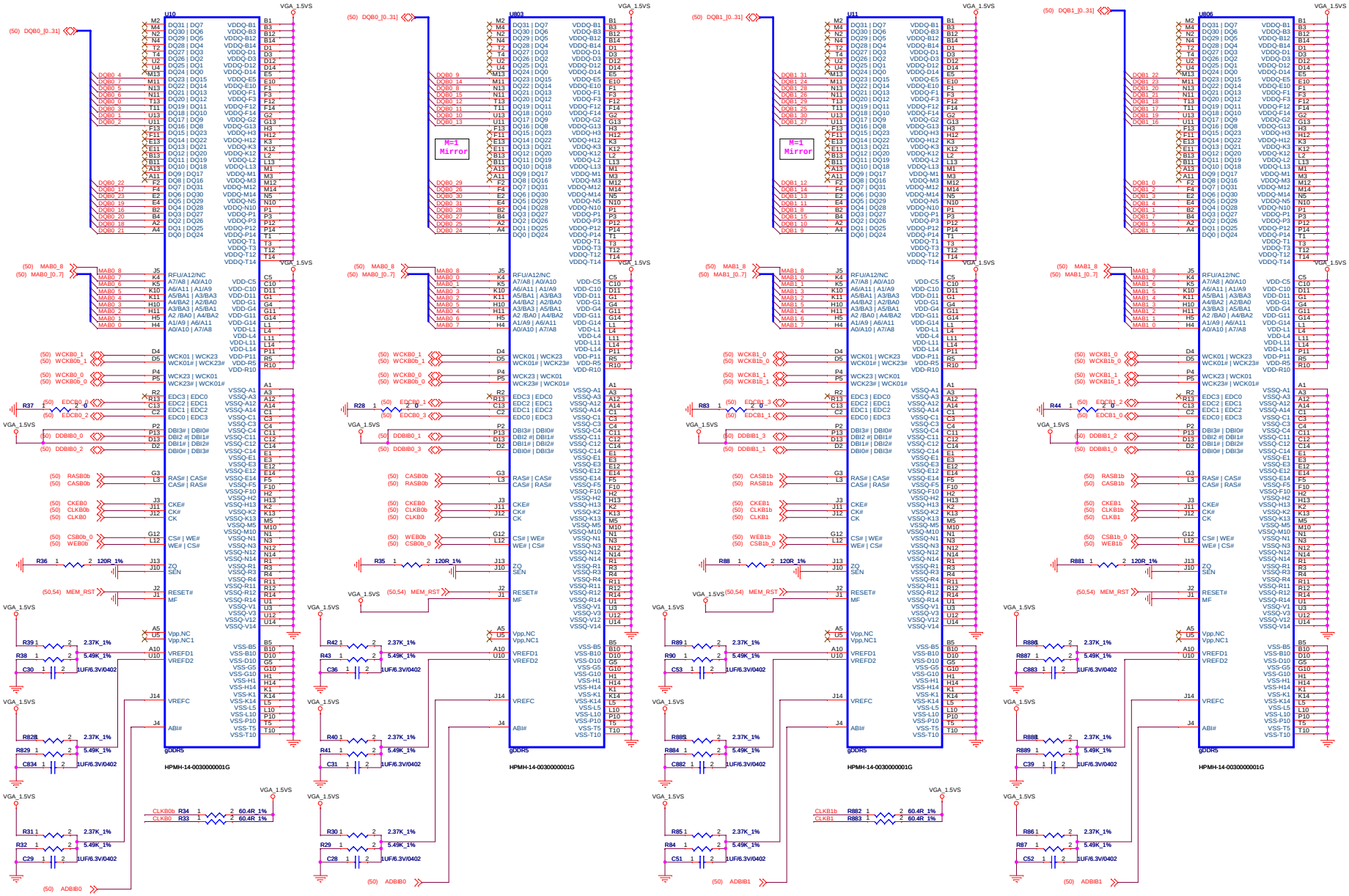
U10
U803
U11
U806
VGA_1.5VS
(50) DQB0_[0..31]
(50) DQB1_[0..31]
(50) MAB0_8
(50) MAB0_[0..7]
(50) MAB1_8
(50) MAB1_[0..7]
M=1 Mirror
gDDR5
HPMH-14-0030000001G
GDDR5 Memory Channel B X16 Mode
Decoupling caps for clamshell configuration:
1X 10uf per 2 clamshell DRAM
8 X 1uf per 2 clamshell DRAM
FLEX Computing
Project Name : H710DI1
Title : Capilan_VRAM GDDR5 64MX16 B
Size :
Document Number : HPMH-40GAB6600-B130
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UI NA
DI Mount

AMD recommand Rds(on): 140m

M20B AM3922-T1-PF
M20A AM3922-T1-PF
VGA_1.0VS
VGA_1.0VS_M
PX_EN_PCIE_VDDC

200mA
BIF_VDDC
C247 10UF/6.3V/0603

AMD recommand Rds(on): 21m

M21 N-CH/ME2306D-G
M25 N-CH/ME2306D-G
VGA_CORE
VGA_CORE_M
PX_EN_VGA_CORE

HPMH-18-0020000170G
MOS N-ch ME2306D-G 30V 3.9A SOT-23 <MOUNTED>

ME2306D:
Vgs(th) : 1.0V(min),3.0V(max)
Rds(on) : 31m@Vgs = 10V(MAX)
Rds(on) : 52m@Vgs = 4.5V(MAX)
Id : 3.9A(Max)

5VS
R277 1K
R268 1K
20101022
PX_EN_VGA_CORE
PX_EN_PCIE_VDDC
M813 ME2N7002E
M23 ME2N7002W
(17,57) BACO_PWROK

TDC : 9A
For 8 pcs GDDR5 + DGPU

3.3VSTBY
R332 10K
15V_ALW
R1034 330K
Q801 FDMS0308S
1.5V
VGA_1.5VS
C32 22UF/6.3V/0805
C1053 0.1UF/25V/0603
VGA_1.5VS_EN
Q802 ME2N7002E
DGPU_EN#
Q9 ME2N7002E
DGPU_PWR_EN
PQ13 ME2N7002E-G
PX_EN (52,57)

PX_EN =0, for Normal Operation
PX_EN =1, for BACO MODE

TDC: 1.1A

15V_ALW
R401 20K
3.3VS
M52 ME2306D-G
VGA_3.3VS
R1121 10K
C600 0.1u/25V_0603
VGA_3.3VS_EN
M53 ME2N7002E-G
20101105
R1120 1K
M828 ME2N7002E-G

VGA_3.3VS EN
add 10k for
power down

PWROK_VGA_1.0VS
5VS
1.5V
PR818 NA
PJP808
R1035 28.7K_F
DGPU_PWR_EN
PU803 G9661-25ADJF11U
POK NC
EN VOUT
VIN ADJ
VDD GND
C1070 0.1UF/10V/0402
PC822 10UF/10V
PC828 10UF/6.3V
SOP8-50X236-TH
IC G9661-25ADJF11U LDO REGULAT SOP8
PR814 2.49K_F
PC818 0.01UF/50V/X5R/0402
PC819 10UF/6.3V
PR816 10K
NA
PJP806
PAD:3.5*1.3mm
VGA_1.0VS
EC816 0.1U/10V
NA
EMI
Vout=0.8*(R1+R2)/R2

TDC : 2.22A

3.3VS
R402 10K
PWROK_VGA_1.0VS
PR827
PWROK_VGA_1.8VS
PR828
DGPU_PWR_EN
PR824 47K
D816 SDMK0340_40V_30mA
20101105
VGA_1.8VS EN
add diode for
power down.
Need mount

PWROK_VGA_1.8VS
5VS
3.3VS
PR823 NA
PJP809
PU804 G9661-25ADJF11U
PC826 0.1UF/10V/0402
PC824 1UF/10V
PC827 10UF/6.3V
SOP8-50X236-TH
IC G9661-25ADJF11U LDO REGULAT SOP8
PR817 12.4K_F
PR815 10K
PC820 100UF/6.3V/X5M/20
NA
PC821 10UF/6.3V
PJP807
PAD:3.5*1.3mm
VGA_1.8VS
Vout=0.8*(R1+R2)/R2

TDC : 1.1A

7/20 change LDO IC / wait for PN by wayler

UI NA
DI Mount

3.3VS
R400 10K
M50 ME2N7002E
DGPU_PWR_EN
DGPU_PWR_EN (29,57)
(16) DGPU_PWR_EN#

L	H
DGPU ON	DGPU OFF

(3,11,16,27,29,30,31,36) PCH_PLT_RST#
(16) DGPU_HOLD_RST#
RJ8
0JB
DGPU_PERST# (48)

UI NA
DI Mount(B)

FLEXComputing

Project Name : H710DI1	Title : DGPU_RUN PWR, PWRGD, BACO
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VID4(PP2) (GPIO16)	VID3(PP1) (GPIO20)	VID2(PP0) (GPIO15)	VGA_CORE
0	0	1	1.05V
1	0	0	0.900V

VID							V_{DAC} (V)
6	5	4	3	2	1	0	
0	1	0	0	1	0	0	1.0500
0	1	1	0	0	0	0	0.9000

	15W	15W
TDC	15A	35A
OCP	22.5A	50A

深藍色框內爲15W NA

深藍色框內爲15W 時需改值

15W 時MOUNTED

**TPS51728

5VS PU maybe leakage in BACO. Change to VGA_3.3VS

VGA_CORE EN change R and C for power down

PX_EN =0, for Normal Operation
PX_EN =1, for BACO MODE

OD, PU is at PCH/SB

PU6 TPS51217 NA

TPS51217

0929 MODIFY

PC17
35W==>HPMH-31-0020000064G 0.22u/25v_0603
15W==>HPMH-31-141047-950G 0.1uF/25V/0603

PL803
35W==>HPMH-32-800562-020G 0.56uH 25A PCMC104T-R56MN
15W==>HPMH-32-4000000181G 1uH 18A PCMC104T-1R0MN

PR6
35W==>HPMH-30-220021-990G 20K_0402_F
15W==>HPMH-30-154921-990G 54.9K_0402_F

PR13
35W==>HPMH-30-001006-990G 10_0402_J
15W==>HPMH-30-107521-990G 7.5K_0402_F

15W 時需改值

Seymour GDDR5 (15W)	
VID0	VGA_CORE
0	0.9
1	1.1

FLEX Computing

Project Name : H710DI1	Title : VGA_CORE(TPS51728)35W
Size : Custom	Document Number : HPMH-40GAB6600-B130 Rev : B
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FID9 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID802 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID11 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID804 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID801 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID10 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID803 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

FID7 FIDUCIAL CAD-016 NC, NO CONNECT TO ANY.

H26 PTH8_2.8 THR315B276_110 NA
H27 PTH8_2.8 THR315B276_110 NA
H25 PTH6.8_2.8 THR268_110 NA

CPU
H22 PTH7_4.7 THR276B189_150 NA
H23 PTH7_4.7 THR276B189_150 NA
H16 PTH7_4.7 THR276B189_150 NA
H17 PTH7_4.7 THR276B189_150 NA

H20 PTH6B7_2.8 THR236B276_110 NA
H12 PTH7_2.8 THR276B315_110 NA
H7 PTH7_2.8 THR276B315_110 NA AG
H8 PTH7_2.8 THR213B315_110 NA
H15 PTH7_2.8 THR276B315_110 NA

VGA
H18 PTH7_4.7 THR276B189_150 NA
H19 PTH7_4.7 THR276B189_150 NA
H13 PTH7_4.7 THR276B189_150 NA
H14 PTH7_4.7 THR276B189_150 NA

PCH
H11 PTH7_4.6 THR122B276_083
H10 PTH7_4.6 THR122B276_083

H9 PTH7_2.8 THR268B276_110 NA

H21 PTH7_2.8 NPTH106X087 NA
H24 PTH7_2.8 NPTH106X087 NA
H6 PTH7_2.8 NPTH087 NA

5VSTBY
放在gfx power 兩邊
C1124 2 0.1UF/10V/0402
C1125 2 0.1UF/10V/0402
C1128 2 0.1UF/10V/0402
C1127 2 0.1UF/10V/0402
1.05VS
C1131 2 0.1UF/10V/0402
C1130 2 0.1UF/10V/0402
C1145 2 0.1UF/10V/0402
for Intel Reserved

ME1 ME4 ME5 NA
ME2 20101103

5VS 5VSTBY
C820 2 NA 0.1UF/10V/0402
C46 2 NA 0.1UF/10V/0402
C1008 2 0.1UF/10V/0402
C506 2 0.1UF/10V/0402
C163 2 0.1UF/10V/0402

3.3VS CPU_CORE
C535 2 NA 0.1UF/10V/0402
C512 2 NA 0.1UF/10V/0402
C1139 2 0.1UF/10V/0402
C1140 2 0.1UF/10V/0402
C1141 2 0.1UF/10V/0402
C1142 2 0.1UF/10V/0402

1.5V
C533 2 0.1UF/10V/0402
C541 2 0.1UF/10V/0402
C539 2 0.1UF/10V/0402
C1143 2 0.1UF/10V/0402
C1144 2 0.1UF/10V/0402
CB853 2 0.1UF/10V/0402
20101102

5VSTBY 3.3VS
C496 2 NA 0.1UF/10V/0402
C518 2 NA 0.1UF/10V/0402
C181 2 NA 0.1UF/10V/0402
C126 2 NA 0.1UF/10V/0402
C84 2 0.1UF/10V/0402
C337 2 0.1UF/10V/0402
C1136 2 0.1UF/10V/0402
C1137 2 0.1UF/10V/0402
C1138 2 0.1UF/10V/0402
CB879 2 0.1UF/10V/0402
20101105
20100923

3.3VS VGA_1.5VS
C393 2 NA 0.1UF/10V/0402
C200 2 NA 0.1UF/10V/0402
C201 2 NA 0.1UF/10V/0402
C473 2 0.1UF/10V/0402
C215 2 NA 0.1UF/10V/0402
C236 2 0.1UF/10V/0402
CB852 2 0.1UF/10V/0402
20101102

3.3VS VGA_CORE
C390 2 NA 0.1UF/10V/0402

5VSTBY 1.05VS
C49 2 0.1UF/10V/0402

1.05VS 3.3VS
C164 2 NA 0.1UF/10V/0402
C323 2 NA 0.1UF/10V/0402
C526 2 0.1UF/10V/0402
C60 2 0.1UF/10V/0402
C1133 2 0.1UF/10V/0402
C1134 2 0.1UF/10V/0402
C1135 2 0.1UF/10V/0402
20100923

3.3VSTBY 3.3VS
C509 2 0.1UF/10V/0402
C532 2 0.1UF/10V/0402

3.3VS 1.05VS
C373 2 NA 0.1UF/10V/0402
C229 2 NA 0.1UF/10V/0402

3.3VS 5VSTBY
C499 2 NA 0.1UF/10V/0402

5VSTBY B+
CB49 2 0.1UF/25V
C1150 2 1UF/25V
CB4 1 2 1UF/25V
CB3 1 2 1UF/25V

B+ 3.3VS
CB90 2 0.1UF/25V
CB848 2 0.1UF/25V
CB122 2 0.1UF/25V
CB106 2 0.1UF/25V
CB5 2 0.1UF/25V
CB48 2 0.1UF/25V
CB878 2 0.1UF/25V
CB803 2 0.1UF/25V
CB847 2 0.1UF/25V
CB849 2 0.1UF/25V
CB850 2 0.1UF/25V
CB851 2 0.1UF/25V
20101102

FLEXComputing

Project Name : H710DI1	Title : PAD_SCREW_ Moat Cap
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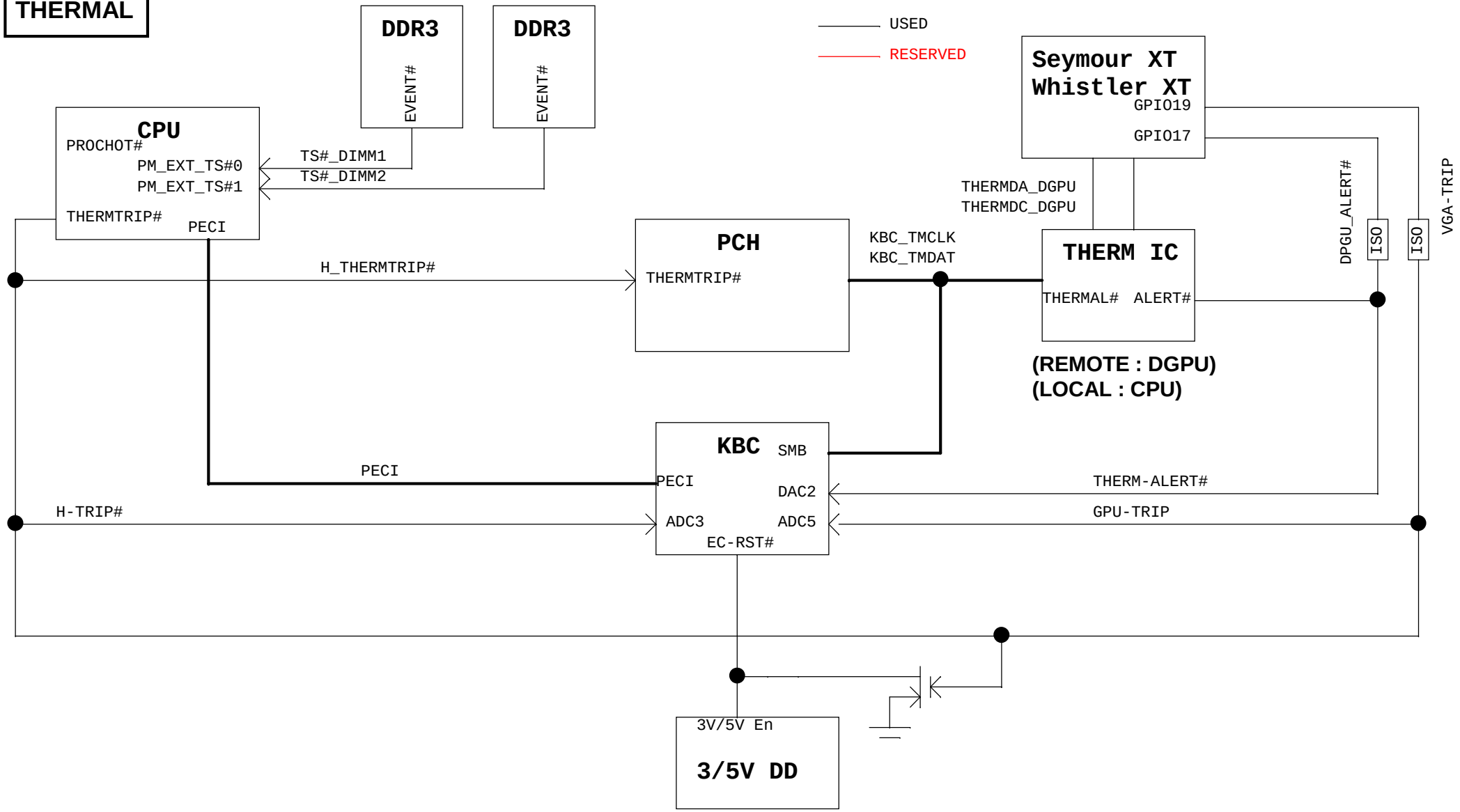
THERMAL



FLEX Computing			
Project Name : H710DI1	Title : Thermal Policy		
Size :	Document Number : HPMH-40GAB6600-B130		Rev : B
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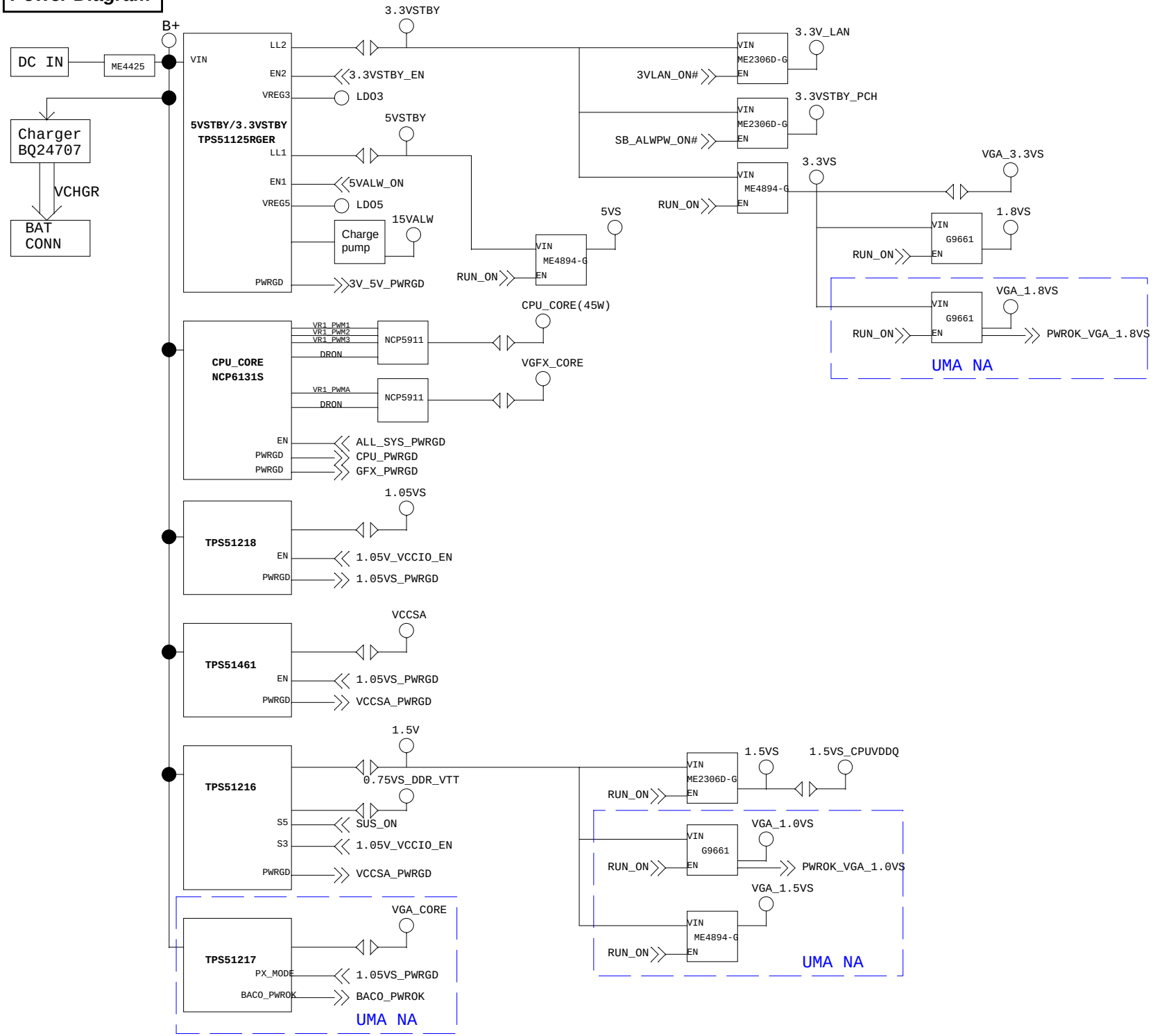
Power Diagram



FLEX Computing			
Project Name : H710DI1	Title : Power Diagram		
Size :	Document Number : HPMH-40GAB6600-B130		Rev : B
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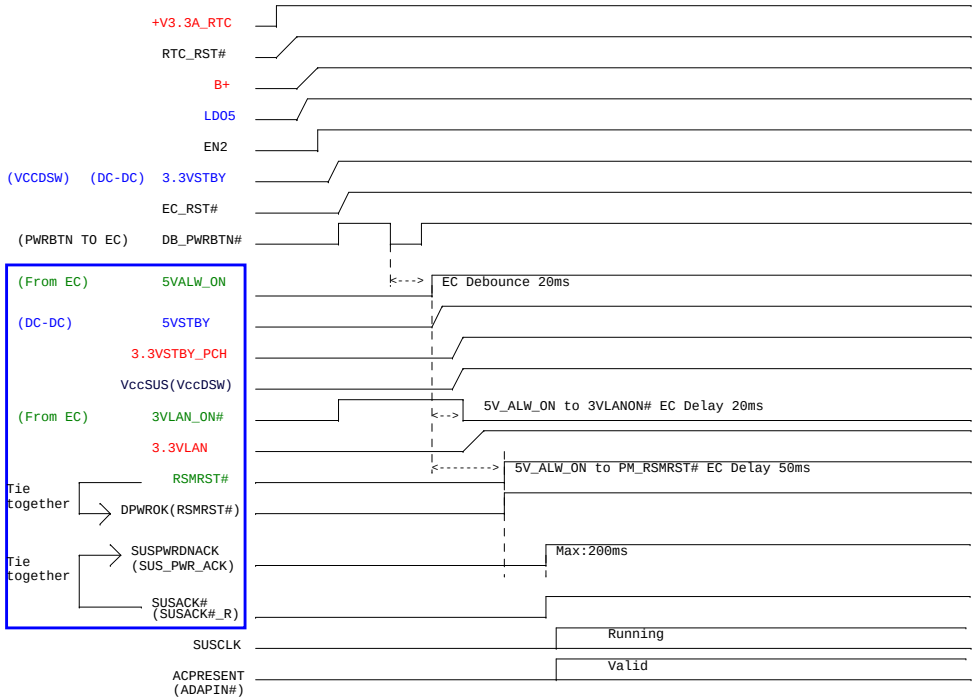
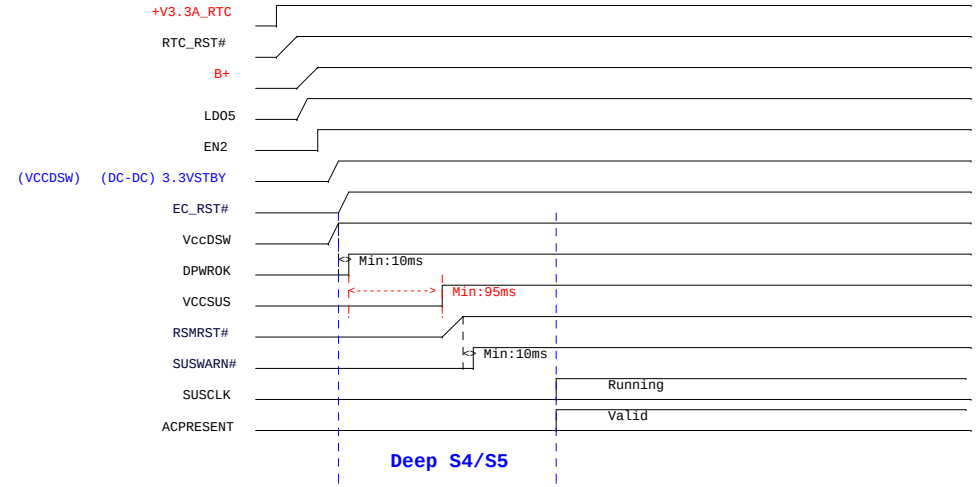
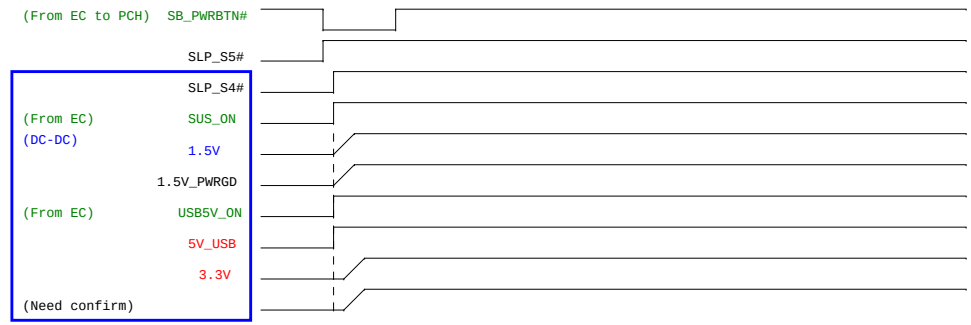
G3 to S0 (without Deep S4/S5)

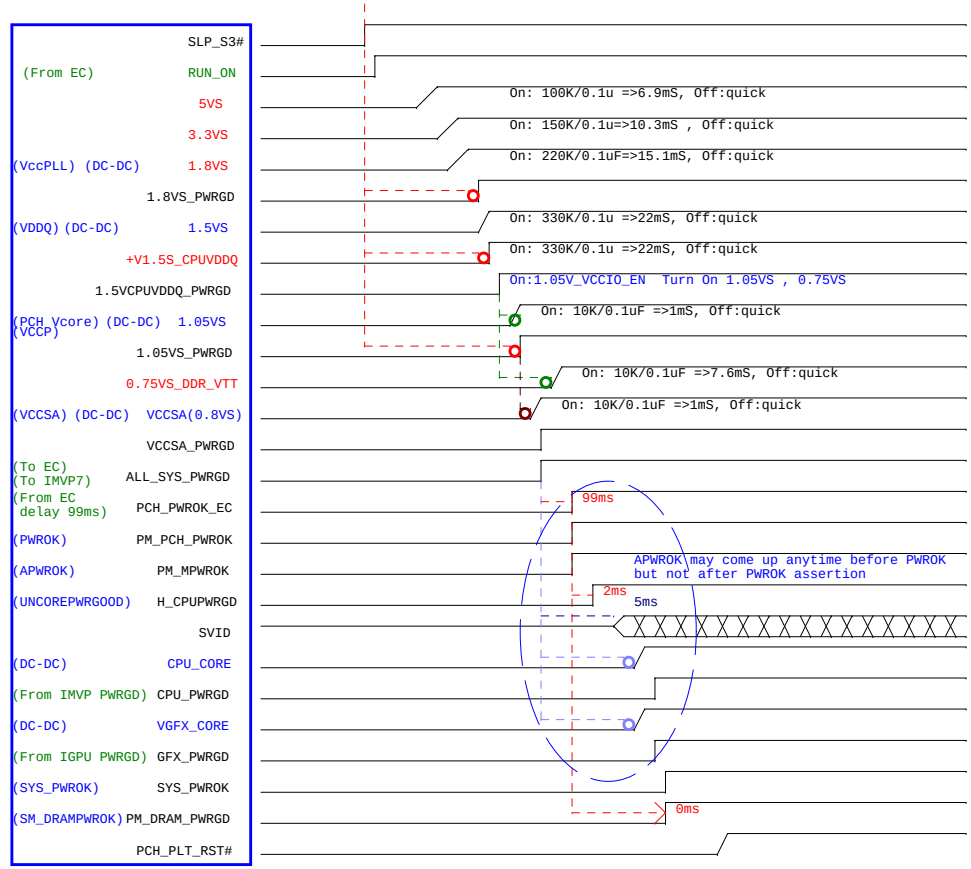


G3 to Sx (support Deep S4/S5) This Platform Without SUPPORT



S5 to S0





Blue: PWM

Green: EC

RED: MOSFET or Others

FLEX Computing			
Project Name : H710DI1		Title : POWER ON SEQUENCING	
Size :	Document Number : HPMH-40GAB6600-B130		Rev : B
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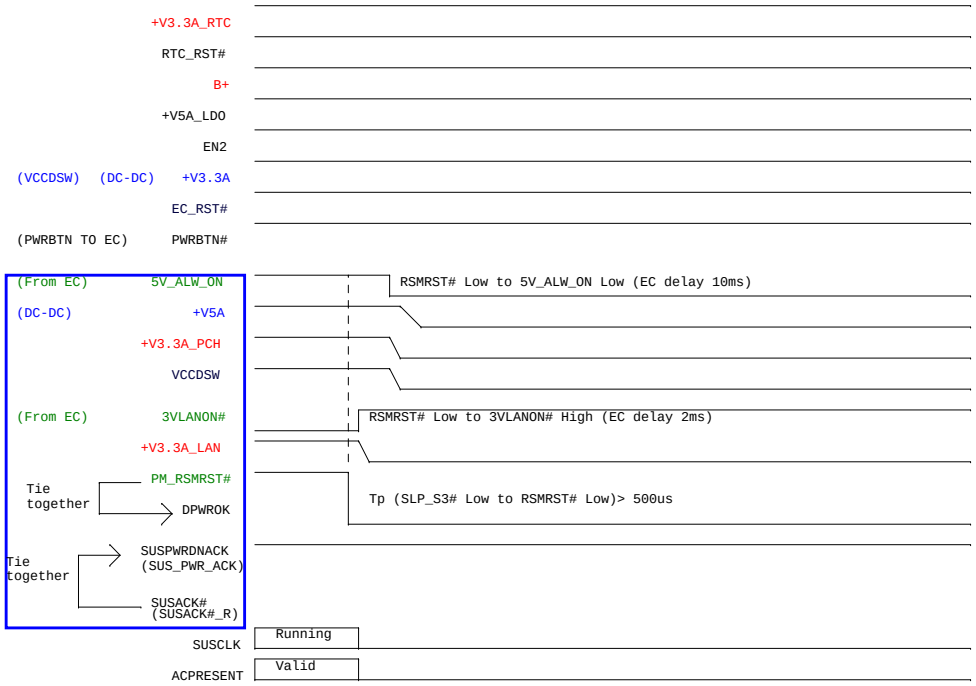
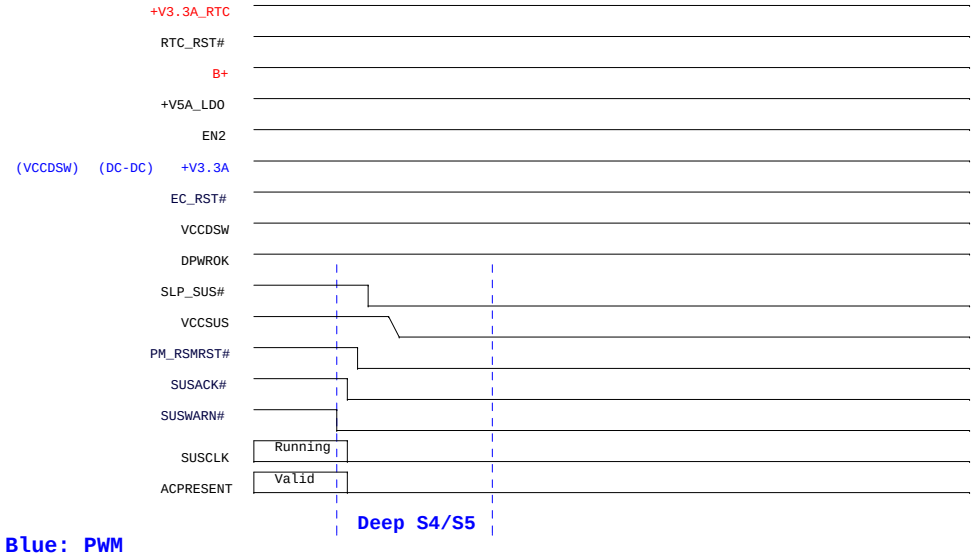
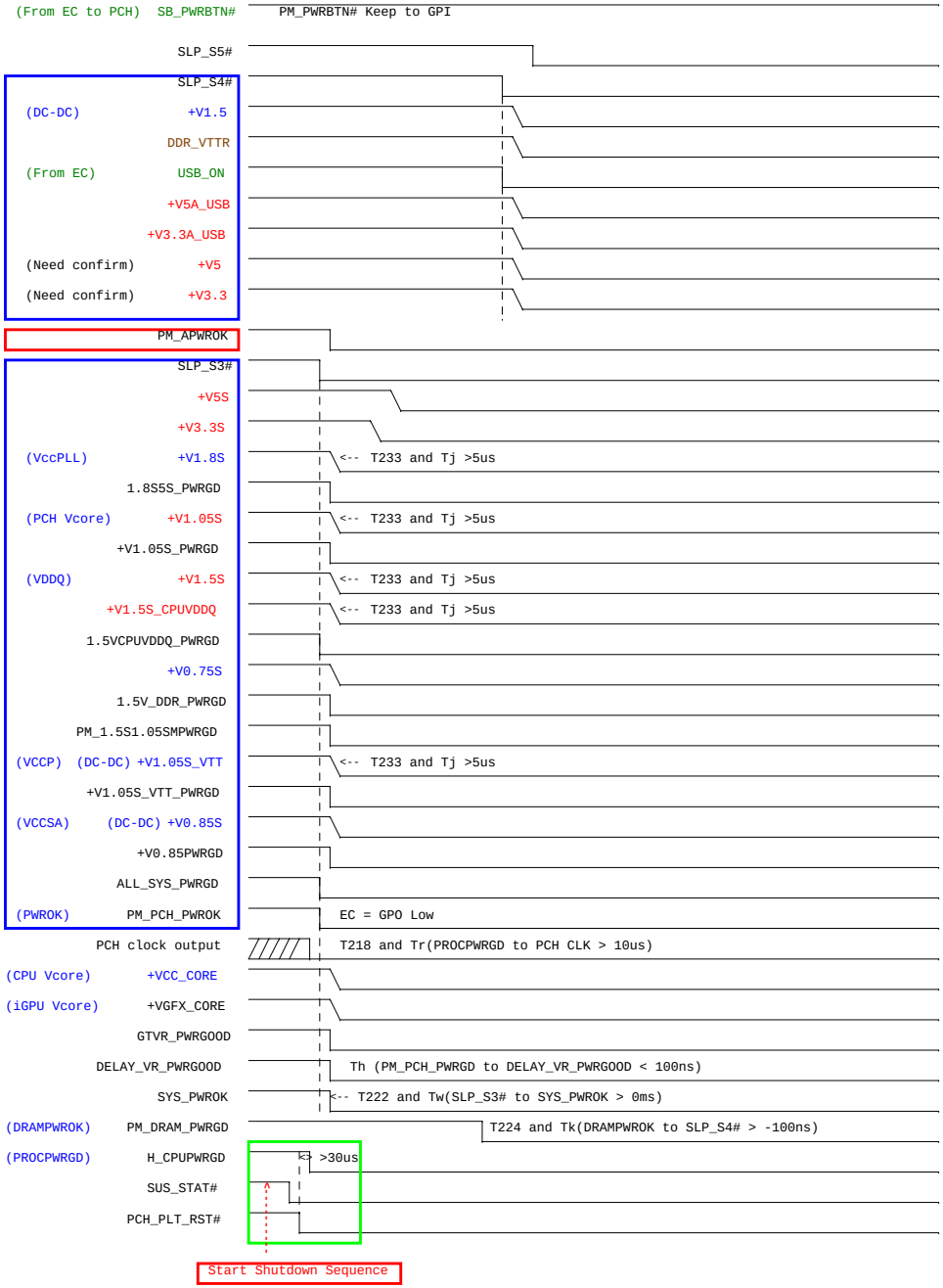
S0 to S5 (WoLAN Disable) (without Deep S4/S5)



S0 to S5 (support Deep S4/S5)



S0 to S4/S5



Blue: PWM

Green: EC

RED: MOSFET or Others

FLEX Computing			
Project Name : H710DI1		Title : POWER OFF SEQUENCING	
Size :	Document Number : HPMH-40GAB6600-B130		Rev : B
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HPMH-40GAB6100-A1A0
RJ6 B 10K(HPMH-30-301036-990G) 010
RJ804 B 10K(HPMH-30-301036-990G) 020
H10&H11 HPMH-75110-0000051G PWA NUT G AB610 020
PC99 HPMH-31-1F1067-900G 010
PC123 HPMH-31-163328-940G 010
PC124 HPMH-31-163328-940G 010
PR822 HPMH-30-178721-990G 020
PC805 HPMH-31-1F1067-900G 020
PR157, PR158, PR159, PR811 料號改爲HPMH-30-249991-990G
CB77 NA
CB78 NA
CN_KBL6 NA
M807 NA
M808 NA
R991 NA
R986 NA
C1006 NA
R1047 改爲HPMH-30-101546-990G RES CHIP 150KOHM J 0402
PR106 改爲HPMH-30-202241-990G RES CHIP 220Kohm F 0402
PC103 改爲上HPMH-31-1M1047-940G
CAP CERA CHIP 10V 100nF K X7R 0402
PR79改爲HPMH-30-202241-990G RES CHIP 220Kohm F 0402
PR148 改爲HPMH-30-301036-990G RES CHIP 10Kohm J 0402
PR839 改爲HPMH-30-301036-990G RES CHIP 10Kohm J 0402
C1090,C1091,C1092,C1093,C1087,C1086,R1065 NA
R1064,C540,C536,R1066,C1088 NA
Add HPMH-B2995007G00001 HDMI COST FOR CASABLANCA AB610

20100830(base on A1A0 modify for SI)
change footprint CAP0402_BGA to CAP0402
change footprint RES0402_BGA to RES0402
change PN HPMH-18-0020000168G to HPMH-18-0020000202G
change Q803 & Q8 frome HPMH-18-003904-900G to
HPMH-18-0000000021G
M814 & PD9 NA
change F801 footprit from POLYSW-SMDC035 to
FUSE-3L4X1W8X1H
Connect PROCHOT to IMVP7

20100831
Del R91
Change BT_DET# frome EC pin 73 to PCH PGIO6
Change BT_PWRON# frome EC pin 20 to PCH PGIO16
Add R1068,R1067,M822
R899 NA

20100901
Change U22 footprint SOIC8-50X286

20100906
change PR106 to 150K
modify new CN_KB6 footprint (CN-FPC-32P-1P0-2H)
modify new CN_CARD6 footprint CN-2IN1CARD-11P-3H85)
modify CN_WOF6 footprint to CN-WTB-2P-1P25-2H03

20100907
change H13,H14,H18,H19,H16,H17,H22,H23
footprint THR276B189_150
Modify CN_RTC801 footprint to CN-WTB-2P-1P25-4H9
Modify CN_WOF6 footprint to CN-WTB-2P-1P25-2H03
Modify CN_SPK7 to CN-WTB-4P-1P25-4H9
Modify R840/R841/R847/R848 2.49K change to 1.96K_F
(PN: HPMH-30-0000000183G)(RES CHIP 1.96Kohm F 0402)
Add R1069

20100910(A)
Del DPA34,R851 NA
Modify USB 3.0 SMI connect to PCH
Page 35 modify Audio Woofer Schematics
Page 28 modify Thermal Schematics
20100910(B)
Del PD9
C868 change to 1u/25V_0603 (PN: HPMH-31-0010000012G)
(CAP CERA 25V 1uF K X5R 0603)

20100911
ADD PC166-PC169 to 1500pF (PC166,PC167 NA)

20100913
modify C111 from 470uF to 330uF
Modify PR849,PR806 footprint to 0603 package
Add PR173(VRHOT# pull high)
PC876 change to 10nF
Delete CB803
Add FL1 (PJP804 open)
PR810 change to 2.2ohm.
Change PECI Pad36 to Pad820

20100915
Modify P56 M20 Description to 140m
Modify FL1 Part number to PN
Modify CN_DUSB6 P18 from 5VSTBY to GND
and footprint from CN-FPC-18P-0P5-2H to CN-FPC-18P-1P0-2H
Modify LVDS CONN footprint CN-LVDS-40P-1H95
to CN-LVDS-40P-0P5-1H4
Modify CN_RTC801 footprint to CN-WTB-2P-1P25-4H9
Modify CN_WOF6 footprint CN-WTB-2P-1P25-2H03
Modify CN_SPK6 footprint CN-WTB-4P-1P25-4H9
Change VMEM_CSA#B0(Pad 36 to Pad 820)
Change PECI (Pad820 to Pad36)
Change PCH(U811)PN to HPMH-10-0010000113G
IC Cougar Point PCH QNDL FCBGA989
modify U810 Pin40,Pin41,Pin43,Pin44
Add U808 Pin2,5,11,14 netname
Modify P36 USB3.0 from TI to NEC
Modify P37 USB3_1.1V to 1.05V_USB

20100916
modify Audio CN_SPK6 and CNSPK7 footprint again

20100917
modify CN_DUSB6 Footprint
Del PR165~PR172,Del PC170~173
Modify ODD Zero Power Schematics
NC_PCH_GPIO49 change to SATA_ODD_PRSNT#
SATA_ODD_PRSNT#(GPIO36) change to NC_PCH_GPI36
Del Pad29 R964 , Add R1110
Add C1119 for SERIRQ,C1120 for LPC_CLK
Modify PR877 to 26.1K ,PR144 to 80.6K
U19 PIN 73: 換成THERM_ALERT#(本來的pin78) ,
原本的 BT_DET# 移除 (Intel change to SB)
U19 Pin78: 換成AC_OFF, 原本的THERM_ALERT#移到Pin73
Add PQ826 and PR879
Add M823 M824 for Touch Pad LED
Add JS845,M825 for USB3.0 SMI
Update M.E. modification of screw holes (H20,H25)

20100923
modify PR160 to 4.7K(HPMH-30-247011-990G)
modify PR163 to 39K(HPMH-30-139021-990G)
modify PL810 to 0.47uH (HPMH-32-4000000227G)
PC113 change to MOUNTED
PR108 change to 1 ohm and mounted.(HPMH-30-200106-950G)
PC119 change to 470PF/50V and mounted (HPMH-31-104717-940G)
PR851 change to MOUNTED
Add PQ13,PQ20,C1130,C1131,PC77,CB84,CB842~CB846
Del PJP8,JS32,D8,M28,R301
C860, C48 change from N.A to 33pf
EC817, EC818 change from N.A to mount (220PF)
CB60, CB61 change from N.A to mount (150pf)
原BACO_PWROK(GPIO2)改爲NC_PCH_GPI2
DGPU_PWROK (GPIO17) 改爲BACO_PWROK
NC_PCH_GPI50 (GPIO50) 改爲dGPU_HOLD_RST#
NC_PCH_GPI54 (GPIO54) 改爲DGPU_PWR_EN#
VGA_1.8VS, VGA_1.0VS, VGA_3.3VS,VGA_1.5VS,VGA_CORE
的enable改爲DGPU_PWR_EN
R879 ,R880 改爲L879,L880
EC810, EC811, EC812, EC813 change from N.A to 220pf
ED802, ED801, ED803, ED804 change from N.A to mount
(Flex P/N: HPMH-21-0200000012G, Footprint: CAP0603)
EC804, EC805, EC806, EC807 change from N.A to 220pf
PC870, PC871 change from 47pf to N.A
PR805, PR124, PR126, PR127 change from N.A to short pad
PR805, PR124, PR126, PR127 change from N.A to short pad
PC136, PC137, PC140, PC810 change from N.A to 1000pf
PR810, PR153, PR154, PR151 change from 0ohm to 2.2ohm
Add C1132 for KB_RST#
PR847 change from N.A to short pad
PC857 change from N.A to 1000pf
PR107 change from N.A to short pad
PC104 change from N.A to 1000pf
(C49, C509, C532, PC835, PC122, PC106, PC57,
PC48, PC878, PC811, PC801, PC802, PC813
C256, C60, C84, C337, C473, C236, C533,
C541, C539, C108, C506, C163 change from N.A to 0.1uf)
Add C1133~C1145
Add EM1~EM5
JS14/JS13/JS35/JS830 footprint change to RES0603-SHORT05
change C1037 to 0603 25V
Modify CN_DUSB6
Change R1108 to 10K
Change C234,C235,C942,C944 to 0.1uF

20100920
C158 change to NA for 1.05VS leakage
Modify C141 & C133 to 15PF for RTC
Add C1121 for FPVCC soft start
Add Y9 PN

20100921
Modify M14 to P MOS,R924 change to 100K
Del M804, Add R1111,C1122
Change USB3.0 POWER netname from 3.3V to 3.3V_USB
Add 3.3V SUS Power, Add R1112, R1113, C1123 , M826 M827
Add C1124,C1125 for 5VSTBY to GND (for noise)
Add C1127,C1128 for 1.05VS to GND (for noise)
Change C487,C407 to CPU Core for POWER
Add C1126 for 1.5VS_CPUVDDQ
Add C1129 for PROCHOT#

20100924
USB3.0 CONN (CN_US3S802,CN_US3S801)
footprint change to CN-USB3_0-9DIP-7H67-RVS
JS14/JS13/JS35/JS830 footprint change to RES0603-SHORT10
H8 THR213B315_110
H9 THR268B276_110
H20 THR236B276_110
Add R1114
Change U19(KBC)PN to HPMH-10-0090000025G
Del L823,L824,L822 for DFX
C193改爲22nF(HPMH-31-142237-950G
CAP CERA CHIP 25V 22nF K X7R 0603)
Y8改料號爲HPMH-35-0010000106G
X'TAL 32.768KHz QTFM28-32768K125P10R
Del PJP815,L9,R155
Add PC879
Add RJ806(for platform ID)
Add RJ807(for PWA rev)
Add U20 (USB3.0) PN
PR144 change to 0402 size
R165 from NA to MOUNTED
Change R909 to 1K

20100925
Modify USB3.0 power from 3.3V to 3.3_USB
Add U822,C1129 PN
CN_KBL6 from Mounted to NA
R853 change from 22 ohm to Bead 600ohm
(Flex P/N: HPMH-32-2000000092G)
C859 change from N.A to 22pf
C878, C879 change from 10pf to 6.8pf
(Flex P/N: HPMH-31-0000000031G)
Add C1146~C1149 (modify below)
ADD 1pcs 0.1uf capacitor between B+ and GND
ADD 1pcs 4.7uf capacitor between B+ and GND
ADD 1pcs 0.1uf capacitor between 3.3VSTBY and GND
ADD 2200pf capacitor between PQ10 pin4 and GND
PC119 change from N.A to 1000pf
PR108 change from N.A to short pad
PC113 change from N.A to 1000pf
PR98 change from 0 ohm to 2.2 ohm
PC47, PC72 change from N.A to 1000pf
PR93, PR56 change from 2.2 ohm to short pad
PC90,PC51 from NA to MOUNTED
Change R1109 pull hight from 3.3V_USB to 3.3VSTBY_PCH
Add JS846

20100926
Modify USB3.0 net USB_USB30PORT1_N
and USB_USB30PORT1_P (SWAP)
Modify USB3.0 net USB_USB30PORT0_N
and USB_USB30PORT0_P (SWAP)
Add R1115 for Intel recommend
Add L9 C1150

20100927
Add C1151
R851 from NA to MOUNTED
modify ME4,ME5 footprint same as ME1
Add D812 prevent leakage from EC to VGA

20100928
change C868 PN to 1uF/25V HPMH-31-0010000012G
PC836 pin 2 change to DGND
C1151 pin2 改爲UGPU_PWR_SRC
Del M17 ,USB3_PWR_EN# connect to RJ9 pin1
Swap USB_TOUP_N ,USB_TOUP_P
Swap USB_TOUP_N_R,USB_TOUP_P_R
Modify VGA Power from 15W to 35W
Modify U819 Add pin VFB and GFB and PWRPLAY_VID2

20100929
Change C1132 to 18p
PR856=1K_F(HPMH-30-210011-990G)(copy PR116)
PR121=24.9K_F(HPMH-30-124921-990G)(copy old PR856)
PC865=2200PF(HPMH-31-102227-940G)(copy C1149)
PC108=220PF(HPMH-31-102216-940G)(copy EC806)
PC127=15PF(HPMH-31-301506-940G)(copy C133)
PR123=4.02K_F(HPMH-30-240211-990G)
PC123=2200PF(HPMH-31-102227-940G)(copy C1149)
PR871=PR875=PR869=140K(HPMH-30-0000000104G)
PR144 change to 69.8K(HPMH-30-269821-990G)
PC124 change to 2200pF(HPMH-31-102227-940G)(copy C1149)
PC113, PC119 change to 470PF/50V
and mounted (HPMH-31-104717-940G)
PR98 change from 2.2 ohm to 0 ohm
PR153, PR154, PR151 change to 0_0603 (HPMH-30-000006-950G)
PC857 change to NA
L879, L880 change to 33ohm
C878, C879 change to 10pf
modify PU7 pin M5
FL1 NA
update P57 AGND to DGND

20100930
modify PC801,PC811 pin2 to 5VSTBY
modify HDMI HP-DET schematics

20101003
modify PC801,PC811 to 25V 1uF K X5R 0603
modify C1132 to 50V 1000pF J X7R 0402
modify PR16, PR17, PR18,PR24 to 3.01KOHM F 0402
modify PC13, PC14, PC12, PC19 to 50V 220pF 0402
modify PR42, PR41 to 110Kohm F 0402
modify PL803,PL801 to 1uH M PCMC104T-1R0MN
modify PR49, PR52 to 0ohm J 0603

20101004A
modify PQ826 Libraries

20101004B
modify PR10 NA, mounted PR9
PR34 NA
PR8 changes to mount 90.9K (HPMH-30-0000000130G)
PR25 change to 3.01K (HPMH-30-230111-990G)

20101007
modify Subsystem ID
R272 R273 modify to 100ohm

20101008
Modify C408 C487 from NA to Mounted
Change R1070 PN to 10 ohm 1206

20101013
HPMH-40GAB6100-B1A0 FAI build for temporary solution:
Original PN for HPMH-40GAB6100-B1A0 SKU1 build
1. M/B:38-0020000031G
CONN VGA 15P DS15146BAC067 DIP
HPMH-38-0020000029G
CONN VGA 15P 2DS1557-000111 DIP
2. M/B:38-00F0000019G
CONN HDMI 19P HD19E46BA3062 DIP
HPMH-38-00F0000017G
CONN HDMI 19P 2HE1565-000111 DIP
3. USB/B:31-0800000003G
CAP OS-CON 6.3V M 220uF 6SVPE220MX
HPMH-31-0730000029G
CAP SP 6.3V 220uF M MP6VLPS220MC4R2

↑ 10/19 REV.B100

change to Rev.C
1.modify CN_LVDS6 pin swap
2.Add R1116 for HP LOGO
3.Modify PQ826 footprint
4.PR15 Pin 2 changes from 3.3VS to 5VS.
5.PR34 mounted and change to 90.9K (HPMH-30-0000000130G) for voltage slew.
6.PR8 changes NA.
7.Pin 1 of PR10 changes from 3.3VS to 5VS.
8.PR49 and PR52 change from 2.2 ohm to 0 ohm (HPMH-30-000006-950G)
9.PC17 and PC16 change from 1uF to 0.22uF (HPMH-31-0020000064G)
10.PQ807 and PQ805 change from FDSM7692 to NTMFS4926N (HPMH-18-0020000247G)
11.PQ806 and PQ801 change from FDM0308S to NTMFS4935N (HPMH-18-0020000246G)
12.PL803 and PL801 change from 0.45uH to 0.56uH (HPMH-32-800562-020G)
13.PR6 changes from 20K to 64.9K (HPMH-30-164921-990G). (not 54.9K)

20101022
1.R277,R268 change from 10K to 1K for PX_EN_VGA_CORE rise time
2.swap LB17(1,4 pin對調;2,3 pin對調)
3.SW6 NA(sw6 for debug use)
Del CE6 , CE801,Add CE1 for USB3.0 cost

20101025
1.modify U25 Main source to HPMH-12-007408-620G

20101027
1.modify PCB PN to HPMH-41-AB6200-C00G
2.Add HDMI Label
3.Add Intel CPU PN table in P2
4.Add Intel PCH PN table in P12
5.Add R1117 100ohm for HP LOGO(eDP Conn)
Page 37
6.Update the net name of PU801 pin 3 as 1.5V_G9661.
7.Update the net name of PU801 pin 4 as 5V_G9661
Page 40
8.PR100 change to 0805 size (HPMH-30-201006-900G)
9.PC80 change to 0603 size (HPMH-31-0010000012G)
Page 41
10.PR69 change to 34.8K_F (HPMH-30-234821-990G)
11.PR68 change to 22K_F(HPMH-30-222021-990G)
Page 43
12.PR127, PR126, PR124, PR805 change to 1 ohm 5% (HPMH-30-200106-950G)
Page 44
13.update switching frequency to 430KHz
14.update OCP to 15.54A
Page 45
15.update switching frequency to 700KHz
Page 46
16.update the value of PL812 to PCMC104T-1R0MN
17.update OCP to 19A
Page 57 (please replace whole page),
18.update VID table for 35WDGPU(x2) and 15WDGPU (x1)
19.PR7 change to 15K_F and to be NA (HPMH-30-0000000078G)
20.PR10 change to mounted.
21.PR9 change to NA.
22.Pin1 of PR30 change to 5VS.
23.PC9 change to NA.
24.Pin2 of PR45 change to GND and to be NA
25.PR23 change to 30K_F and to be NA (HPMH-30-130021-990G)
26.modify R1070 footprint 1206 to 0805
27.modify L13 PN and footprint to 0603
28.modify USB3.0 power 3.3V_USB and 3.3V_USB_VDDA

20101028
1.Add pad29 for BIOS test
2.LB17 SWAP
3.change M23 from ME2N7002E to ME2N7002W
and footprint from SOT-23A to UMT-23
4.change C111 PN to HPMH-31-6B337Y-130G
5.D805 pin 3 pn2 swap for layout trace

20101029
1.modify U822 footprint
2.modify Page1 Block
3.modify PR34 as 150K
RES CHIP 150Kohm F 0402 HPMH-30-115031-990G

20101030
1.modify PC90 to CB90
2.modify PC835 to CB848
3.modify PC122 to CB122
4.modify PC106 to CB106
5.modify PC57 to CB5
6.modify PC48 to CB48
7.modify PC878 to CB878
8.modify PC802 to CB803
9.modify PC813 to CB847
10.modify PC51 to CB49
11.modify PC801 to CB4
12.modify PC811 to CB3
13.modify RJ6 from B to A for PV PWA.Rev
14.Add RJ808 and RJ809
15.Del R68 & R59

20101101
1.modify D805 Pin2 and Pin3
2.Del C1103,C1106,C1107
3.modify C1109 to 0.1uF/10V
4.PJP822 change footprint to JUMPER3P5-SHORT
5.Add two PC880,PC881 (68uF/25V) at B+
6.Delete PJP6

20101102
1.Add R1118 for GPU_TRIP#
2.R852 NA
3.PR70 change to 54.9K
4.R1052,R1050,R1051,C1081,Q803,M820 NA
5.CB67, CB62, CB57 change from 22pf to 33pf =>EMI
6.CB58, CB64, CB68 change from 22pf to 10pf =>EMI
7.Add EC820,EC821,EC822,EC823 =>EMI
(PWR_LED and GND,HDD_ACT_LED# and GND
HDD_PARK_LED# and GND)
8.CB834,CB833,CB832,CB831,CB830,CB825,CB824,
CB823,CB821 change from N.A to 100pf
9.C878 change from 10pf to 6.8pf
10.C879 change from 10pf to 4.7pf
11.Add EC824 between CR-SD_3V3 and GND
12.EC801, EC13, EC17, EC11 change from N.A to 0.1uf
13.EC810, EC811, EC813, EC812 change from 220pf to N.A
14.ER801,ER802,ER803,ER804 change from
shout pad to Bead 220ohm (HPMH-32-2000000106G)
15.modify ER801,ER802,ER803,ER804 footprint
from shout pad to L0805
16.Add CB849,CB850,CB851,CB852,CB853
17.modify CN_PBTN6 from 6 pin to 8 pin
18.modify LID to PWRBTN BOARD
19.Add 0.1uf*2pcs to net VCHGR CB854,CB855
20.Add 0.1uf capacitor between CHG_LED# and GND
CB856
21.modify RJ9 to B

20101103
1.M825 from mounted to NA
2.PR801 form 261K to 39K ohm for power up before USB3_PONRST#
3.Add metal spring EM2
4.L801, EL8 change from Bead 120ohm to Resistor 300ohm
5.Add ED810 between net SENSE A and GND
6.ED809, ED14 NA but change footprint and PN
(HPMH-21-0200000012G, Footprint: CAP0603)
7.ED13, ED11 change from N.A to mount,change footprint,PN
(HPMH-21-0200000012G, Footprint: CAP0603)
8.ADD ESD protection component between net SENSE_A and GND
(HPMH-21-0200000012G, Footprint: CAP0603)
9.Add R1119 for PX_EN
10.modify net PROCHOT_EC# to PROCHOT_EC
11.modify EC pin73 from THERM_ALERT# to DGPU_PWR_EN
12.Add JS43.JS44,JS45 between 24707AGND and GND
13.CB69, CB63, CB59 change from 22pf to 33pf
14.Add D107
15.Add M828 R1120 for VGA_3.3VS
16 net N22020819 change net name to DGPU_EN#

20101104A
1.Add PR883,PR884,PC882
2.modify PC880,PC881 footprint
3.Del PC28
4.Add VGA_CORE TDC/OCP table

20101104B
1.CB52,CB53,CB65,CB66 just change
component dimensions to ED52,ED53,ED65,ED66
2.Change ED52,ED53,ED65,ED66 PN to
HPMH-21-0200000012G, Footprint: CAP0603
3.Delete CB42,CB43
4.ED805,ED806,ED807,ED808 change
PN HPMH-21-0200000012G, Footprint: CAP0603
5.ED801 pin2 change from GND to AGND

20101105A
1.Change ED52,ED53,ED65,ED66 PN to
HPMH-21-0200000009G, Footprint: CAP0402
2.ED805,ED806,ED807,ED808 change
PN HPMH-21-0200000012G, Footprint: CAP402
3.ED801 pin2 change from AGND to GND
4.ED810,ED15 change from GND to AGND
5.Add CB879 between 5VSTBY and GND
6.Add D816.R1121,JS834,M829
7.PR30,PR802 change pin1 to VGA_3.3VS

20101105B
1.PR820 change pin1 to VGA_3.3VS

FLEXComputing
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