

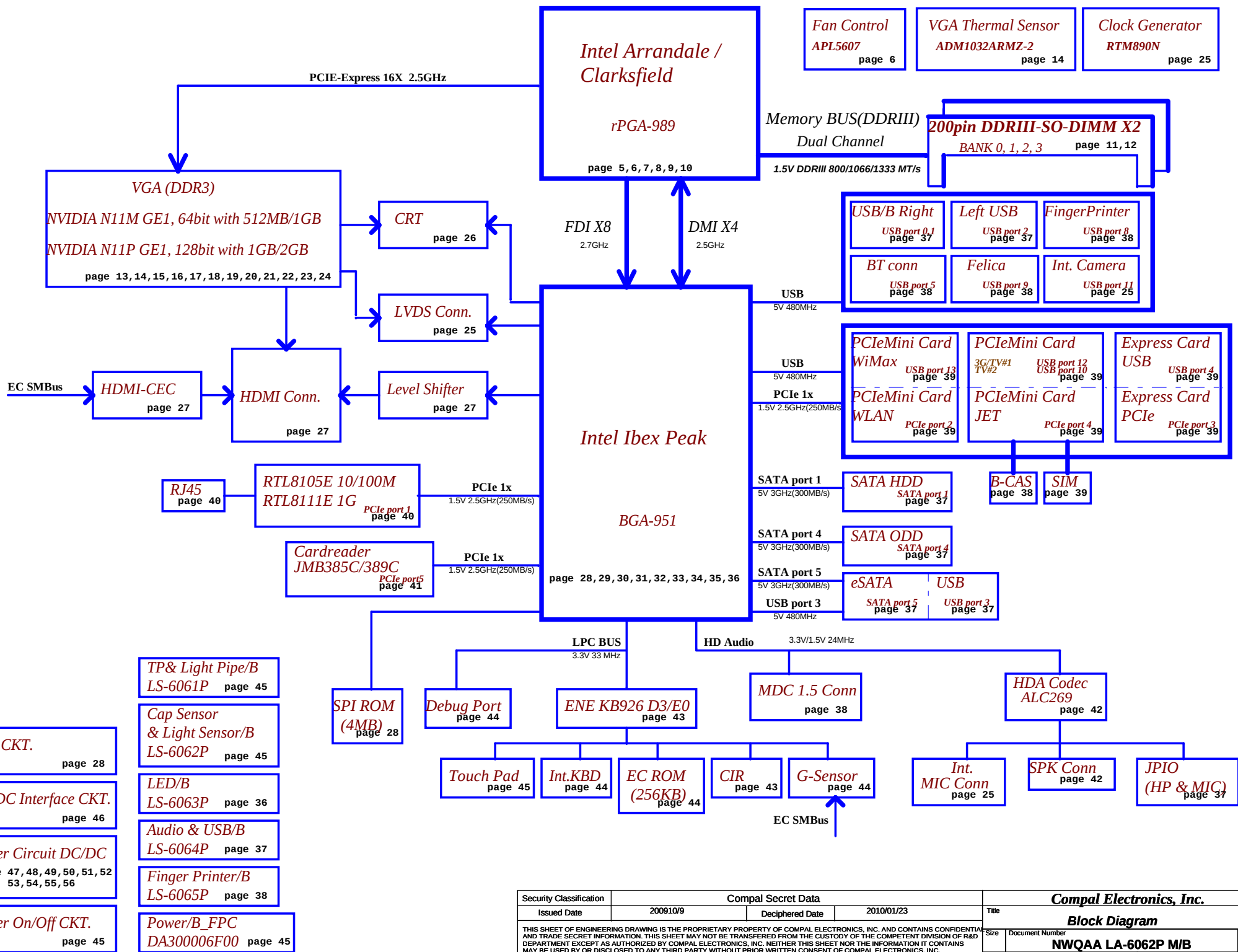
NWQAA

Marseille 10G

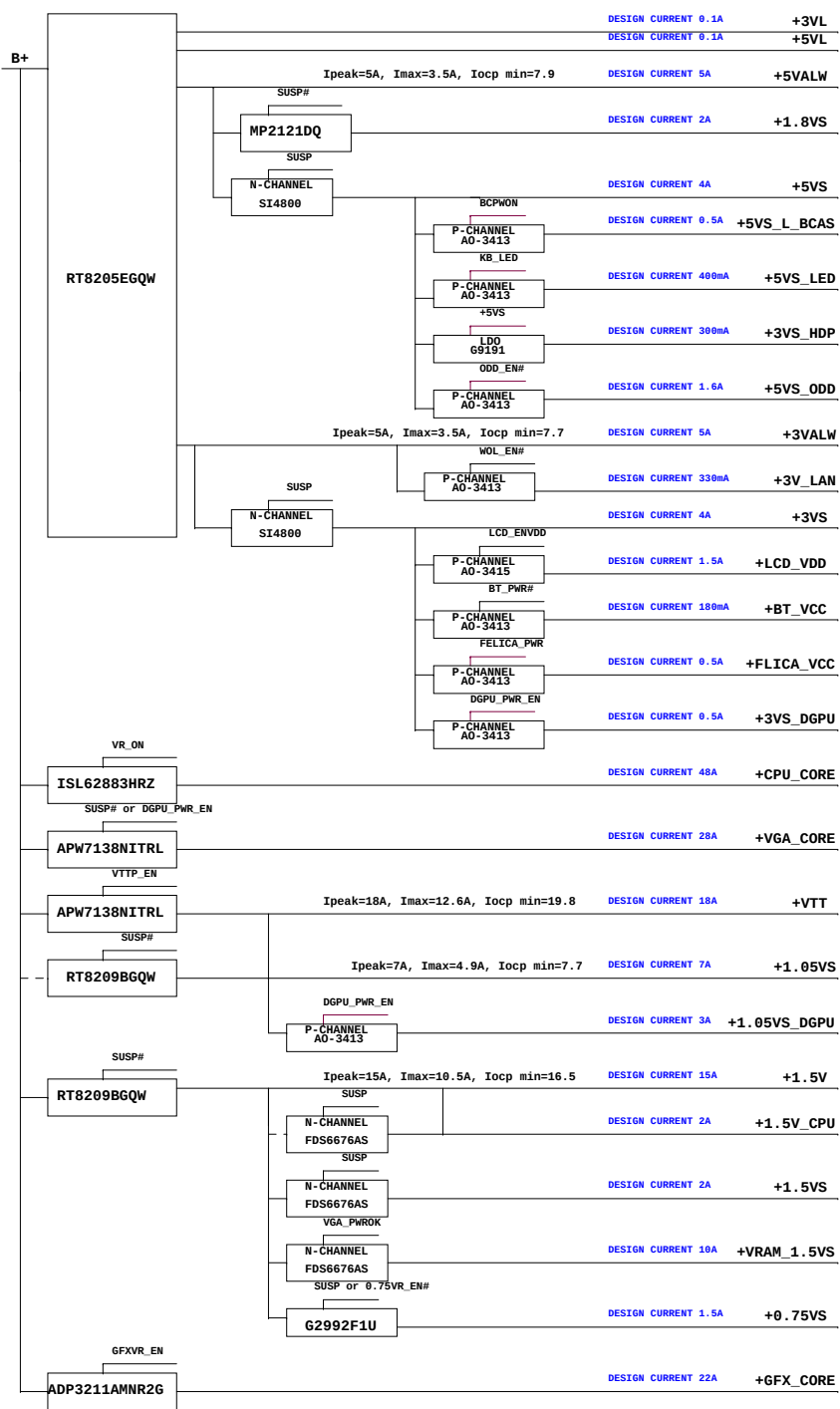
LA-6062P REV 2.0 Schematic

**Intel Processor (CFD/ARD) / PCH (HM57/HM55/PM55)
2010-03-24 Rev 2.0**

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Voltage Rails (0 MEANS ON X MEANS OFF)

power plane State	+RTCVCC	B+	+5VL +3VL	+5VALW +3VALW +VSB	+1.5V	+5VS +3VS +1.8VS +1.5VS +1.05VS +0.75VS +CPU_CORE +VGA_CORE +GFX_CORE +VTT +VRAM_1.5VS +3VS_DGPU +1.05VS_DGPU
S0	0	0	0	0	0	0
S1	0	0	0	0	0	0
S3	0	0	0	0	0	X
S5 S4/AC	0	0	0	0	X	X
S5 S4/ Battery only	0	0	0	X	X	X
S5 S4/AC & Battery don't exist	0	X	X	X	X	X

PCH SM Bus Address

Power	Device	HEX	Address
+3VS	DDR SO-DIMM 0	A0 H	1010 0000 b
+3VS	DDR SO-DIMM 1	A4 H	1010 0100 b
+3VS	Clock Generator	D2 H	1101 0010 b
+3VS	New Card		
+3VS	WLAN/WIMAX		
+3VS	Clock Generator		
+3VS	3G		

EC SM Bus1 Address

Power	Device	HEX	Address
+3VL	Smart Battery	16 H	0001 0110 b
+3VL	HDMI-CEC	34 H	0011 0100 b
Power	Device	HEX	Address
+3VL	Cap. Sensor		Virtual I2C

EC SM Bus2 Address

Power	Device	HEX	Address
+3VS	PCH	96 H	1001 0110 b
+3VS	NVIDIA GPU	9A H	1001 1010 b
+3VS	G-Sensor	40 H	0100 0000 b
+3VS	Light Sensor	52 H	0101 0010 b

Platform	SKU	CPU	PCH	VGA
Calpella	UMA(OPT@)	Arrandale	HM55@/HM57@	N/A
	Discrete (DIS@)	Clarksfield/Arrandale	HM55@/HM57@/PM55@	N11P@/N11M@
	Optimus (OPT@)	Arrandale	HM55@/HM57@	N11P@/N11M@

BTO Option Table

Function	HDMI				CPU		
description	HDMI				Arrandale	Clarksfield	
explain	UMA	Discrete/Optimus	COMMON	CEC	Arrandale	Clarksfield	Clarksfield with S3 Power Saving
BTO	IHDMI@	DHDMI@	HDMI@	CEC@	M1@	M3@	PSM3@

Function	MINI PCI-E SLOT			LAN		Fingerprint	Modem	CIR	KB Light
description	SLOT2		SLOT1	LAN		Fingerprint	Modem	CIR	KB Light
explain	3G	TV Tuner	WIMAX	10/100M	Giga	Fingerprint	Modem	CIR	KB Light
BTO	3G@	TV@	WIMAX@	8105E@	8111E@	FP@	MDC@	CIR@	KBL@

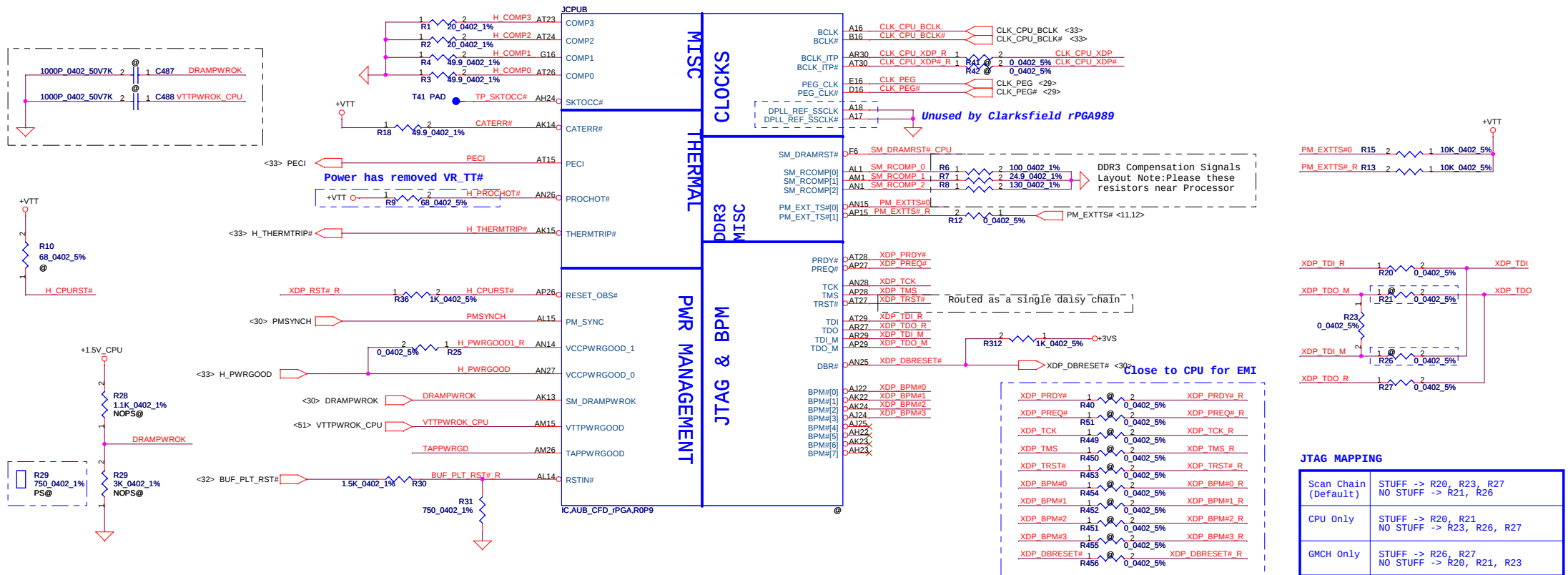
Function	Felica	BLUE T00TH	G-SENSOR	SKU		LVDS		Camera & Mic	
description	Felica	BLUE T00TH	G-SENSOR	SKU		3D Panel		Camera & Mic	
explain	Felica	BLUE T00TH	G-SENSOR	Discrete	Optimus	Discrete		Optimus	Camera & Mic
BTO	FELICA@	BT@	GSSENSOR@	DIS@	OPT@	3D@	NO3D@	OPTFH@	CAM@

Function	S3 Power Saving		GPU					New Card
description	S3 Power Saving		N11P & N11E			N11M		New Card
explain	No Power Saving	Power Saving	VRAM	N11P	N11E	N11M-GE1	N11M-OP1	New Card
BTO	NOPS@	PS@	8PCS@	N11P@	N11E@	N11MGE@	N11MOP@	NEW@

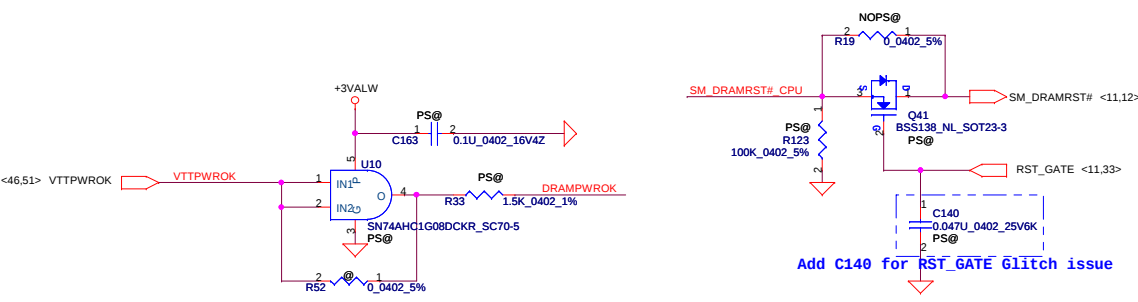
Function	Card reader	
description	JMB385C/389C	
explain	JMB385C	JMB389C
BTO	JMB385@	JMB389@

STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#
Full ON		HIGH	HIGH	HIGH
S1(Power On Suspend)		HIGH	HIGH	HIGH
S3(Suspend to RAM)		LOW	HIGH	HIGH
S4(Suspend to Disk)		LOW	LOW	HIGH
S5(Soft OFF)		LOW	LOW	LOW
G3		LOW	LOW	LOW

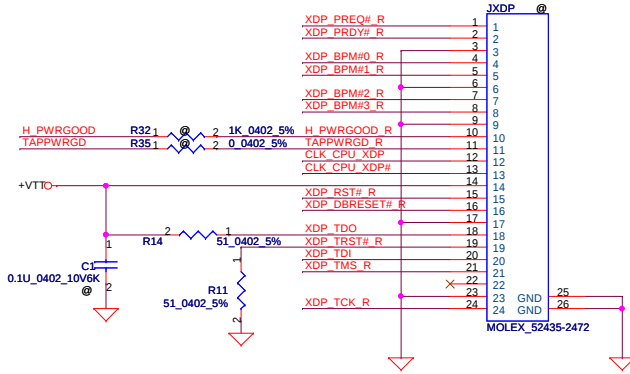
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								Size Custom	Document Number
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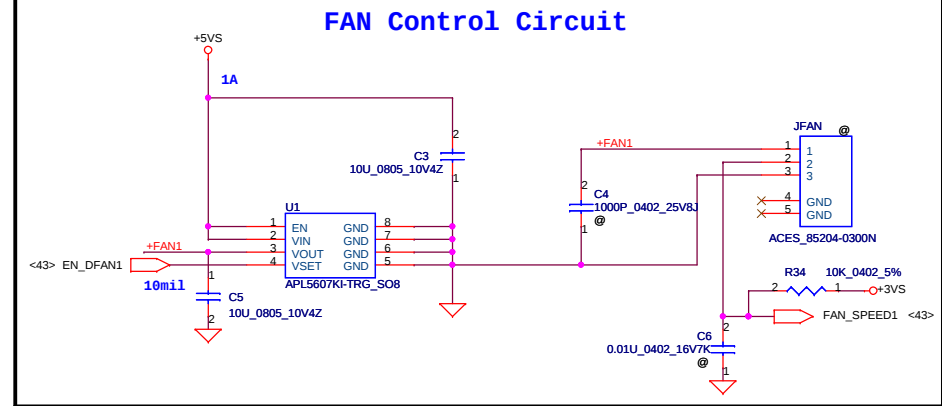
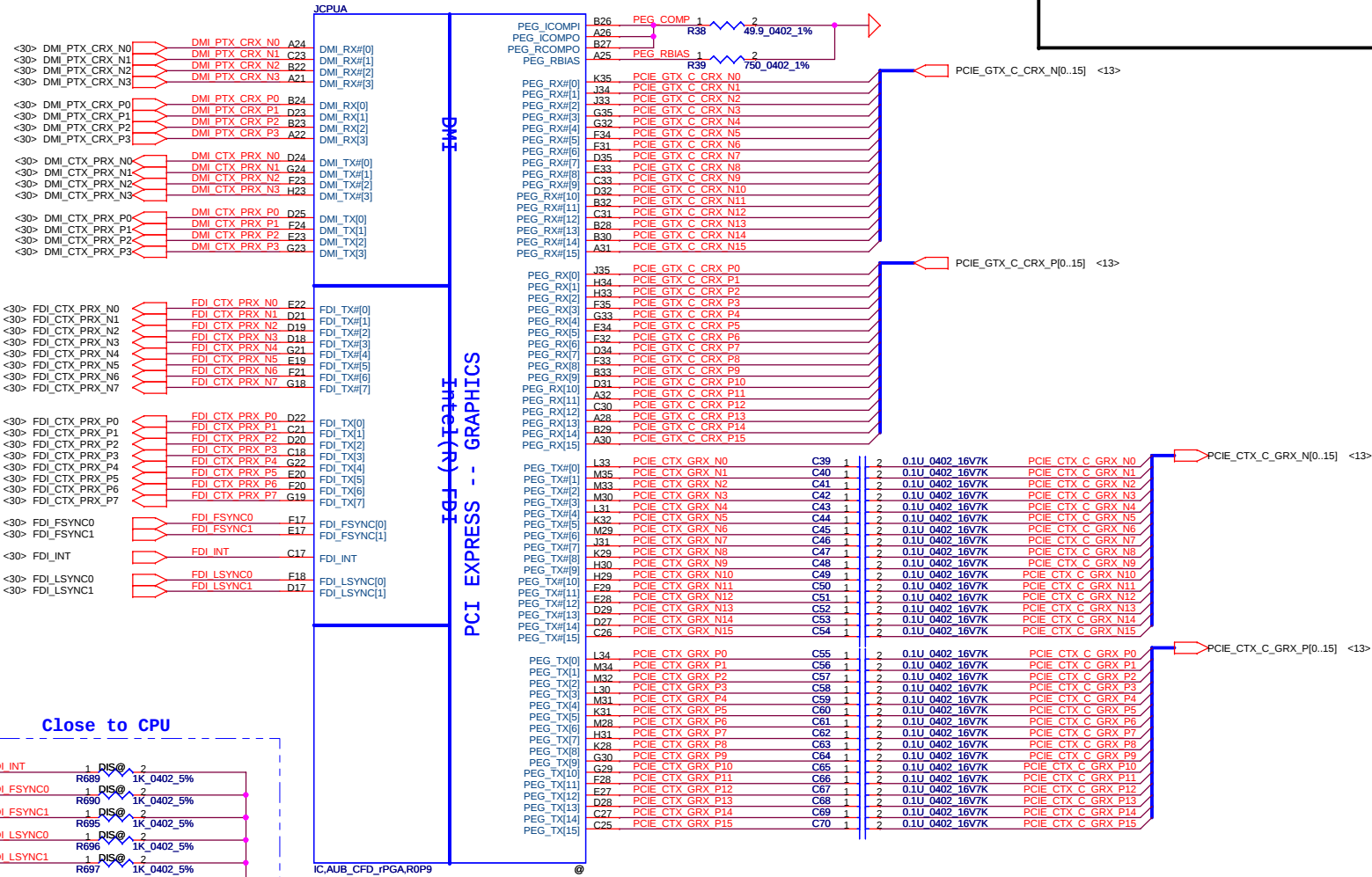
For S3 CPU Power Saving



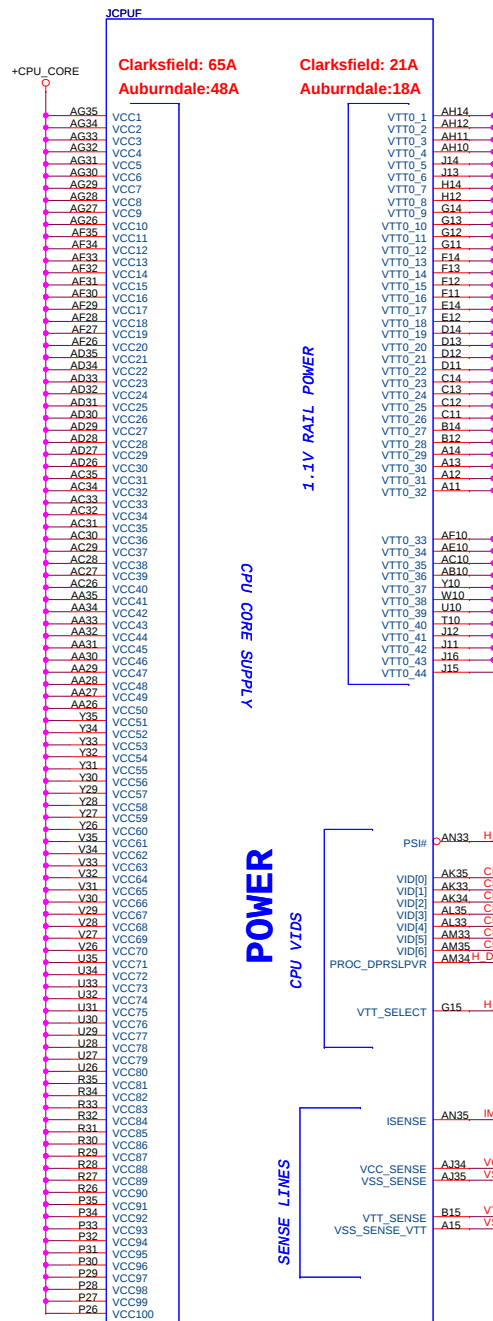
XDP Connector



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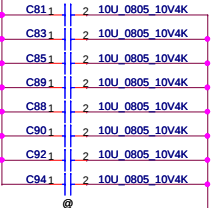
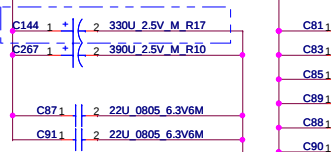
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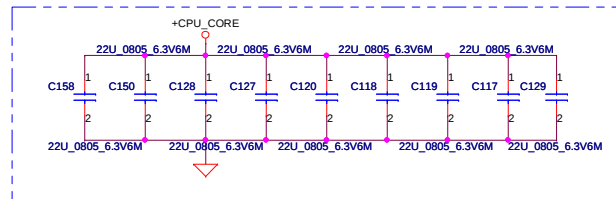
Material Note (+VTT):
390uF/ 10mohm, number are 3,
power x1, HW x2

(Place these capacitors under CPU socket Edge, top layer)

Change C144 to 4.5mm height at DVT



5/25: Add for power team request.

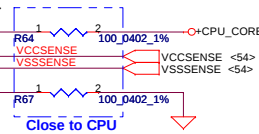


CRB default setting:
VID[6:0]=[0100111]

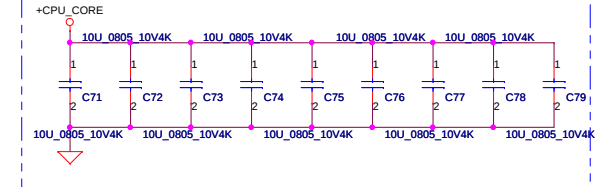
VTT Rail

Auburndale +1.1VS_VTT=1.05V
Clarksfield +1.1VS_VTT=1.1V

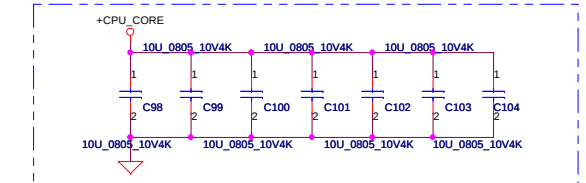
H_VTTSELECT = low, 1.1V
H_VTTSELECT = high, 1.05V



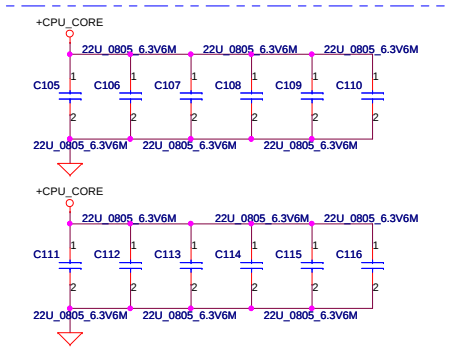
(Place these capacitors between inductor and socket on Bottom)



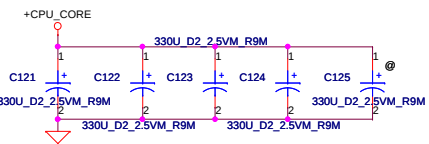
(Place these capacitors under CPU socket, top layer)



(Place these capacitors on CPU cavity, Bottom Layer)



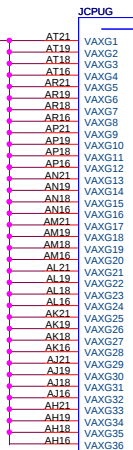
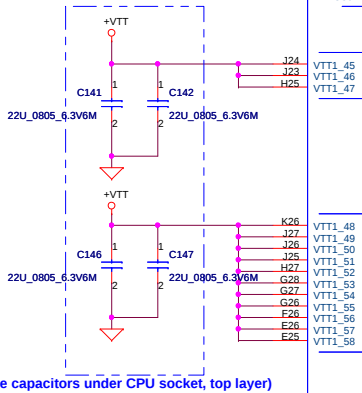
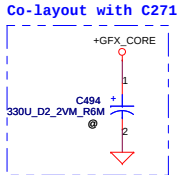
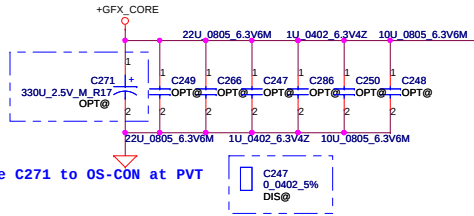
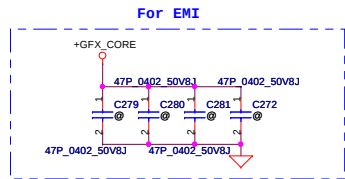
TOP side (under inductor)



Check list:

+CPU_CORE: 6x 470uF, 12x 22uF, 17x 10uF
+VTT: 4x 330uF, 7x 22uF, 8x 10uF

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22A

POWER

Clarkfield: 21A
Auburndale: 18A

PEG & DMT

Clarkfield: 5A
Auburndale: 3A

1.1V
1.8V

Clarkfield: 1.35A
Auburndale: 1.35A

IC_AUB_CFD_PGA_R0P9

SENSE LINES

GRAPHICS VIDS

DDR3 - 1.5V RAILS

VTT0_59
VTT0_60
VTT0_61
VTT0_62
VTT1_63
VTT1_64
VTT1_65
VTT1_66
VTT1_67
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VTT1_51
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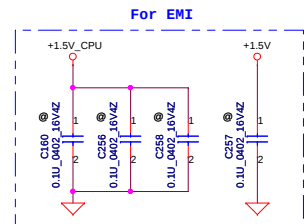
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Close to CPU

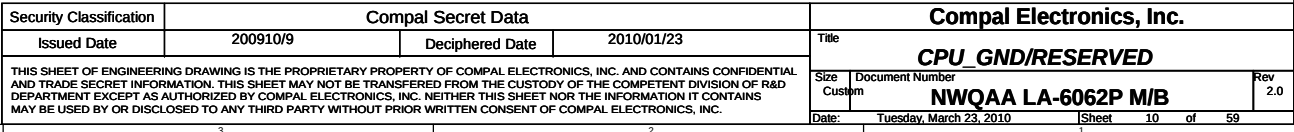
Change R136 to 470 ohm for GFX issue

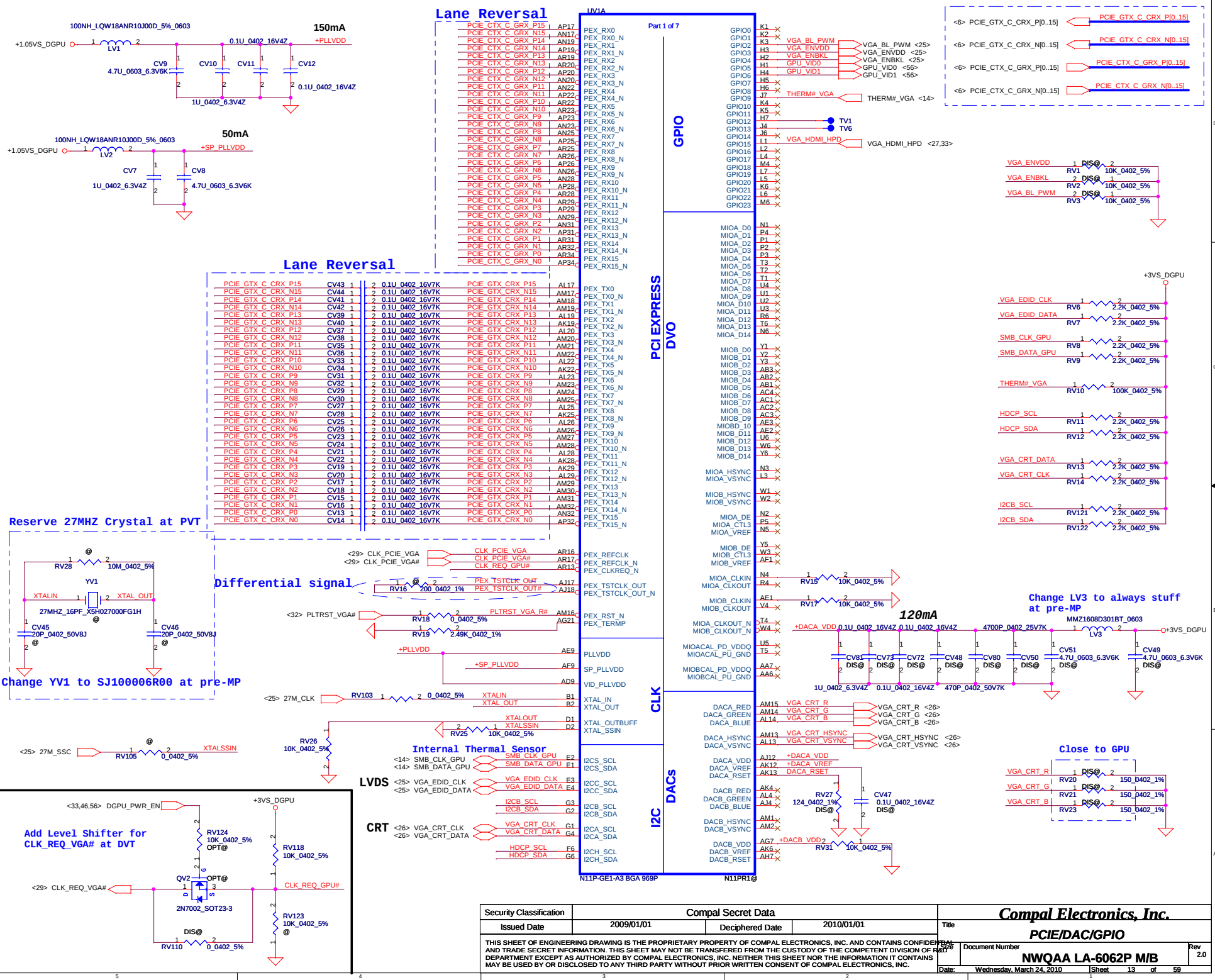
For EMI

For S3 CPU Power Saving



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N11E-GE1-LP Performance Mode

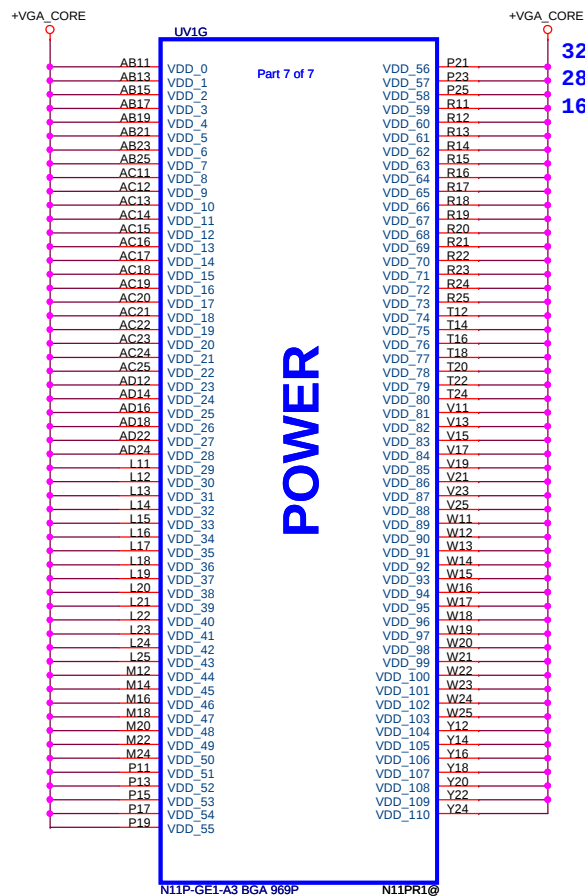
Mode	NVCLK (MHz)	MCLK (MHz)	+VGA_CORE
P0	450	790	0.90 V
P8	405	324	0.85 V
P12	135	135	0.80 V

N11P-GE1 Performance Mode

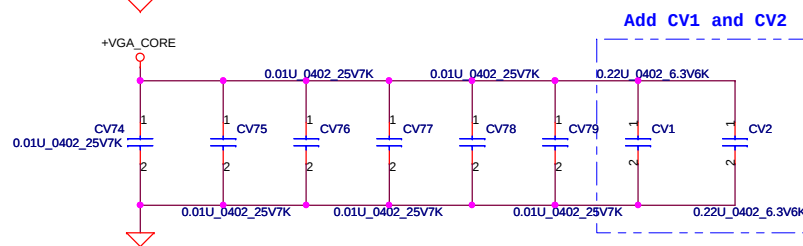
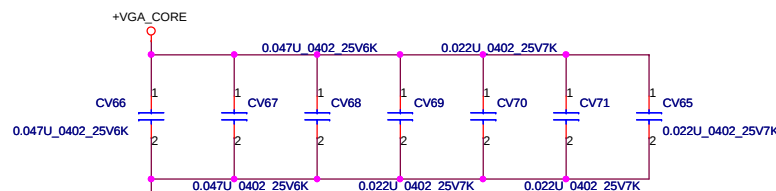
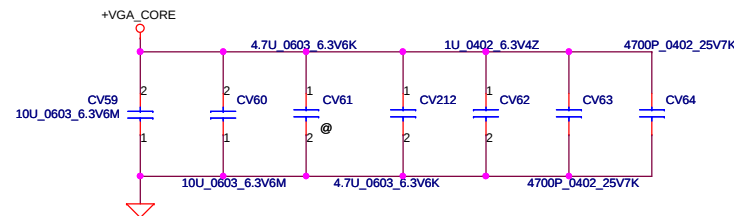
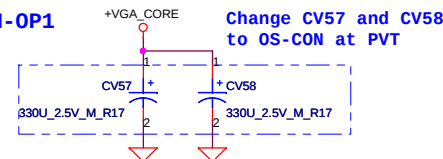
Mode	NVCLK (MHz)	MCLK (MHz)	+VGA_CORE
P0	575	790	0.95 V
P8	405	324	0.85 V
P12	135	135	0.80 V

N11M-GE1 & N11M-OP1 Performance Mode

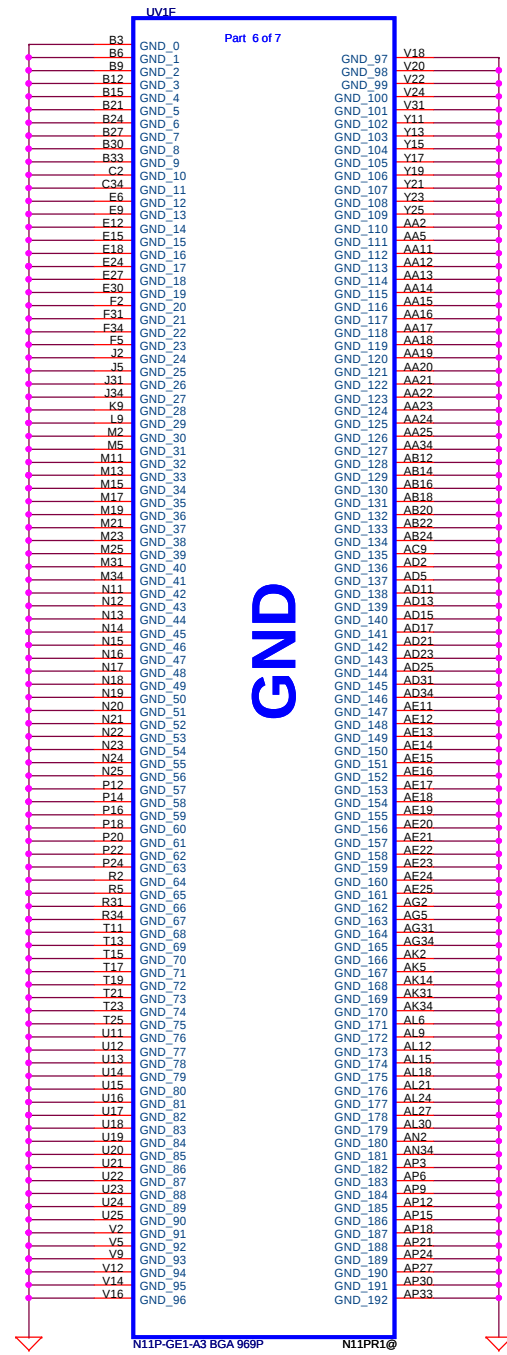
Mode	NVCLK (MHz)	MCLK (MHz)	+VGA_CORE
P0	625	790	1.03 V
P8	405	405	0.85 V
P12	135	135	0.85 V



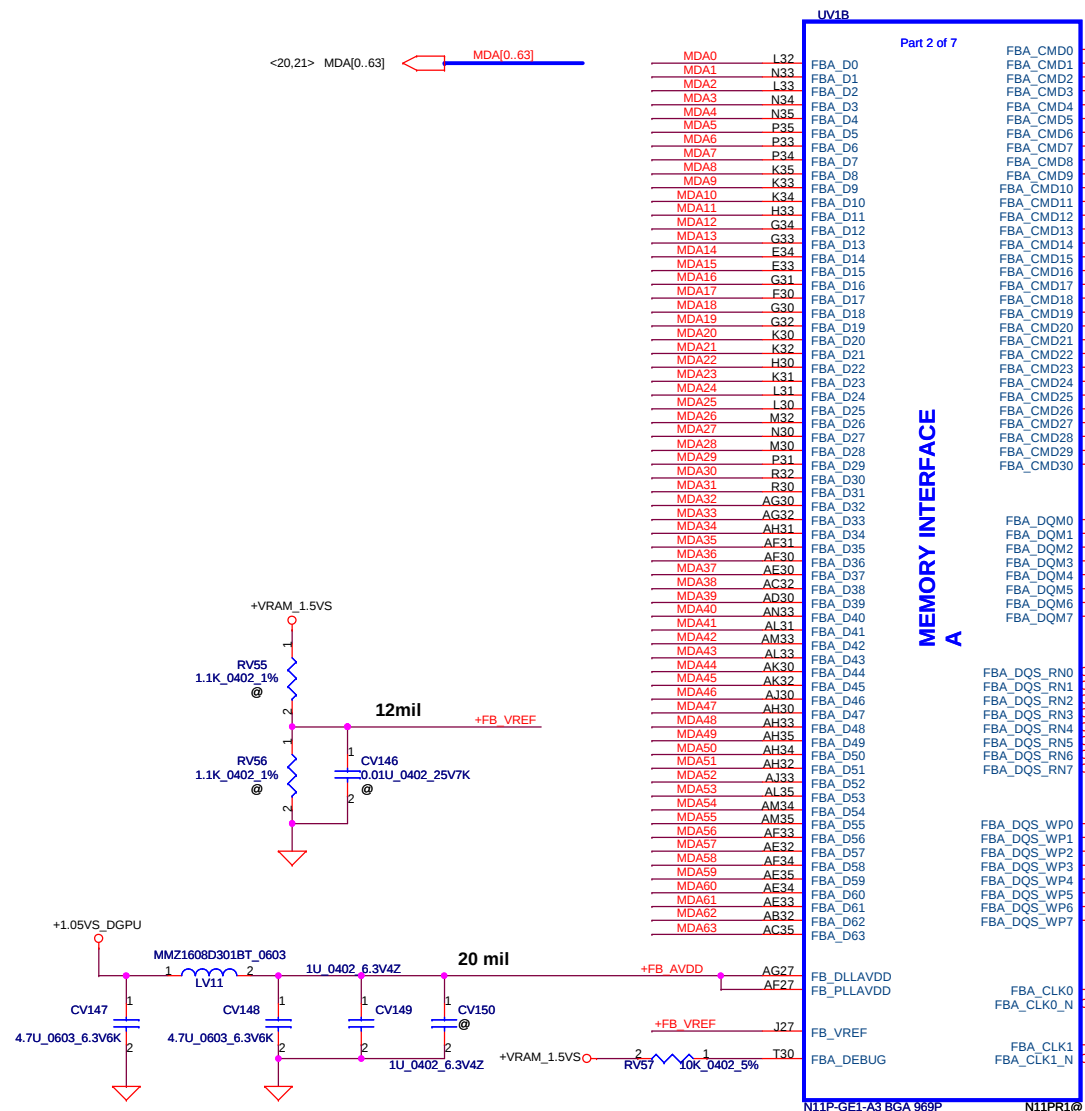
32A for N11E-GE1-LP
28A for N11P-GE1
16A for N11M-GE1 & N11M-OP1



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				NWQAA LA-6062P M/B	2.0
				Date: Tuesday, March 23, 2010	Sheet 15 of 59

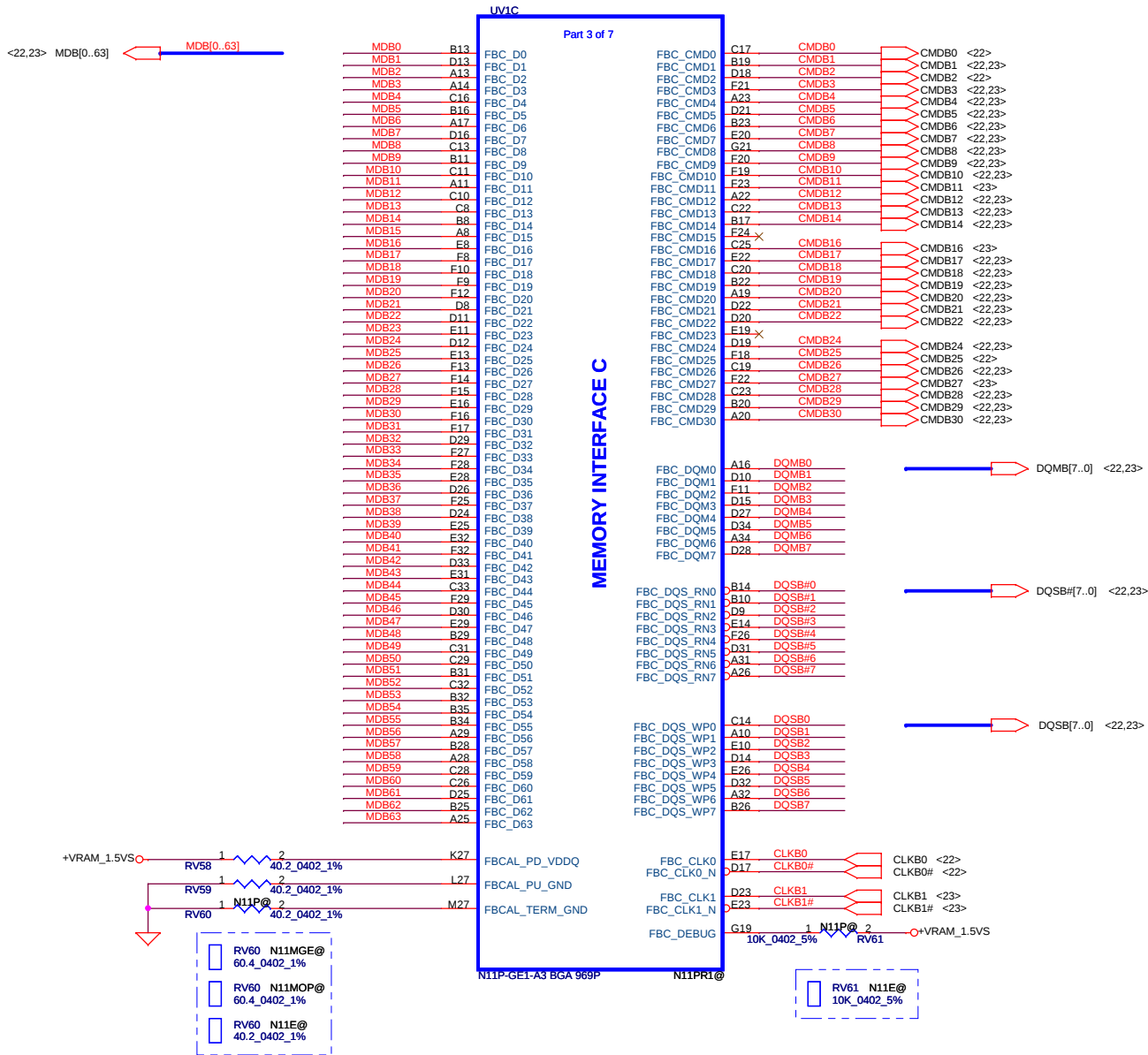


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				NWQAA LA-6062P M/B	
				Date	Tuesday, March 23, 2010
				Sheet	17 of 59
				Rev	2.0



Mode C - Mirror Mode Mapping

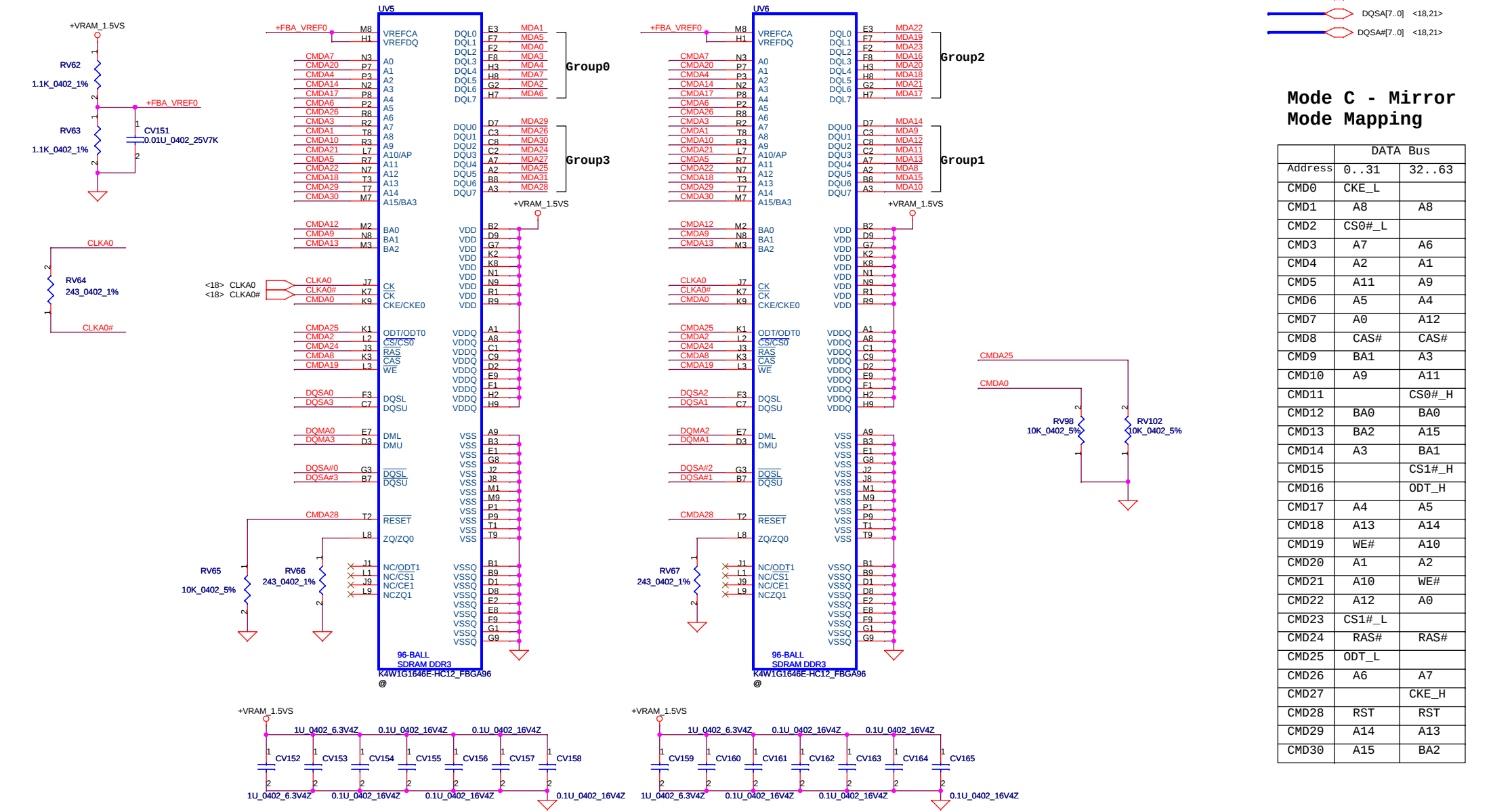
DATA Bus		
Address	0..31	32..63
CMD0	CKE_L	
CMD1	A8	A8
CMD2	CS0#_L	
CMD3	A7	A6
CMD4	A2	A1
CMD5	A11	A9
CMD6	A5	A4
CMD7	A0	A12
CMD8	CAS#	CAS#
CMD9	BA1	A3
CMD10	A9	A11
CMD11		CS0#_H
CMD12	BA0	BA0
CMD13	BA2	A15
CMD14	A3	BA1
CMD15		CS1#_H
CMD16		ODT_H
CMD17	A4	A5
CMD18	A13	A14
CMD19	WE#	A10
CMD20	A1	A2
CMD21	A10	WE#
CMD22	A12	A0
CMD23	CS1#_L	
CMD24	RAS#	RAS#
CMD25	ODT_L	
CMD26	A6	A7
CMD27		CKE_H
CMD28	RST	RST
CMD29	A14	A13
CMD30	A15	BA2



Mode C - Mirror Mode Mapping

Address	DATA Bus	
	0..31	32..63
CMD0	CKE_L	
CMD1	A8	A8
CMD2	CS0#_L	
CMD3	A7	A6
CMD4	A2	A1
CMD5	A11	A9
CMD6	A5	A4
CMD7	A0	A12
CMD8	CAS#	CAS#
CMD9	BA1	A3
CMD10	A9	A11
CMD11		CS0#_H
CMD12	BA0	BA0
CMD13	BA2	A15
CMD14	A3	BA1
CMD15		CS1#_H
CMD16		ODT_H
CMD17	A4	A5
CMD18	A13	A14
CMD19	WE#	A10
CMD20	A1	A2
CMD21	A10	WE#
CMD22	A12	A0
CMD23	CS1#_L	
CMD24	RAS#	RAS#
CMD25	ODT_L	
CMD26	A6	A7
CMD27		CKE_H
CMD28	RST	RST
CMD29	A14	A13
CMD30	A15	BA2

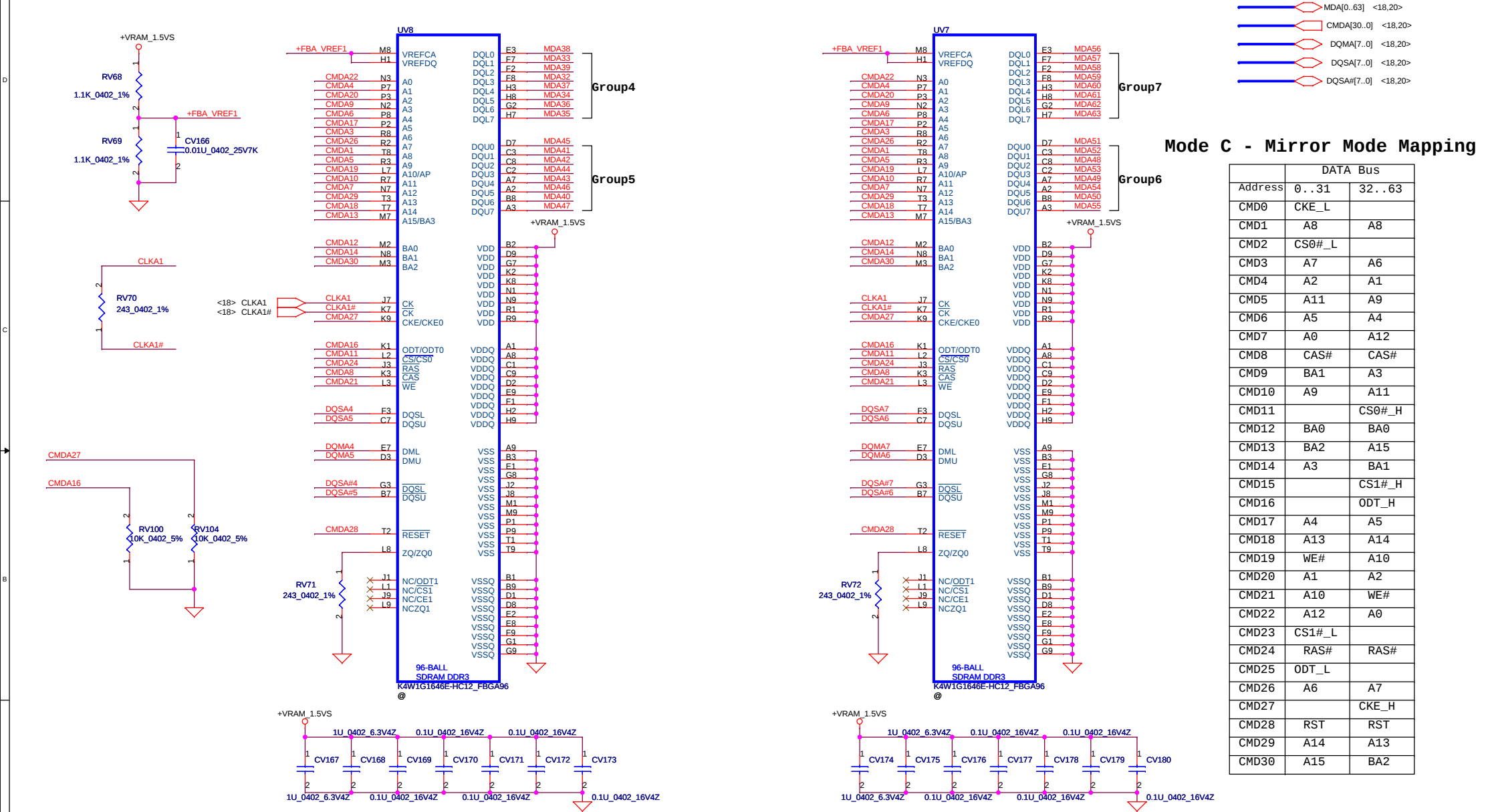
Memory Partition A - Lower 32 bits



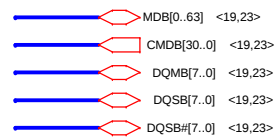
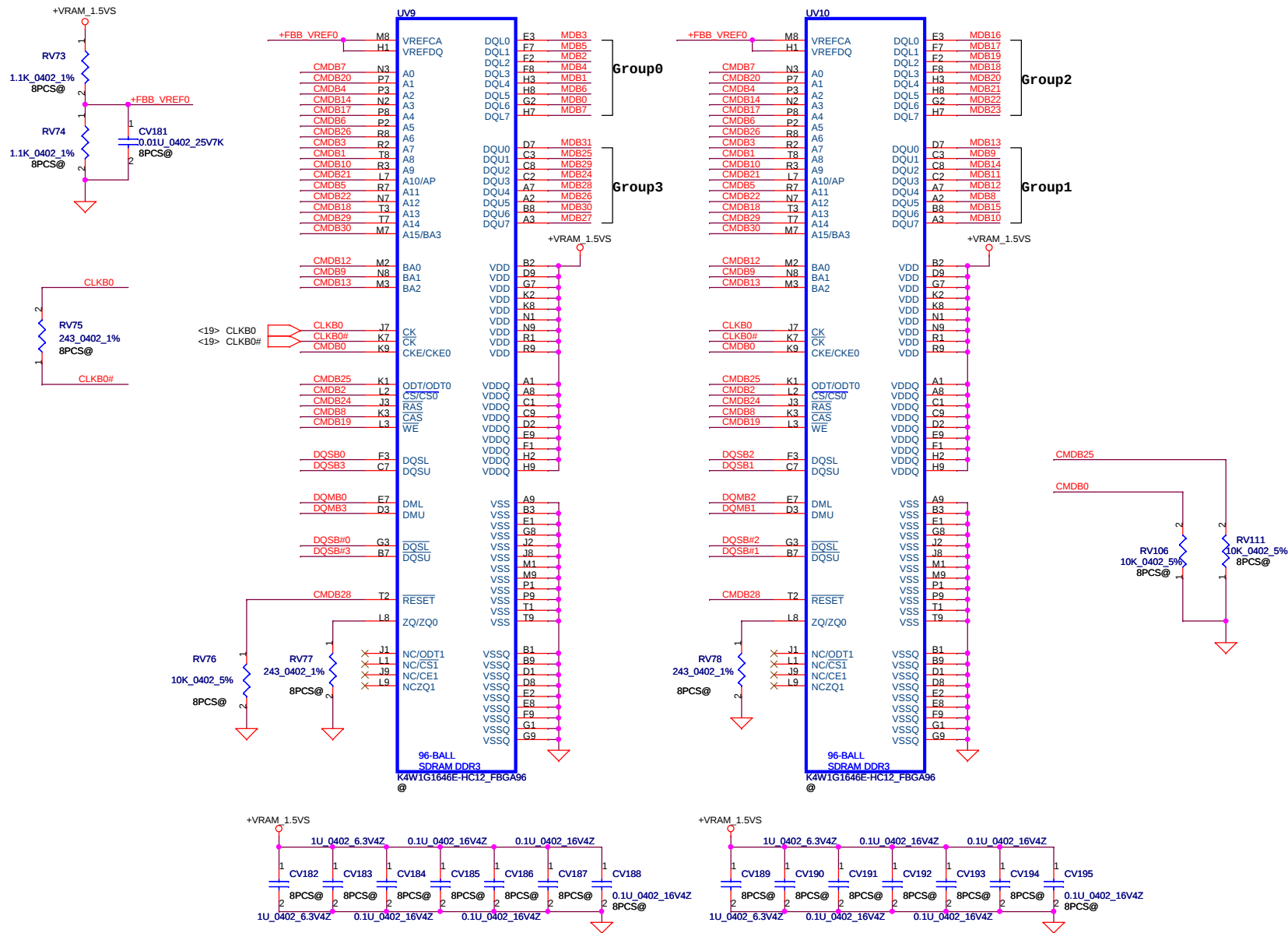
Mode C - Mirror Mode Mapping

Address	DATA Bus	
	0..31	32..63
CMD0	CKE_L	
CMD1	A8	A8
CMD2	CS0#_L	
CMD3	A7	A6
CMD4	A2	A1
CMD5	A11	A9
CMD6	A5	A4
CMD7	A0	A12
CMD8	CAS#	CAS#
CMD9	BA1	A3
CMD10	A9	A11
CMD11		CS0#_H
CMD12	BA0	
CMD13	BA2	A15
CMD14	A3	BA1
CMD15		CS1#_H
CMD16		ODT_H
CMD17	A4	A5
CMD18	A13	A14
CMD19	WE#	A10
CMD20	A1	A2
CMD21	A10	WE#
CMD22	A12	A0
CMD23	CS1#_L	
CMD24	RAS#	RAS#
CMD25	ODT_L	
CMD26	A6	A7
CMD27		CKE_H
CMD28	RST	RST
CMD29	A14	A13
CMD30	A15	BA2

Memory Partition A - Upper 32 bits



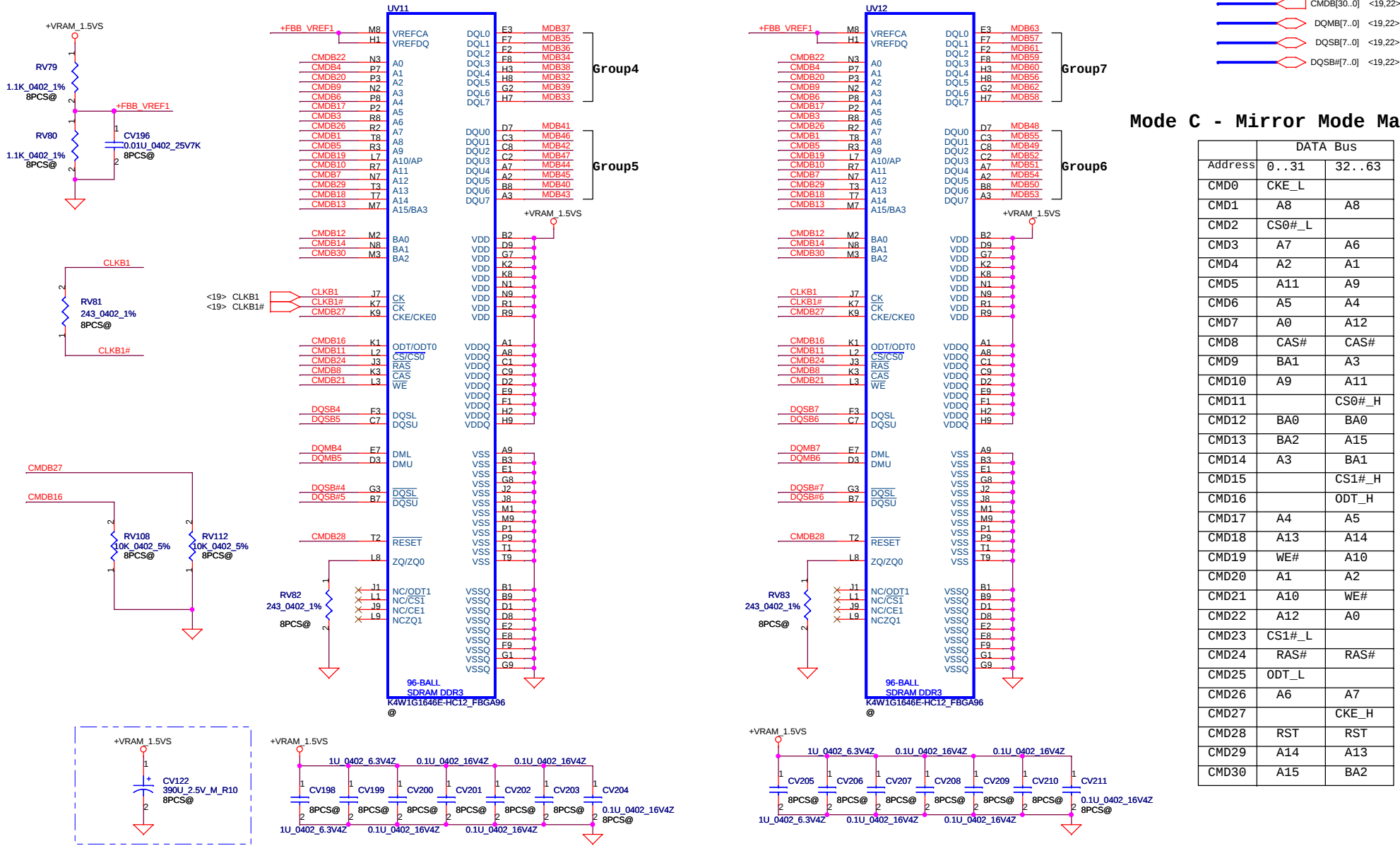
Memory Partition C - Lower 32 bits

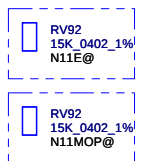
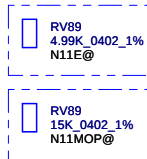
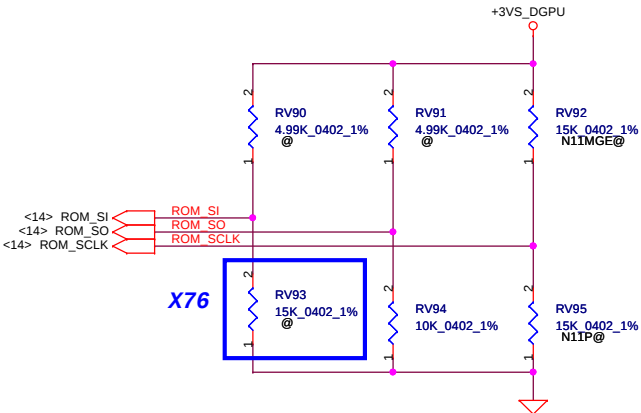
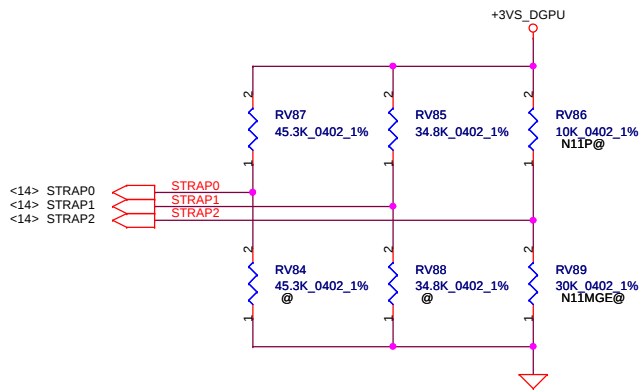


Mode C - Mirror Mode Mapping

Address	DATA Bus	
	0..31	32..63
CMD0	CKE_L	
CMD1	A8	A8
CMD2	CS0#_L	
CMD3	A7	A6
CMD4	A2	A1
CMD5	A11	A9
CMD6	A5	A4
CMD7	A0	A12
CMD8	CAS#	CAS#
CMD9	BA1	A3
CMD10	A9	A11
CMD11		CS0#_H
CMD12	BA0	
CMD13	BA2	A15
CMD14	A3	BA1
CMD15		CS1#_H
CMD16		ODT_H
CMD17	A4	A5
CMD18	A13	A14
CMD19	WE#	A10
CMD20	A1	A2
CMD21	A10	WE#
CMD22	A12	A0
CMD23	CS1#_L	
CMD24	RAS#	RAS#
CMD25	ODT_L	
CMD26	A6	A7
CMD27		CKE_H
CMD28	RST	RST
CMD29	A14	A13
CMD30	A15	BA2

Memory Partition C - Upper 32 bits





	DeviceID	ROM_SCLK	STRAP2
N11M-GE1	0xA75	Pull up 15K	Pull down 30K
N11P-GE1	0xA29	Pull down 15K	Pull up 10K
N11M-OP1	0xA72	Pull up 15K	Pull down 15K
N11E-GE1(LP)	0xCB0	Pull up 15K	Pull down 5K

Hynix H5TQ1G63BFR-12C SA000032400	512M	0010	PD 15K
	1G	0010	PD 15K
Samsung K4W1G1646E-HC12 SA000035700	512M	0011	PD 20K
	1G	0011	PD 20K

SD034150280

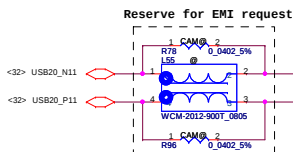
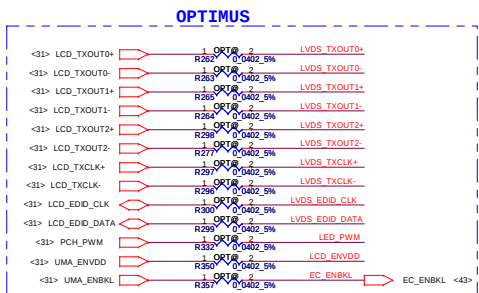
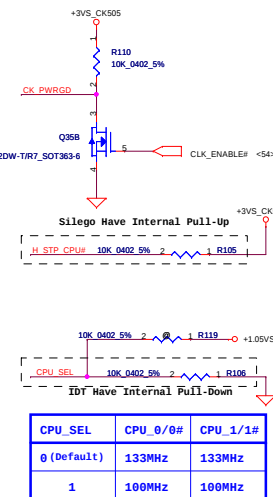
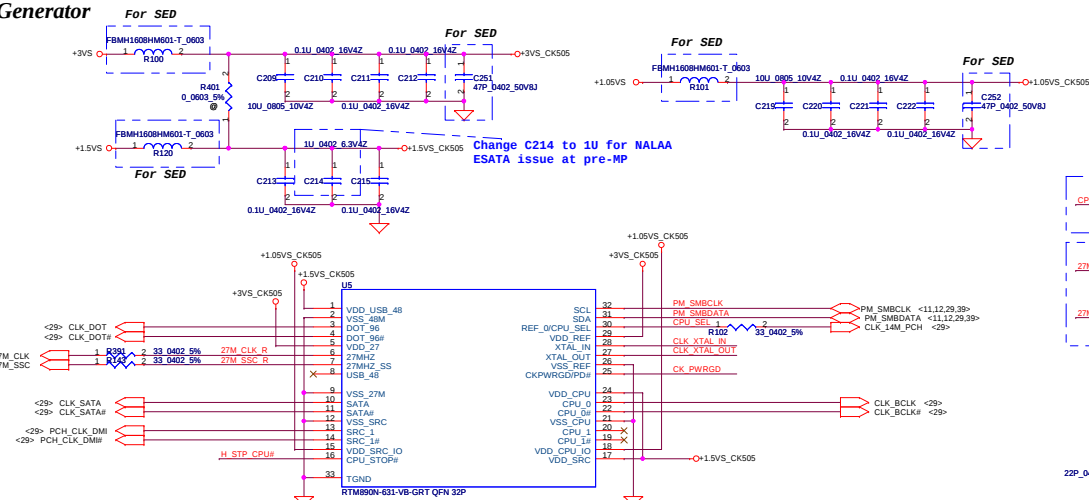
SD034200280

Physical Strapping pin	Power Rail	Logical Strapping Bit3	Logical Strapping Bit2	Logical Strapping Bit1	Logical Strapping Bit0
ROM_SO	+3VS_DGPU	XCLK_417	FB_0_BAR_SIZE	SMB_ALT_ADDR	VGA_DEVICE
ROM_SCLK	+3VS_DGPU	PCI_DEVID[4]	SUB_VENDOR	SLOT_CLK_CFG	PEX_PLEN_TERM
ROM_SI	+3VS_DGPU	RAMCFG[3]	RAMCFG[2]	RAMCFG[1]	RAMCFG[0]
STRAP2	+3VS_DGPU	PCI_DEVID[3]	PCI_DEVID[2]	PCI_DEVID[1]	PCI_DEVID[0]
STRAP1	+3VS_DGPU	3GIO_PADCFG[3]	3GIO_PADCFG[2]	3GIO_PADCFG[1]	3GIO_PADCFG[0]
STRAP0	+3VS_DGPU	USER[3]	USER[2]	USER[1]	USER[0]

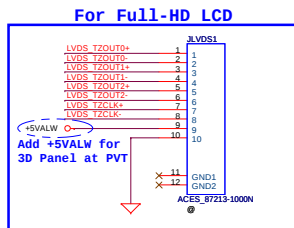
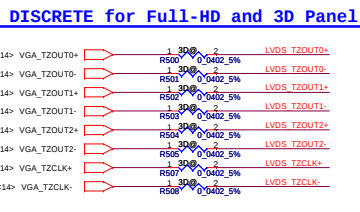
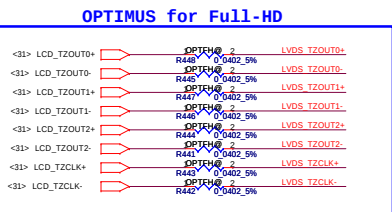
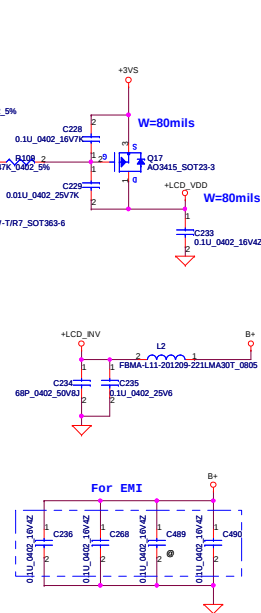
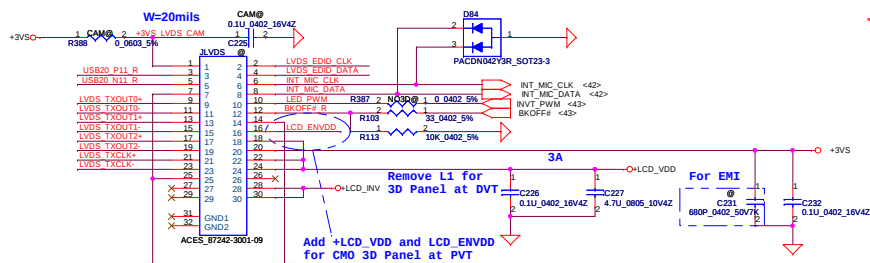
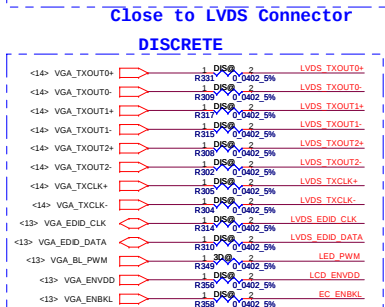
Resistor Values	Pull-up to +3VS	Pull-down to Gnd
5K	1000	0000
10K	1001	0001
15K	1010	0010
20K	1011	0011
25K	1100	0100
30K	1101	0101
35K	1110	0110
45K	1111	0111

SUB_VENDOR		XCLK_417	
0	No VBIOS ROM (Default)	0	277MHz (Default)
1	BIOS ROM is present	1	Reserved
FB_0_BAR_SIZE		USER Straps	
0	256MB (Default)	User [3:0]	
1	Reserved	1000-1100	Customer defined
3GIO_PADCFG		PEX_PLL_EN_TERM	
3GIO_PADCFG[3:0]		0	Disable (Default)
1110	Notebook Default	1	Enable
SLOT_CLOCK_CFG			
0	GPU and MCH don't share a common reference clock		
1	GPU and MCH share a common reference clock (Default)		
SMBUS_ALT_ADDR		VGA_DEVICE	
0	0x9E (Default)	0	3D Device
1	0x9C (Multi-GPU usage)	1	VGA Device (Default)

Clock Generator



LCD/PANEL BD. Conn.



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2009/10/9		2010/01/23		CCLK GEN/LVDS	
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				MWQAA LA-0622 M/B	
				Date: Wednesday, 2012-10-10 15:06:25 of 59	

OPTIMUS

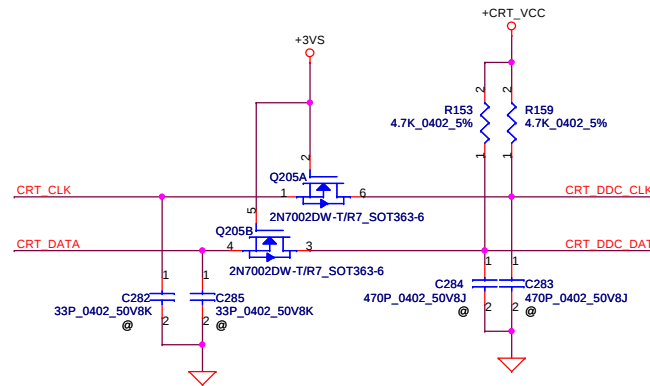
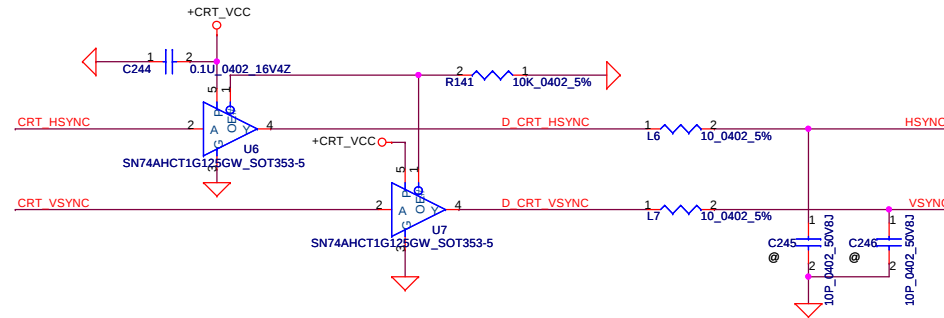
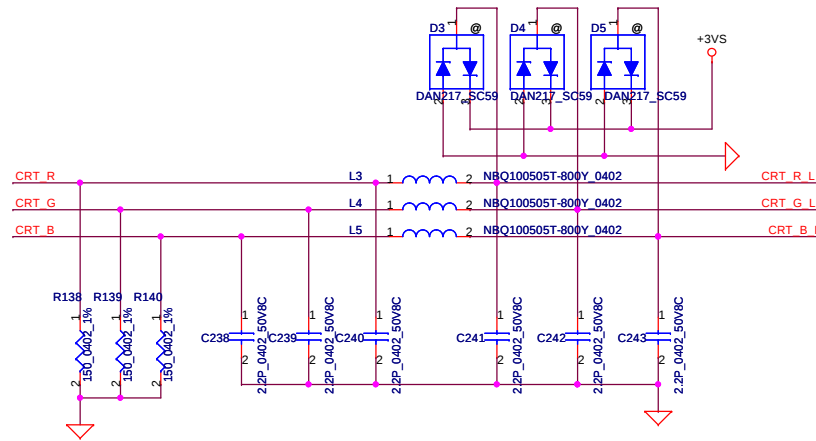
<31> UMA_CRT_R	1 OPT@ 2	CRT_R
<31> UMA_CRT_G	1 OPT@ 2	CRT_G
<31> UMA_CRT_B	1 OPT@ 2	CRT_B
<31> UMA_CRT_HSYNC	1 OPT@ 2	CRT_HSYNC
<31> UMA_CRT_VSYNC	1 OPT@ 2	CRT_VSYNC
<31> UMA_CRT_CLK	1 OPT@ 2	CRT_CLK
<31> UMA_CRT_DATA	1 OPT@ 2	CRT_DATA

Close to CRT Connector

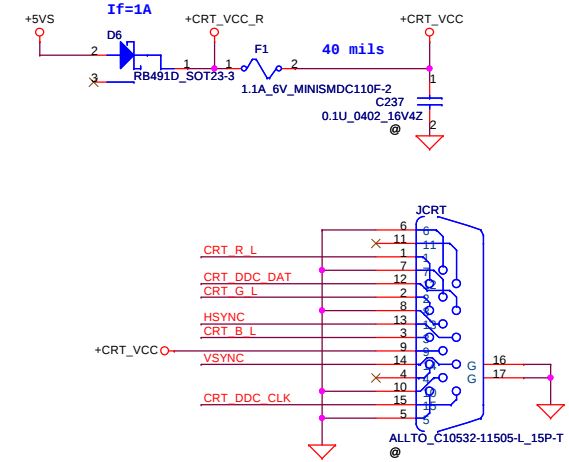
DISCRETE

<13> VGA_CRT_R	1 DIS@ 2	CRT_R
<13> VGA_CRT_G	1 DIS@ 2	CRT_G
<13> VGA_CRT_B	1 DIS@ 2	CRT_B
<13> VGA_CRT_HSYNC	1 DIS@ 2	CRT_HSYNC
<13> VGA_CRT_VSYNC	1 DIS@ 2	CRT_VSYNC
<13> VGA_CRT_CLK	1 DIS@ 2	CRT_CLK
<13> VGA_CRT_DATA	1 DIS@ 2	CRT_DATA

Close to CRT Connector

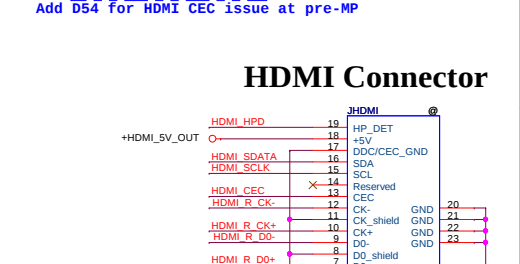
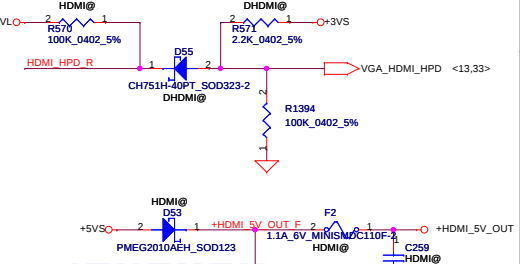
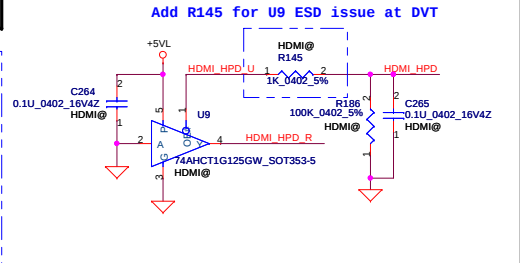
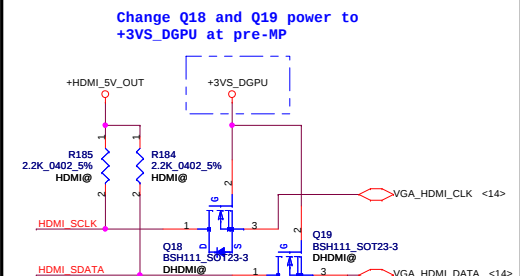
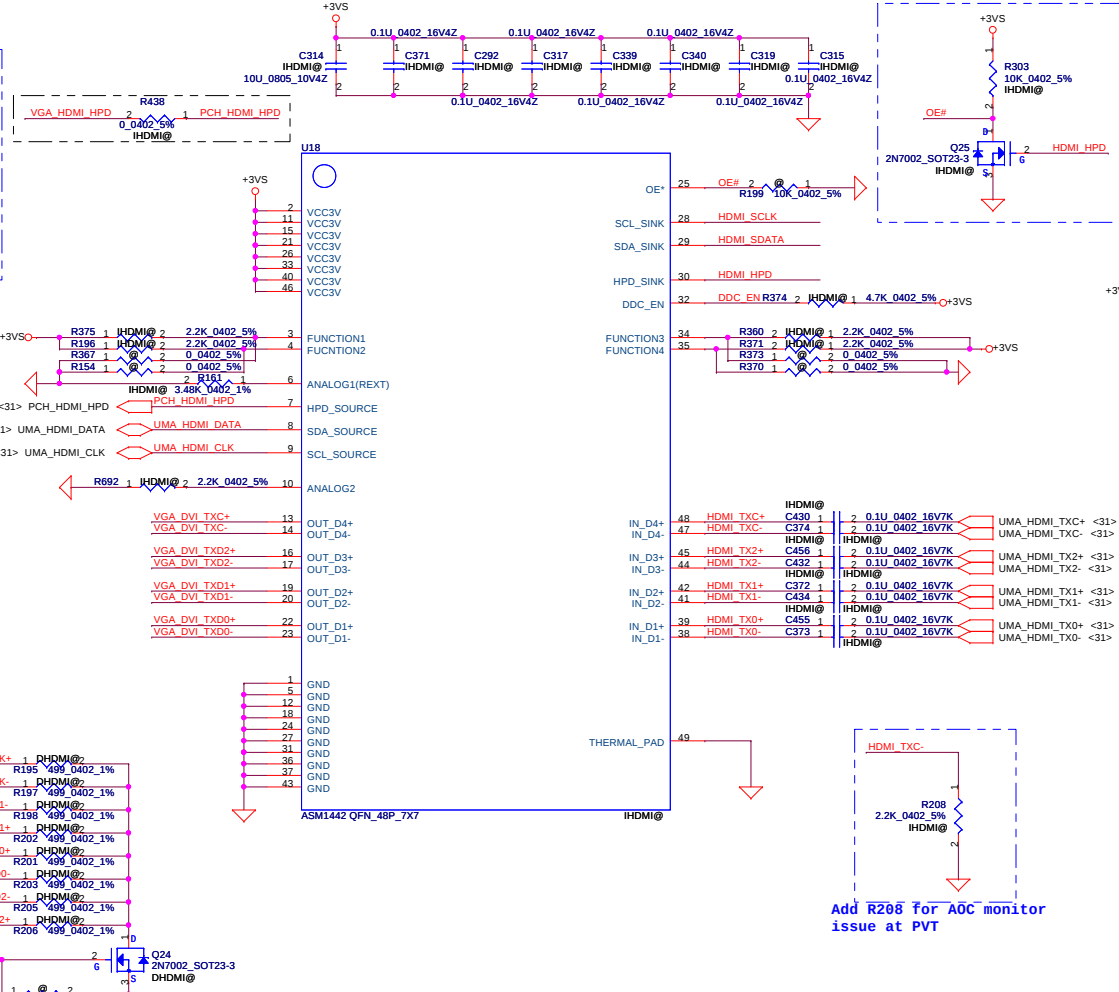
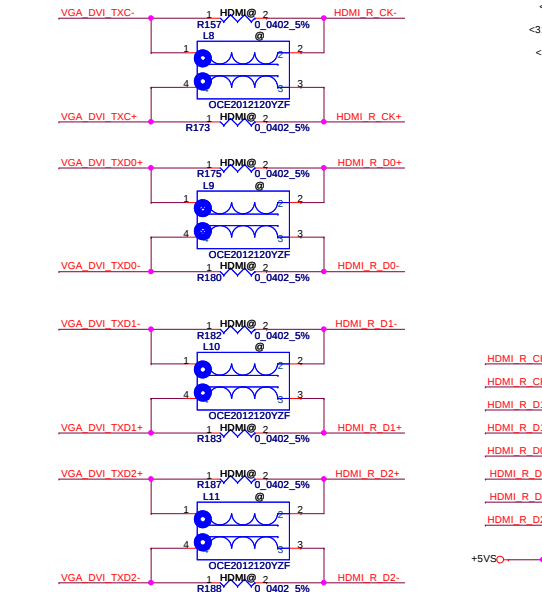
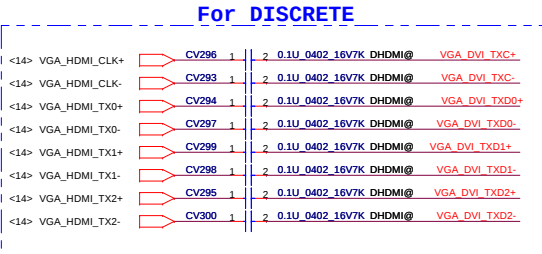
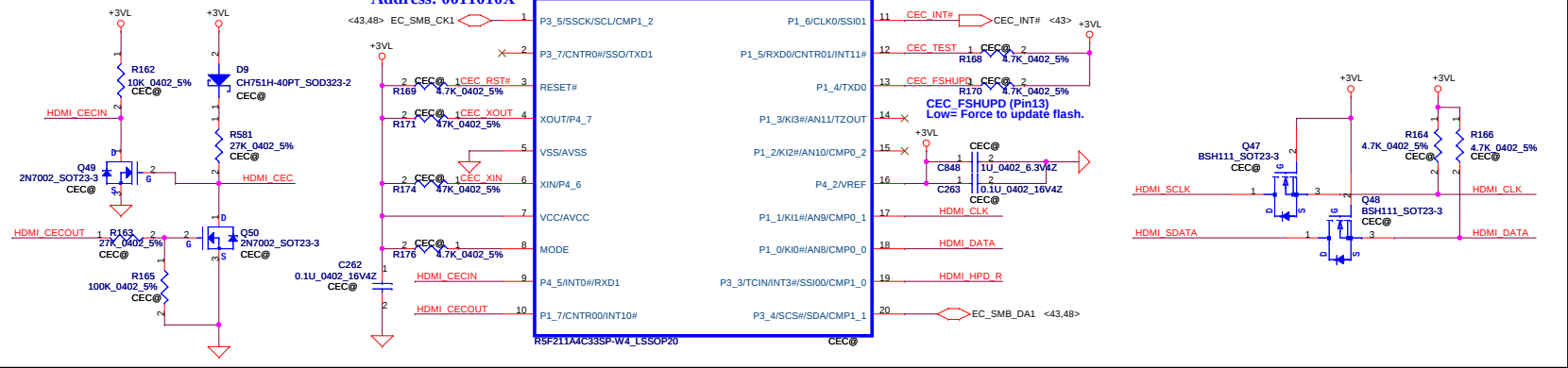


CRT CONNECTOR

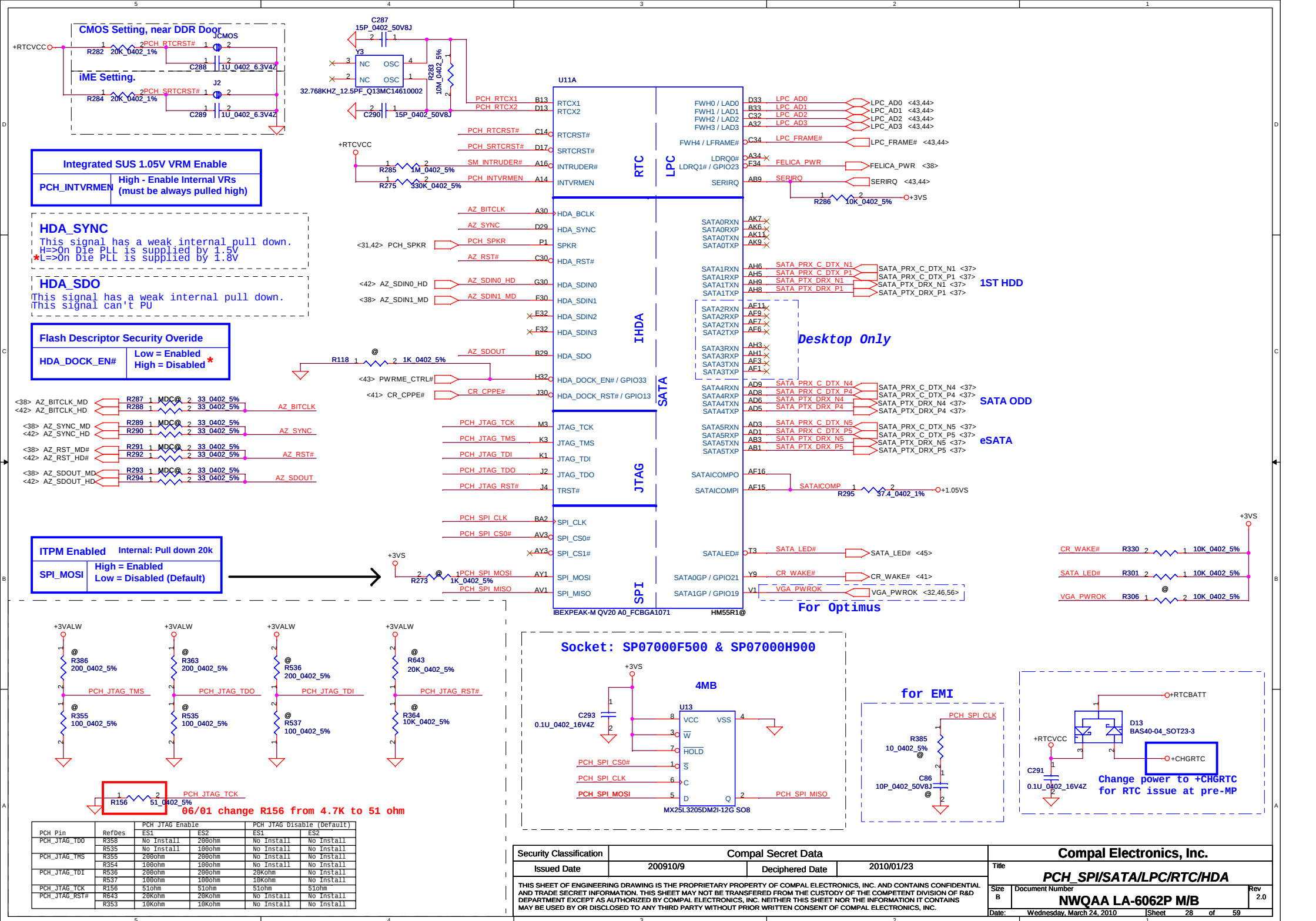


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Size	Document Number	Rev		2.0	
Date:	Wednesday, March 24, 2010	Sheet	26	of	59

HDMI CEC Controller



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200910/9		2010/01/23		HDMI Conn./CEC	
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				NWQAA LA-6062P M/B	
Date		Wednesday, March 24, 2010		Sheet	
				27 of 59	



For LAN

For WLAN

For NewCard

For JET

For Card Reader

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<40> PCIE_PRX_C_LANTX_P1
<40> PCIE_PTX_C_LANRX_N1
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<39> PCIE_PRX_NEWTX_N3
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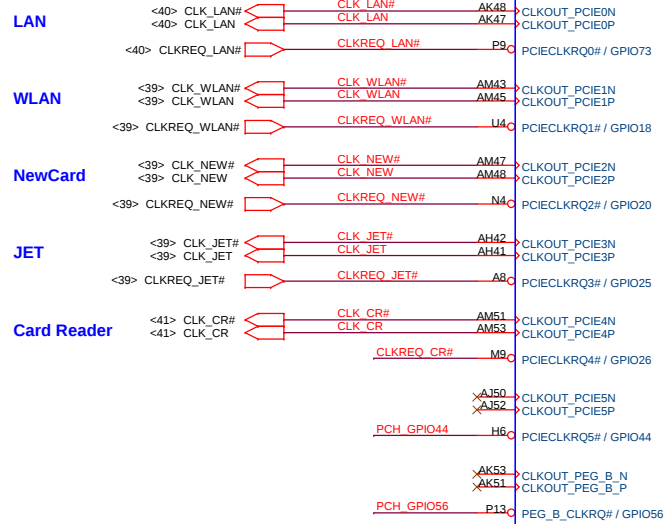
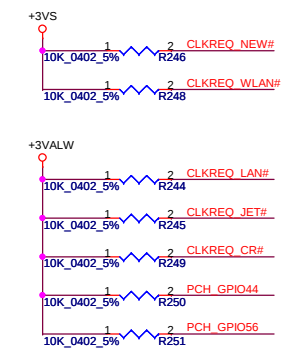
LAN

WLAN

NewCard

JET

Card Reader



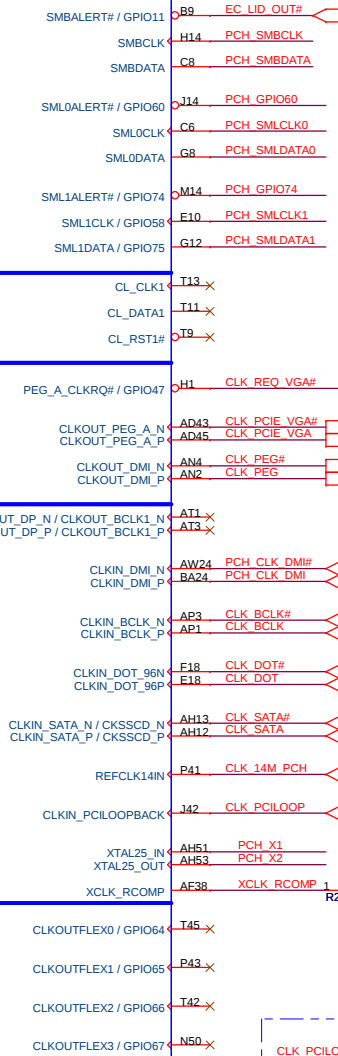
PCI-E*

Controller Link

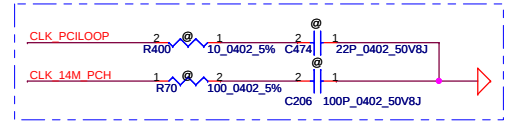
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From CLK BUFFER

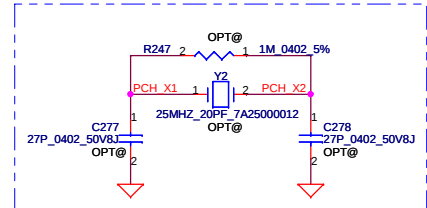
Clock Flex



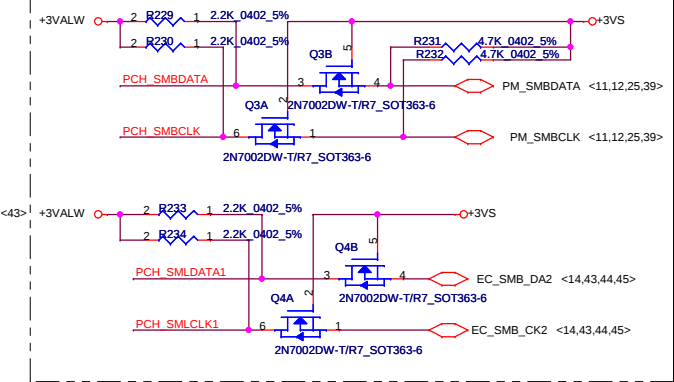
For EMI



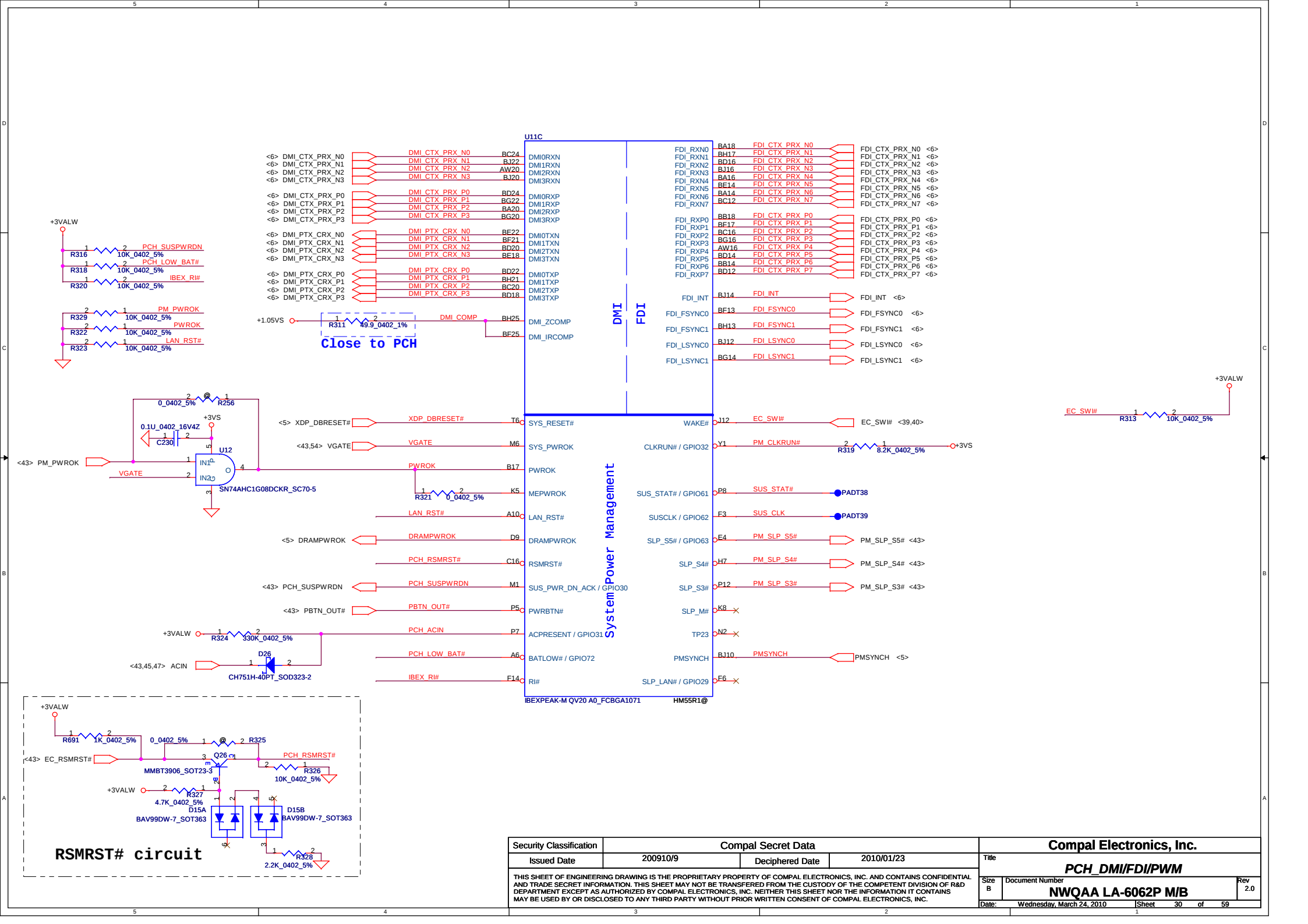
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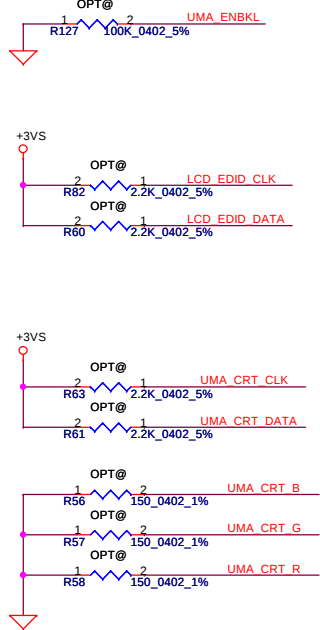
Note: Stuff 0 ohm if 25MHz crystal un-stuff



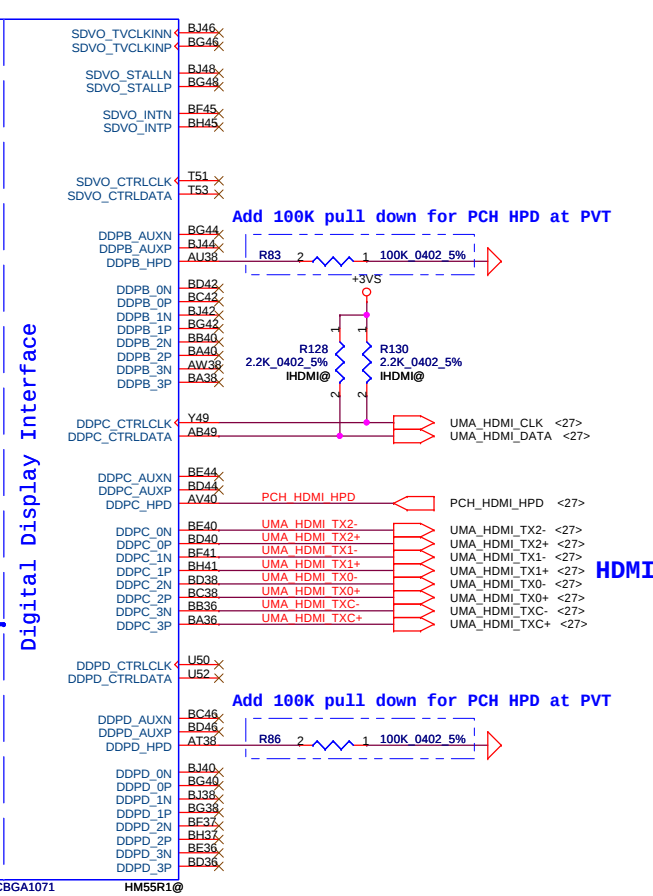
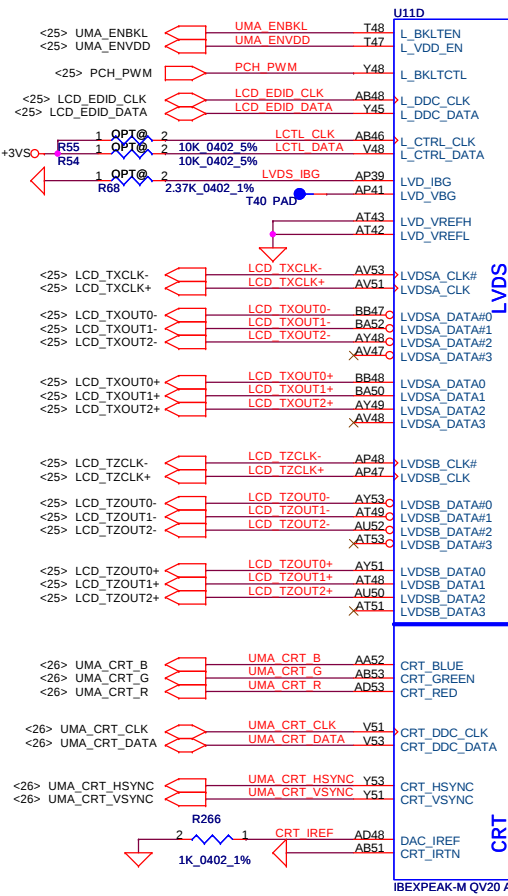
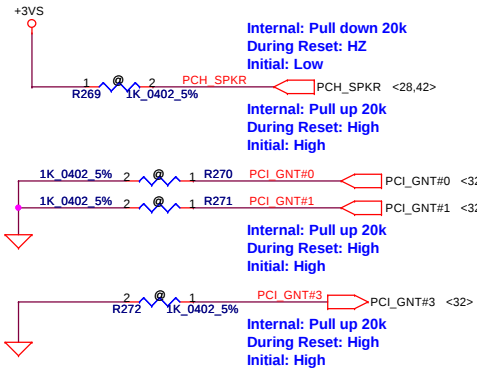
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2009/10/9	Deciphered Date	2010/01/23	Title	PCH_CLK/PCIE/SMBUS
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Issued Date	200910/9	Deciphered Date	2010/01/23	Title	
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Size B	Document Number	Rev		2.0	
Date:		Wednesday, March 24, 2010		Sheet	30 of 59



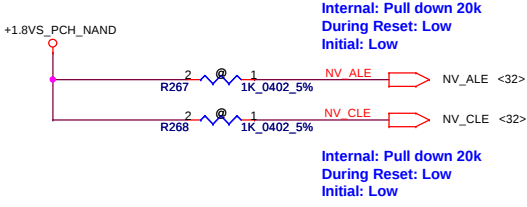
PCH Strap Pin



NO REBOOT Strap		
PCH_SPKR	Low= Disable	High= Enable

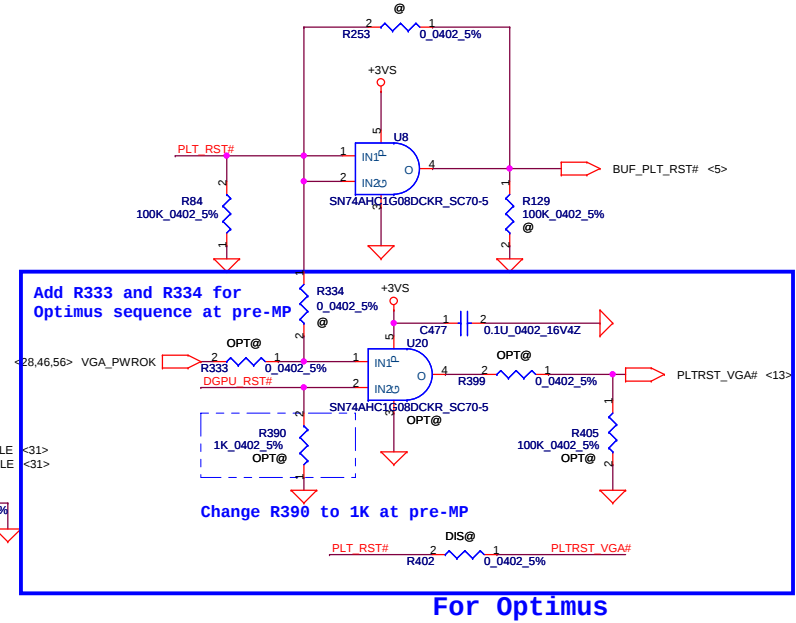
Boot BIOS Strap		
PCI_GNT#1	PCI_GNT#0	Boot BIOS Location
0	0	LPC (Default)
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

A16 Swap Override Strap	
PCI_GNT#3	Low= A16 swap override Enable
	High= A16 swap override Disable



Danbury Technology Enabled	
NV_ALE	High = Enabled
	Low = Disabled (Default)

DMI Termination Voltage	
NV_CLE	Low= Set to Vss (Default)
	High= Set to Vcc



USB-RIGHT1
USB-RIGHT2
USB-Left1
eSATA-USB
NewCard
BT

Finger Printer
Felica
TV Tuner
Int. Camera
3G/ TV tuner
WiMax(WLAN)

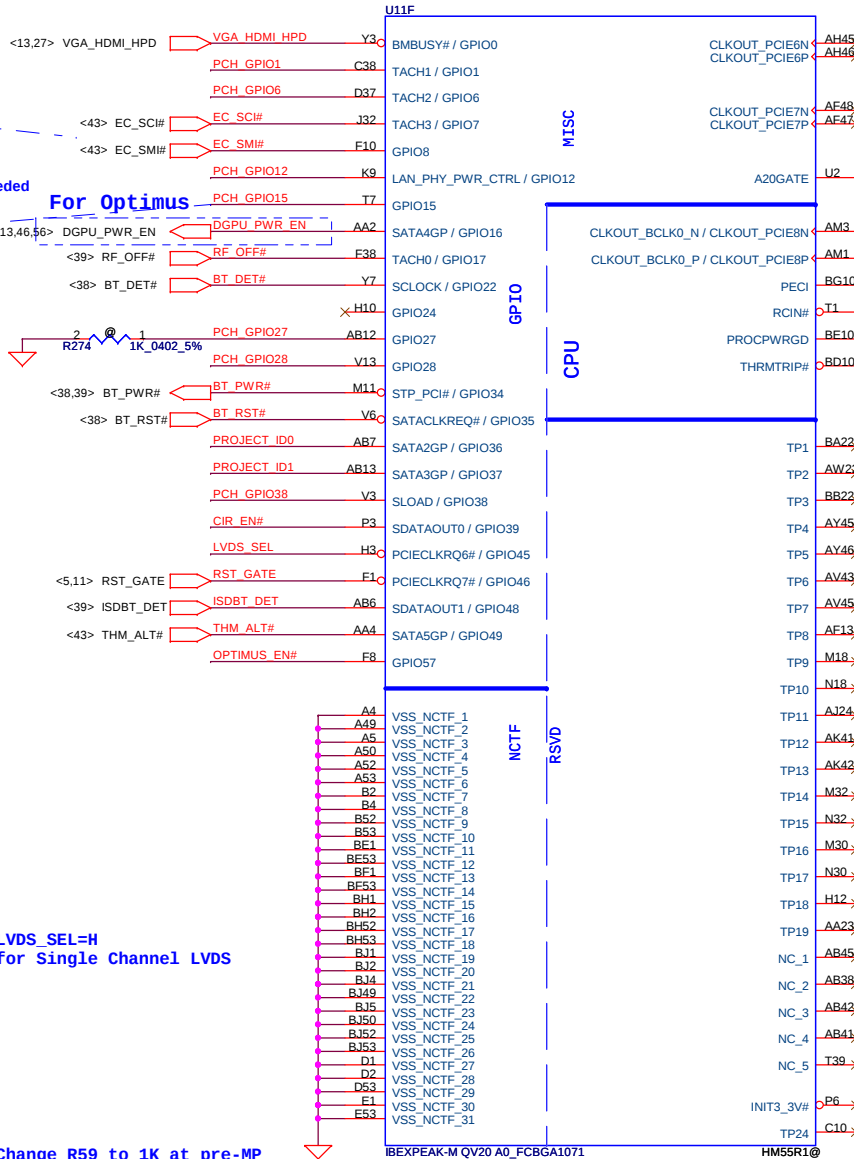
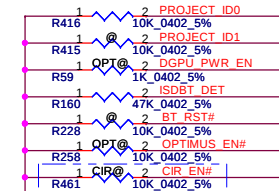
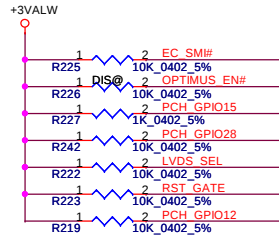
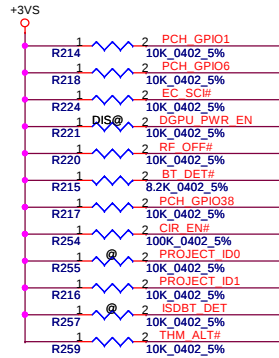
Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	200910/9	Deciphered Date	2010/01/23	Title	PCH_USB/PCI/NAND
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				Date Wednesday, March 24, 2010	Sheet 32 of 59

GPIO8
Not pull down
Internal: Pull up 20k
During Reset: High
Initial: High

GPIO15
a Strong pull up may be needed
for GPIO Functionality
Internal: Pull down 20k
During Reset: Low
Initial: Low

On-Die PLL VR

PCH_GPIO27 High = Enabled (Default)
Low = Disabled

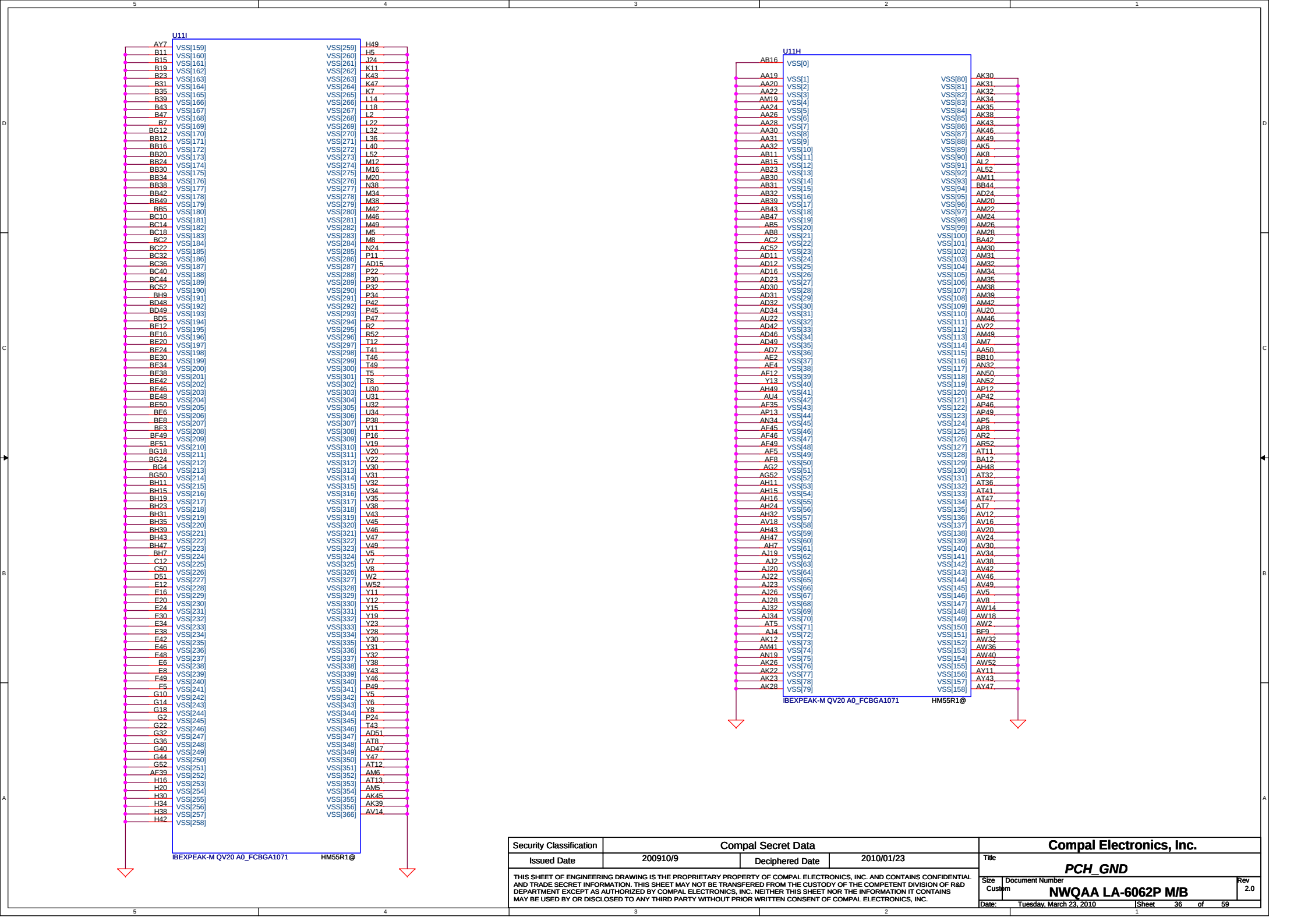


PROJECT_ID1	PROJECT_ID0	2010 Project ID setting
0	0	NDU00/10 (Streamline-M/-S 11.6/13.3")
0	1	NBQAA (Bordeaux 14")
1	0	NWQAA (Marseille 16")
1	1	NALAA (Hamburg 17.3")

Not pull low
internal pull up
Internal: Pull up 20k
During Reset: High
Initial: High

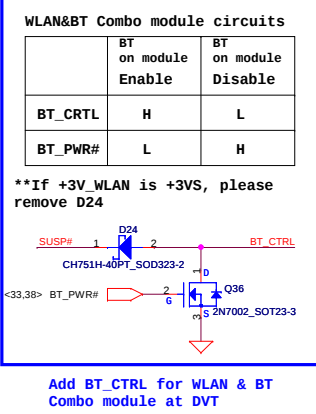
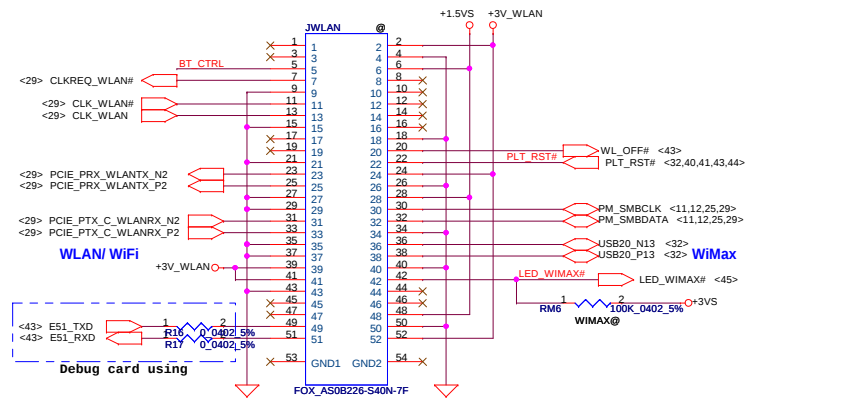
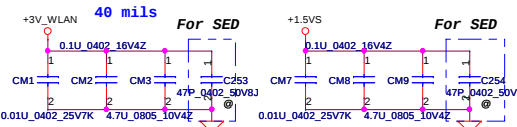
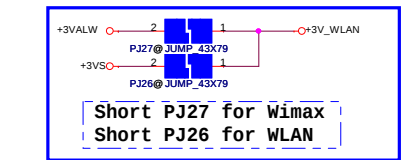
Add OPTIMUS_EN# at DVT		
OPTIMUS_EN#	H	L
SKU	Discrete	Optimus

Security Classification				Compal Secret Data				Compal Electronics, Inc.			
Issued Date		200910/9		Deciphered Date		2010/01/23		Title			
								PCH_CPU/GPIO			
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								B	NWQAA LA-6062P M/B		
								Date:	Wednesday, March 24, 2010	Sheet	33 of 59



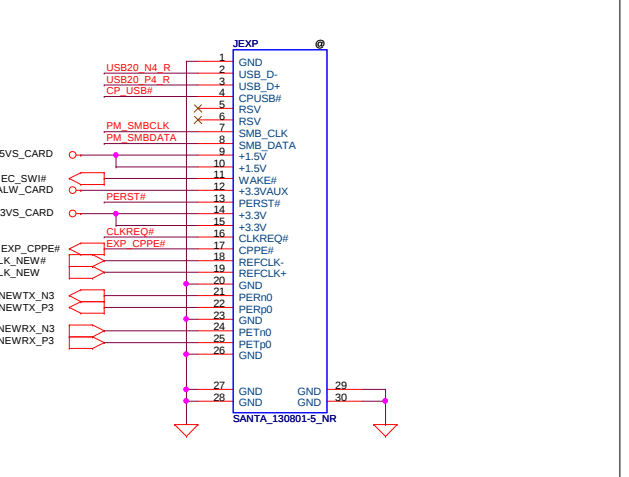
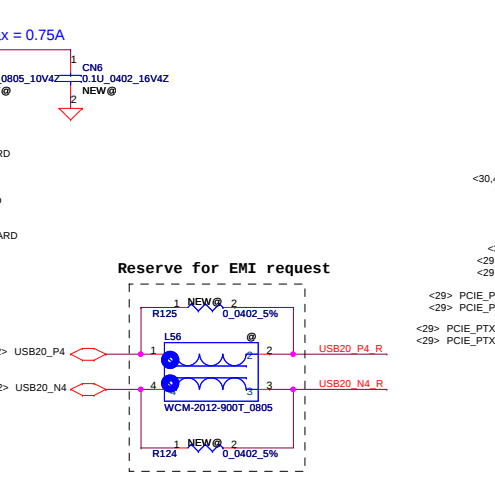
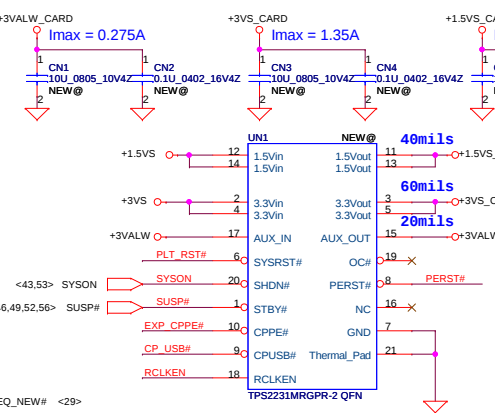
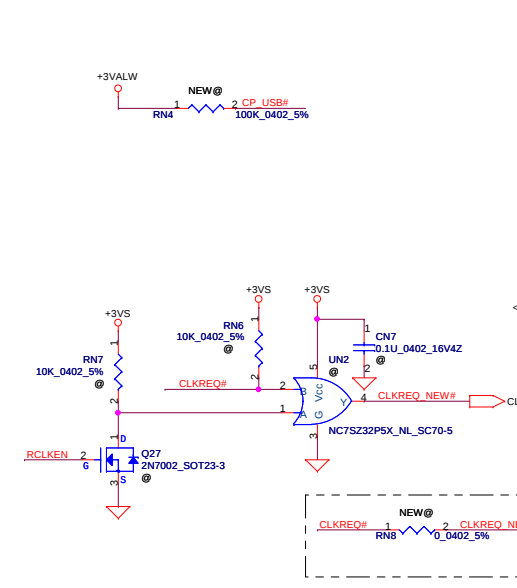
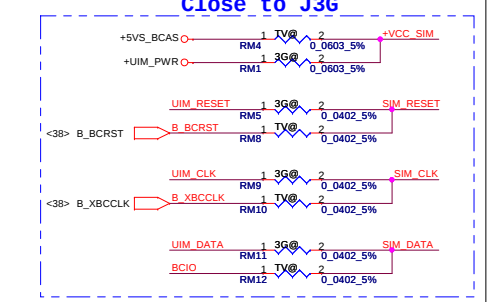
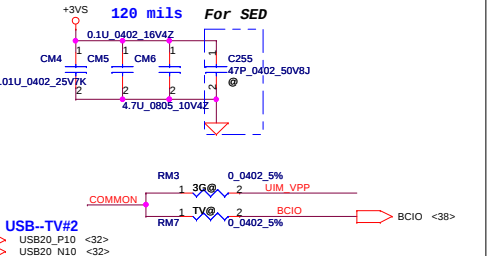
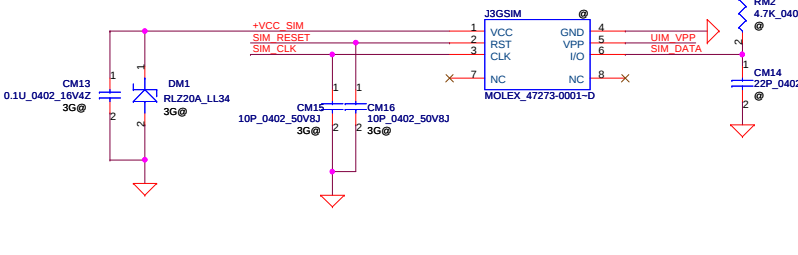
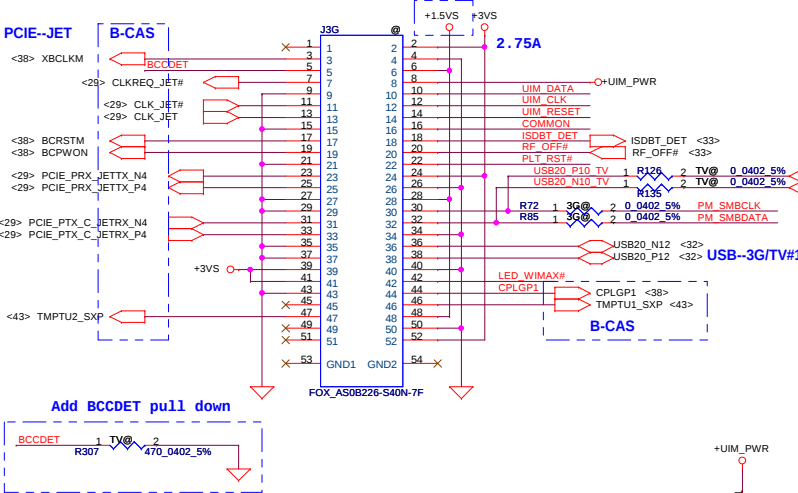
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Issued Date		200910/9		Deciphered Date		2010/01/23		Title			
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						Size	Document Number			Rev	
						Custom	NWQAA LA-6062P M/B			2.0	
						Date:		Tuesday, March 23, 2010		Sheet 36 of 59	

Slot 1 Half PCIe Mini Card-WLAN/ WiMax



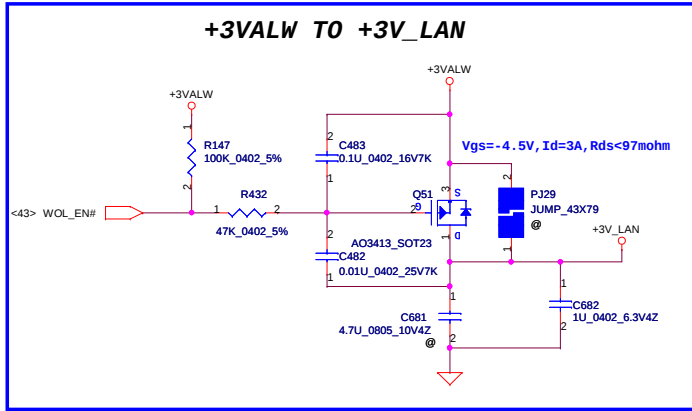
Add BT_CTRL for WLAN & BT Combo module at DVT

Slot 2 Full PCIe Mini Card- 3G/ TV Tuner
Half PCIe Mini Card- JET



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Issued Date	2009/10/9	Deciphered Date	2010/01/23	Title
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Size	Document Number	Rev	2.0	
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	RTL8105E	RTL8111E
Pin14	NC	NC
Pin15	NC	10K ohm PD
Pin38	1K ohm Pull-high	



For P/N and footprint
Please place them to ISPD page

UL1



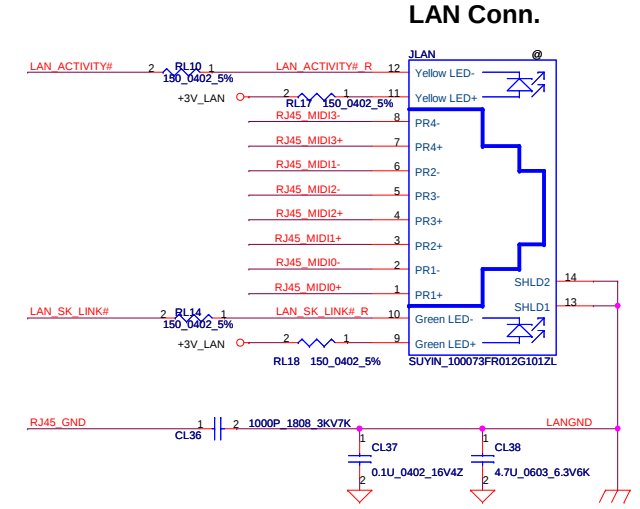
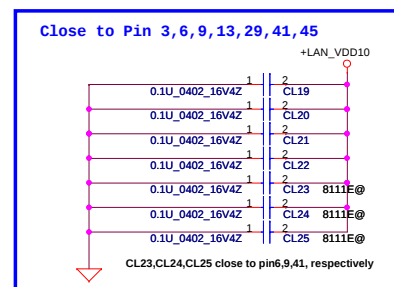
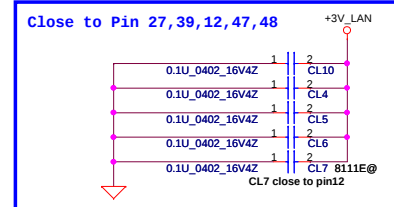
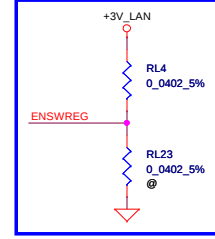
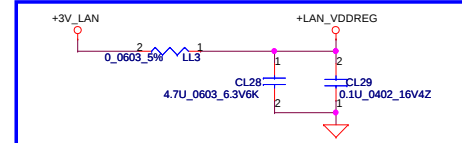
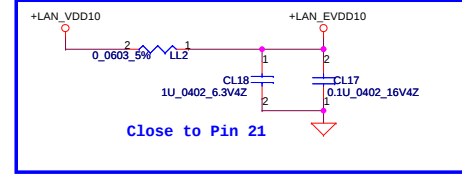
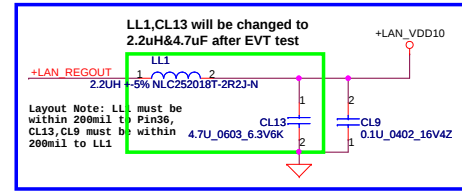
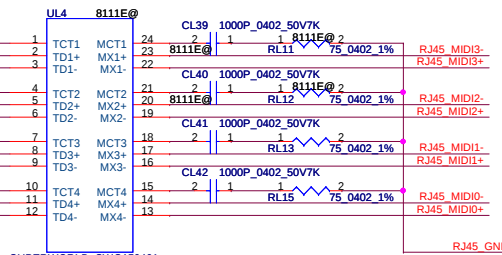
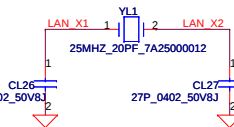
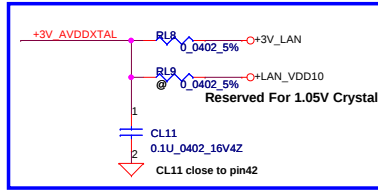
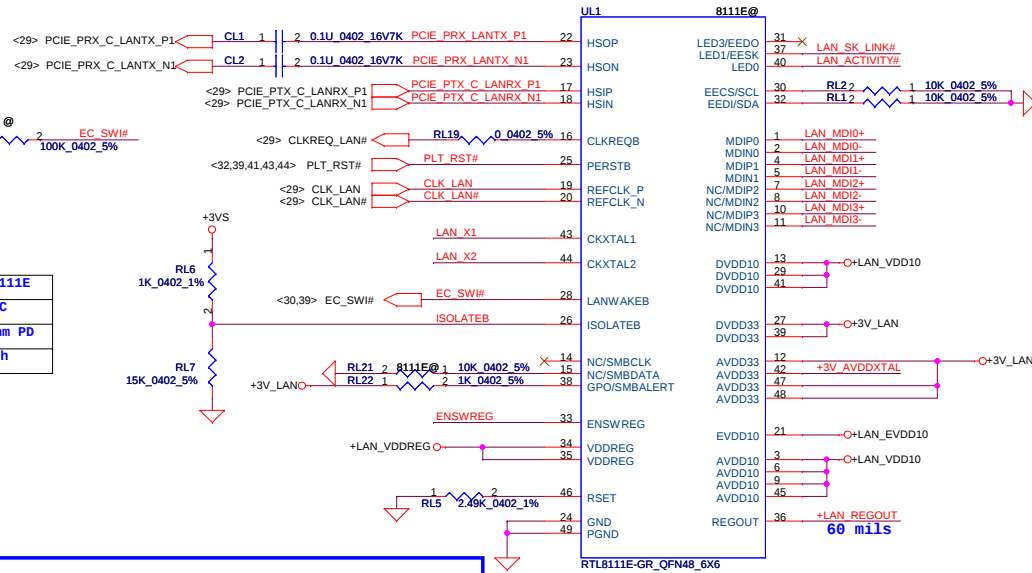
8105E 10/100M

8105E@

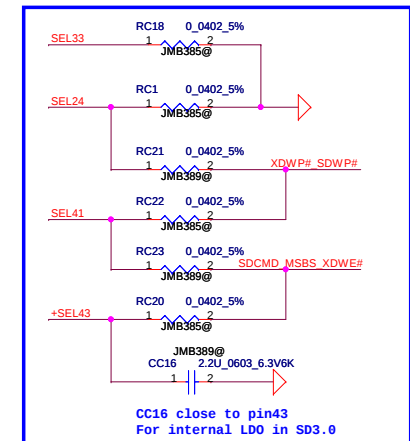
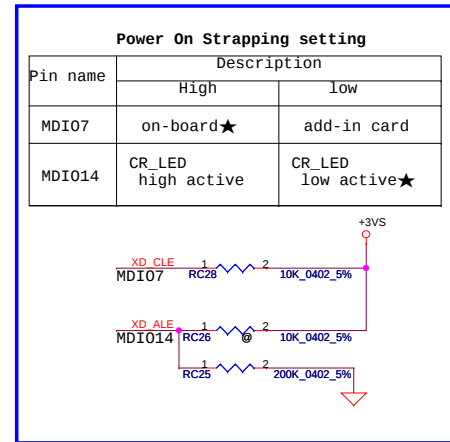
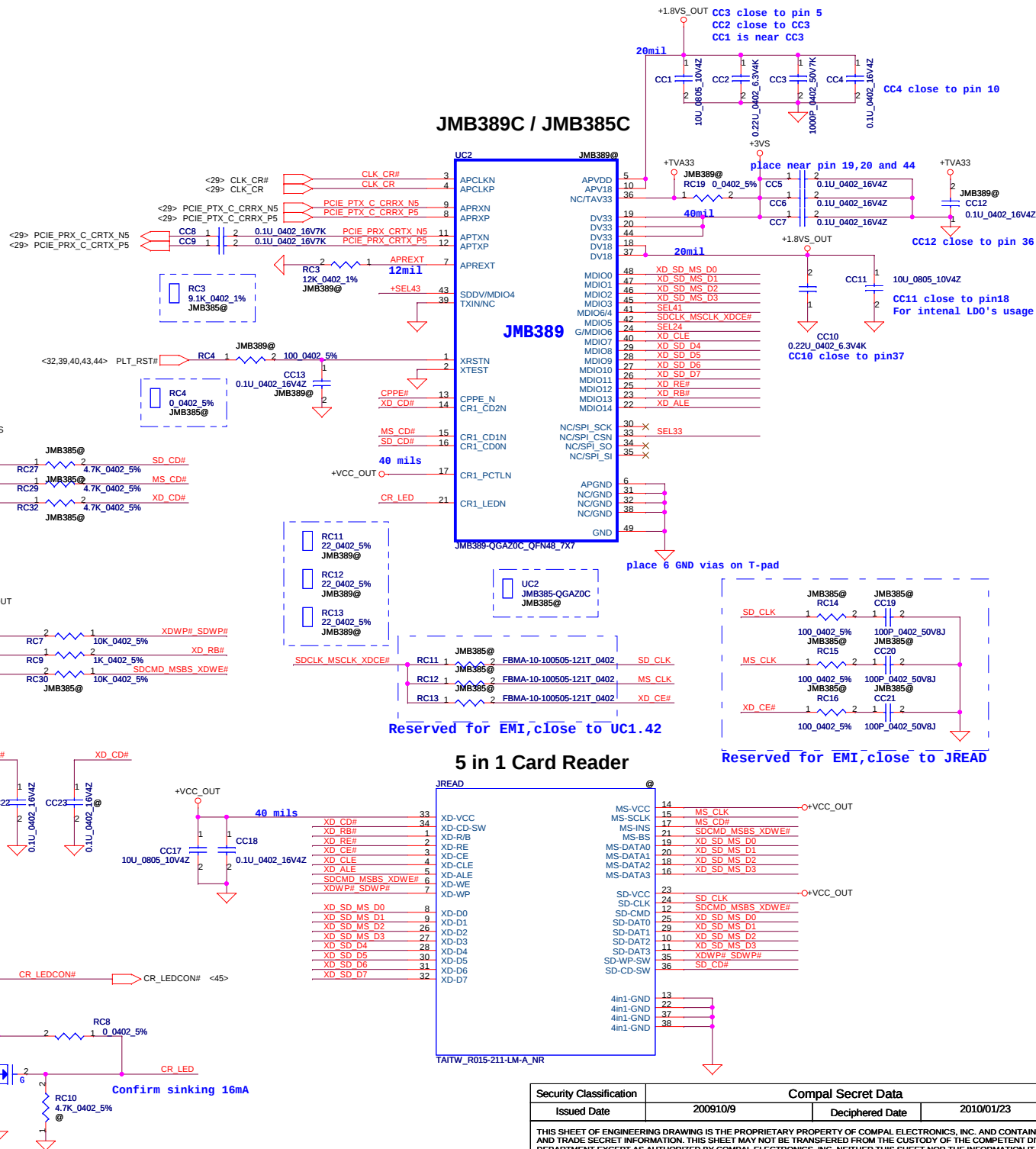


10/100M transformer

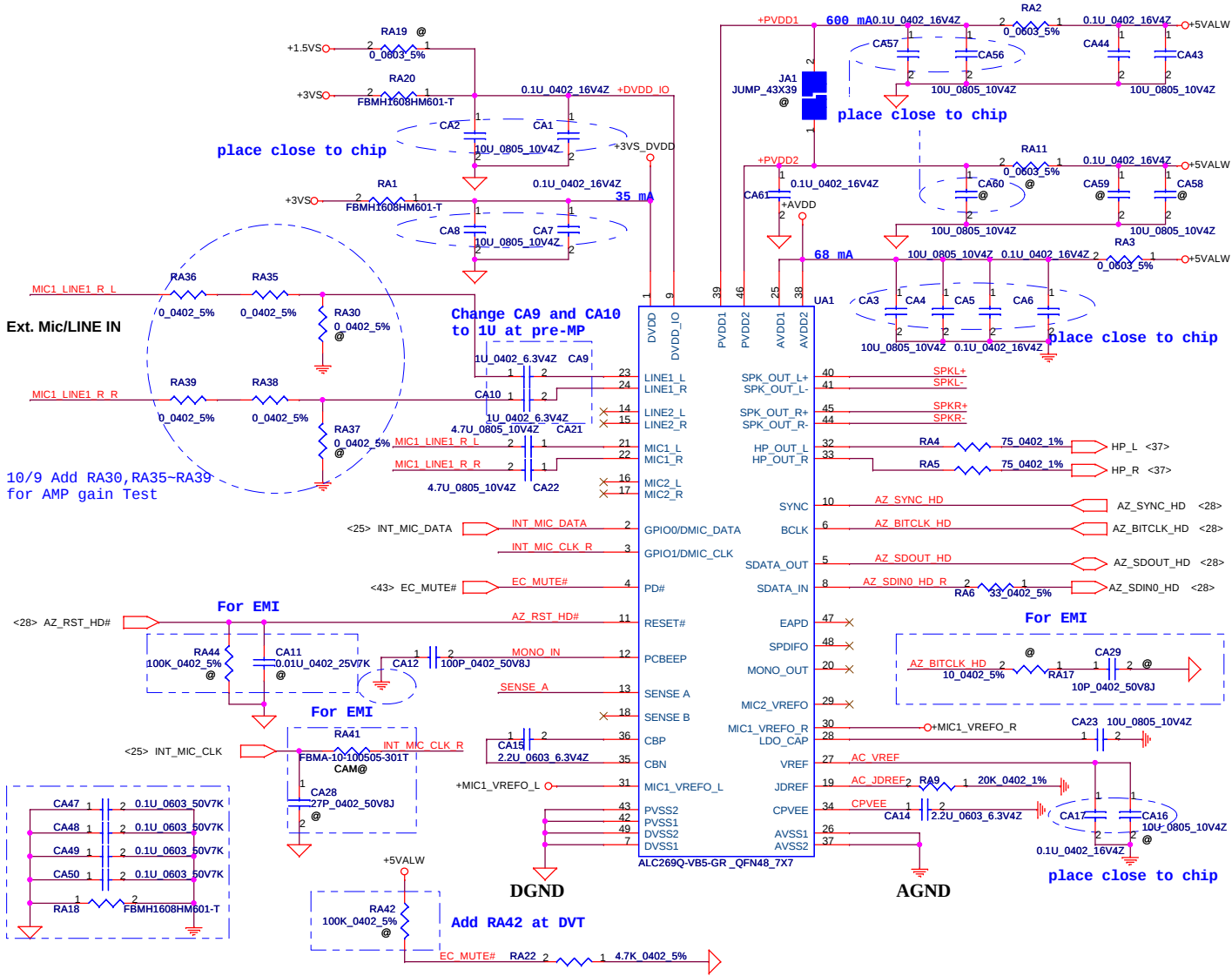
8105E@



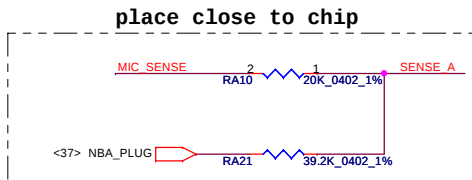
Security Classification		Compal Secret Data		Compal Electronics, Inc.										
Issued Date		2009/10/05		Deciphered Date		2010/01/23		Title		PCle-LAN-RTL8105E/8111E				
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Pin name	Description	
	High	low
MDIO7	on-board★	add-in card
MDIO14	CR_LED high active	CR_LED low active★

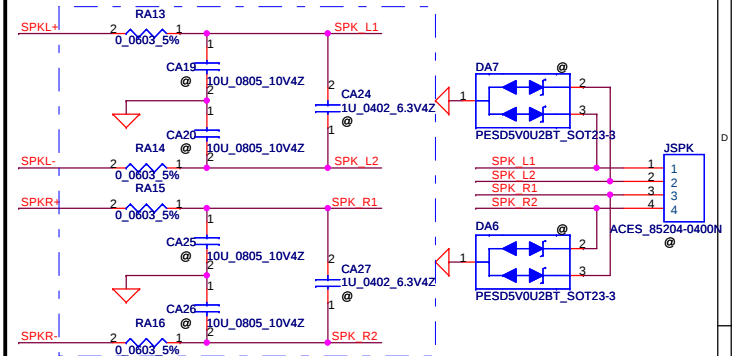


Sense Pin	Impedance	Codec Signals	Function
SENSE A	39.2K	PORT-I (PIN 32, 33)	Headphone out
	20K	PORT-B (PIN 21, 22)	Ext. MIC
	10K	PORT-C (PIN 23, 24)	
	5.1K	(PIN 48)	
SENSE B	39.2K	PORT-E (PIN 14, 15)	
	20K	PORT-F (PIN 16, 17)	
	10K	PORT-H (PIN 20)	



Speaker Connector

placement near Audio Codec



EC Beep

<43> EC_BEEP#

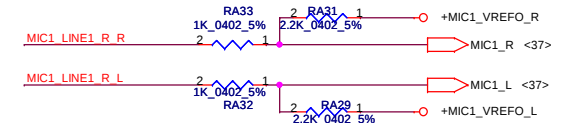
PCI Beep

<28,31> PCH_SPKR

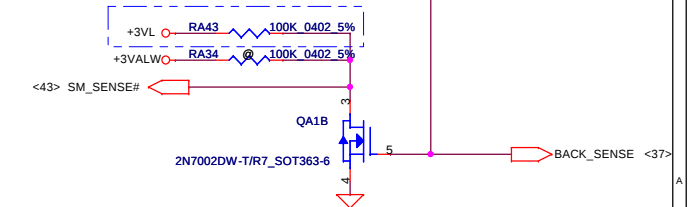
Change to AGND for high frequency noise issue

Beep sound

Ext.MIC/LINE IN JACK



Add RA43 for S/M battery mode at PVT

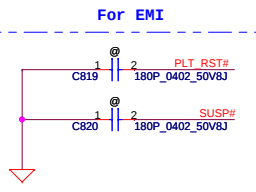
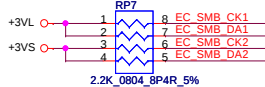
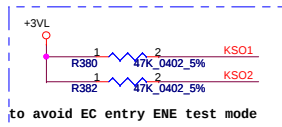
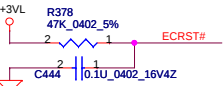
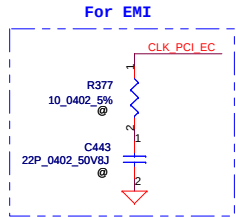


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Issued Date	200910/9	Deciphered Date	2010/01/23	Size	Document Number
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				Date:	Wednesday, March 24, 2010
				Sheet	42 of 59

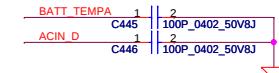
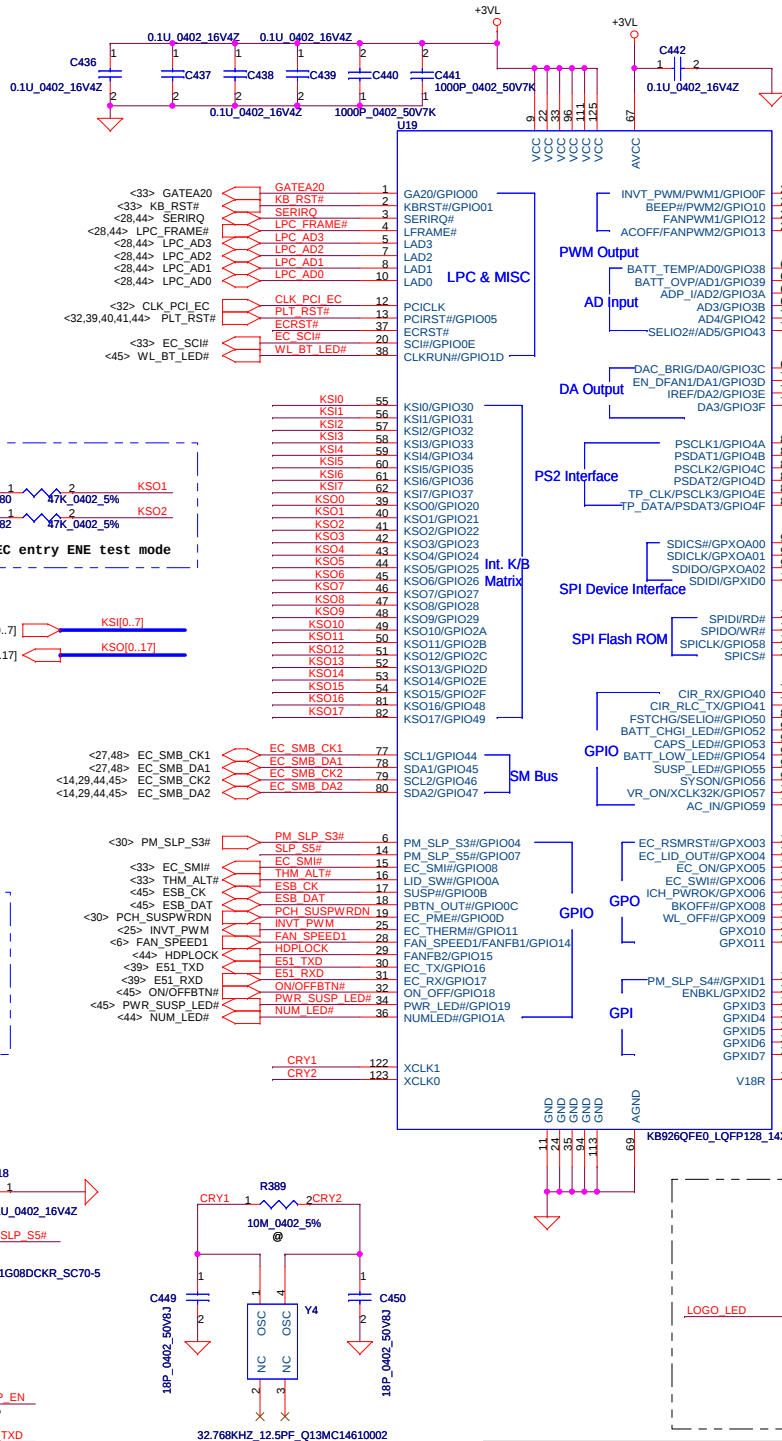
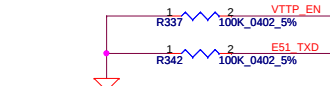
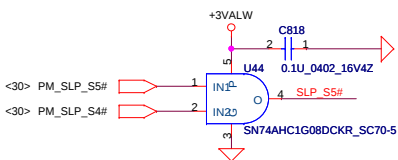
Compal Electronics, Inc.

HDA CODEC ALC269

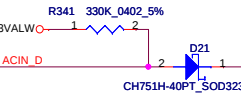
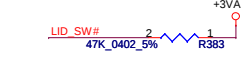
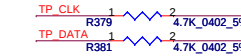
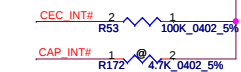
NWQAA LA-6062P M/B



close to EC

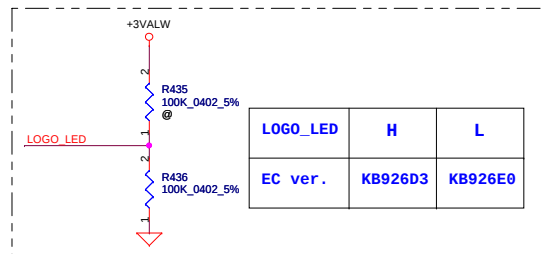
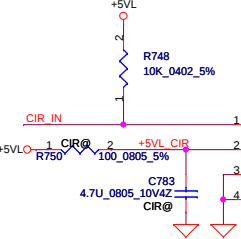


TV tuner temperature



Add CAP_RST# at PVT

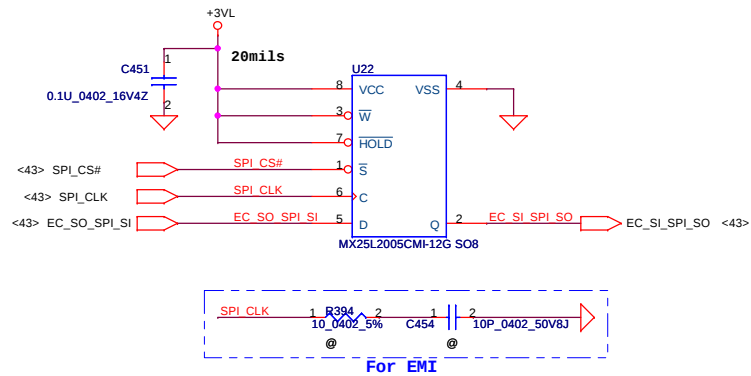
CIR



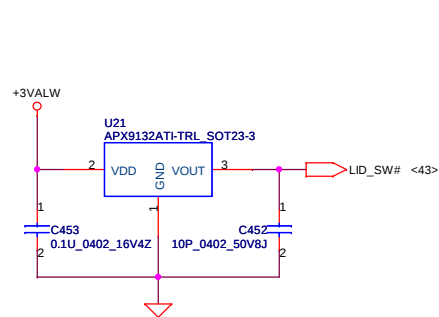
LOGO_LED	H	L
EC ver.	KB926D3	KB926E0

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Issued Date	200910/9	Deciphered Date	2010/01/23	Size	Document Number
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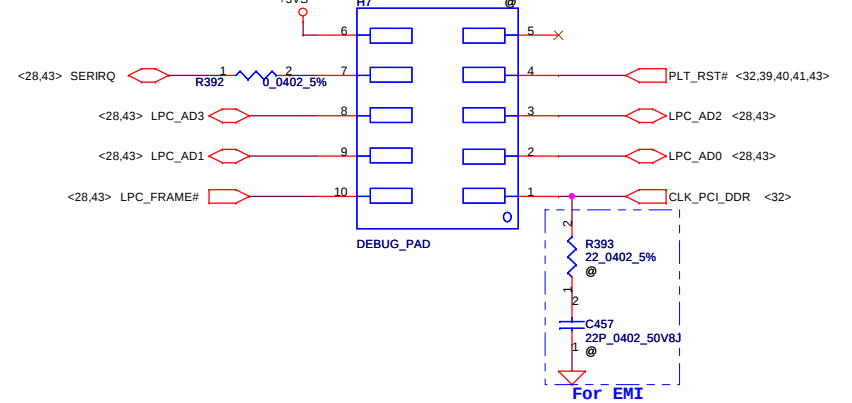
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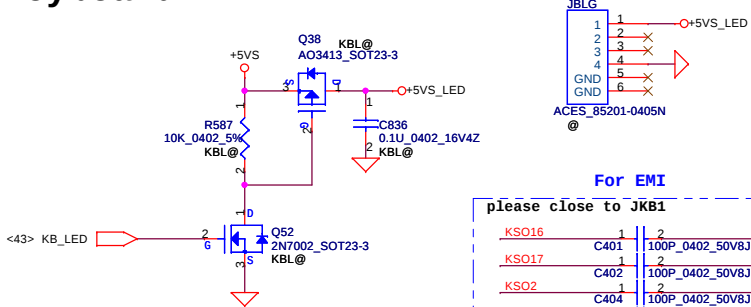
Lid SW



LPC Debug Port

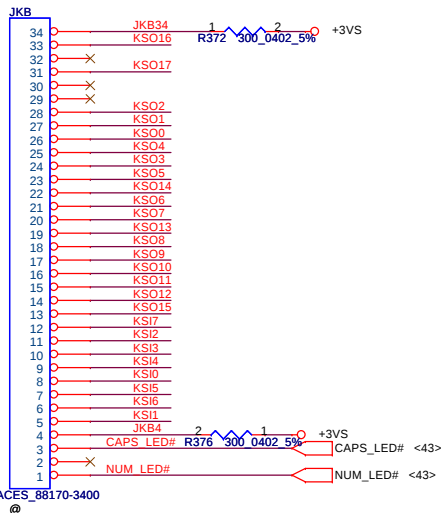


Keyboard LED



KEYBOARD CONN.

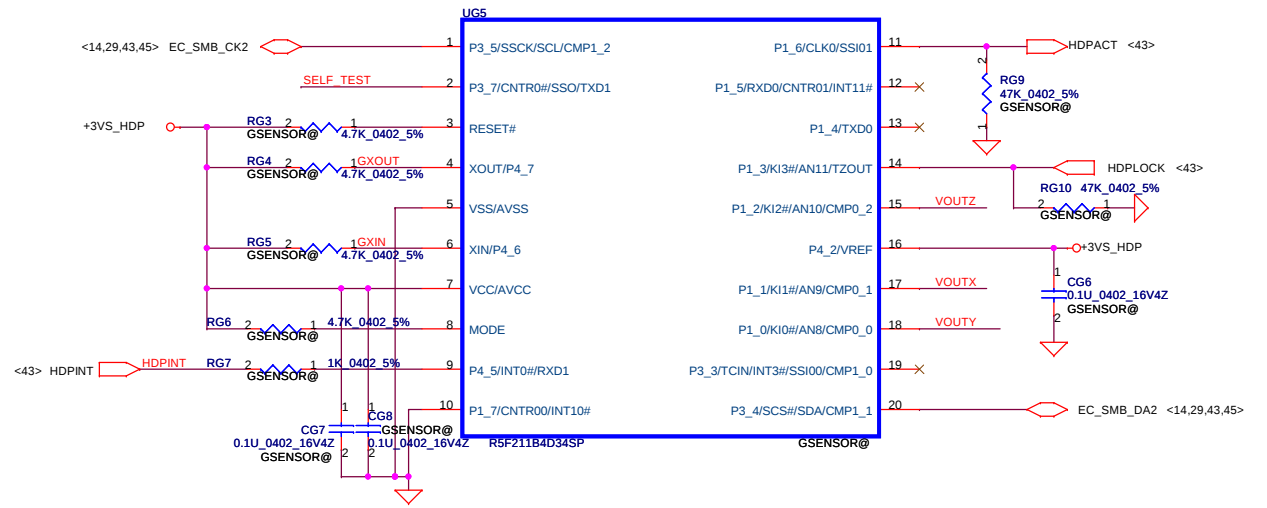
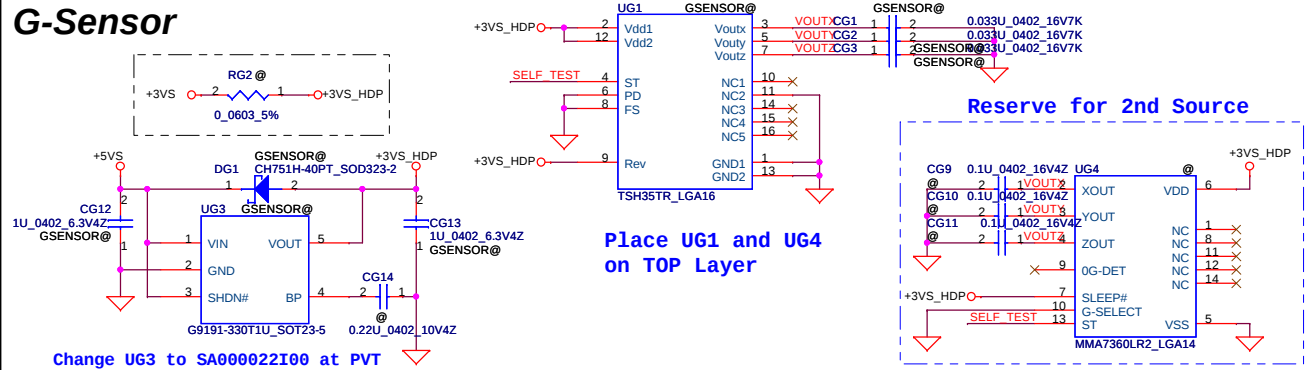
KS[0..7] KS[0..7] <43,45>
KS[0..17] KS[0..17] <43,45>



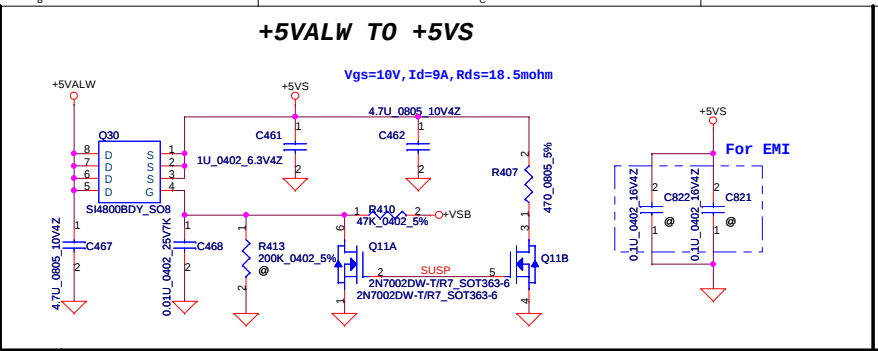
please close to JKB1

KSO16	C401	1	2	100P_0402_50V8J
KSO17	C402	1	2	100P_0402_50V8J
KSO2	C404	1	2	100P_0402_50V8J
KSO1	C405	1	2	100P_0402_50V8J
KSO0	C406	1	2	100P_0402_50V8J
KSO4	C407	1	2	100P_0402_50V8J
KSO3	C408	1	2	100P_0402_50V8J
KSO5	C409	1	2	100P_0402_50V8J
KSO14	C410	1	2	100P_0402_50V8J
KSO6	C411	1	2	100P_0402_50V8J
KSO7	C412	1	2	100P_0402_50V8J
KSO13	C413	1	2	100P_0402_50V8J
KSO8	C415	1	2	100P_0402_50V8J
KSO9	C416	1	2	100P_0402_50V8J
KSO10	C417	1	2	100P_0402_50V8J
KSO11	C418	1	2	100P_0402_50V8J
KSO12	C419	1	2	100P_0402_50V8J
KSO15	C420	1	2	100P_0402_50V8J
KSI7	C421	1	2	100P_0402_50V8J
KSI2	C422	1	2	100P_0402_50V8J
KSI3	C423	1	2	100P_0402_50V8J
KSI4	C424	1	2	100P_0402_50V8J
KSI0	C425	1	2	100P_0402_50V8J
KSI5	C427	1	2	100P_0402_50V8J
KSI6	C429	1	2	100P_0402_50V8J
KSI1	C431	1	2	100P_0402_50V8J
CAPS_LED#	C433	1	2	100P_0402_50V8J
NUM_LED#	C435	1	2	100P_0402_50V8J

G-Sensor



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				44
				of
				59

[illegible]

+1.5V to +1.5VS

Vgs=10V, Id=14.5A, Rds=6mohm

4.7U_0805_10V4Z

Q31

FDS5676AS_S08

+1.5V

+1.5VS

4.7U_0805_10V4Z

C463

1U_0402_6.3V4Z

C464

R408

470_0805_5%

R411

220K_0402_5%

Q12A

2N7002DW-T/R7_SOT363-6

2N7002DW-T/R7_SOT363-6

SUSP

0.1U_0402_25V6

R414

820K_0402_5%

Q12B

[illegible]

+1.05VS to +1.05VS_DGPU

Change +1.05VS_DGPU circuit to N-channel MOS at PVT

The diagram illustrates the conversion of the +1.05VS_DGPU circuit to an N-channel MOSFET circuit at PVT. The circuit includes a PMOSFET (Q56) and an NMOSFET (Q207A) in a common-source configuration. The PMOSFET is driven by a gate voltage $V_{gs} = 4.5V$ and a drain current $I_d = 3A$. The NMOSFET is driven by a gate voltage $V_{gs} = 4.5V$ and a drain current $I_d = 3A$. The output of the NMOSFET is connected to the +1.05VS_DGPU output. The circuit includes various resistors (R144, R434, R460) and capacitors (C493, C685, C686) for biasing and timing. The output is labeled +1.05VS_DGPU.

+3VS to +3VS_DGPU

3.33.56> DGPU_PWR_EN#

+3VALW

R433 100K_0402_5% OPT@

R426 47K_0402_5% OPT@

Q206A OPT@

2N7002DW-T/R7 SOT363-6

+3VS

C491 0.1U_0402_16V7K OPT@

Q54

AO3413_SOT23 OPT@

C492 0.01U_0402_25V7K OPT@

Vgs = -4.5V, Id = 3A, Rds < 97mohm

Change PJ32 to 0 ohm at DVT

R104 0.0805_5% DIS@

+3VS_DGPU

C683 4.7U_0805_10V4Z @

C684 1U_0402_6.3V4Z OPT@

+3VS_DGPU

+VGA_CORE

R458 470_0805_5% OPT@

Q206B OPT@

2N7002DW-T/R7 SOT363-6

R459 470_0805_5% OPT@

Q55

2N7002_SOT23-3 OPT@

Security Classification	Compal Secret	
Issued Date	200910/9	Declassify

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C

+5VS TO +5VS_ODD

5V_{DD} ODD_EN#

Q53 2N7002_SOT23-3

R457 470_0805_5%

+5VS

R398 10K_0402_5%

R397 47K_0402_5%

<32> ODD_EN#

Q45 AO3413_SOT23

C471 0.1u_0402_16V7K

C217 0.01u_0402_25V7K

PJ28 JUMP_43X79

V_{gs} = -4.5V, I_d = 3A, R_{ds} < 97mohm

+5VS_ODD

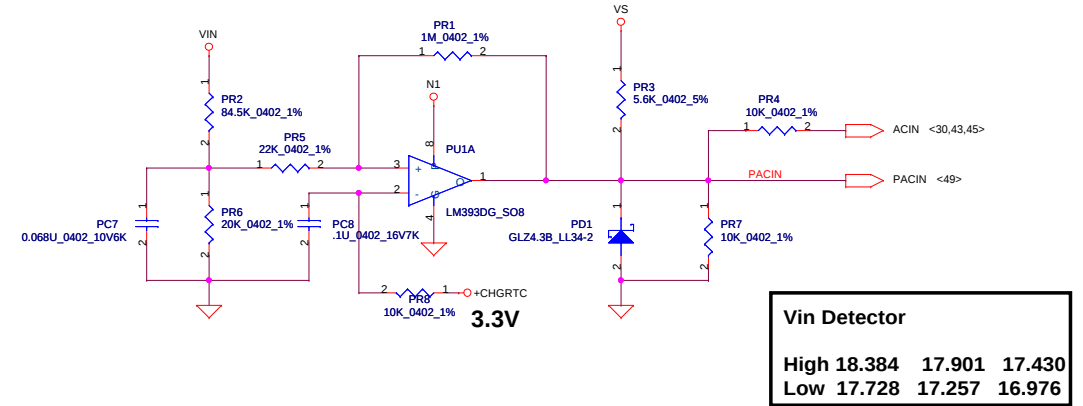
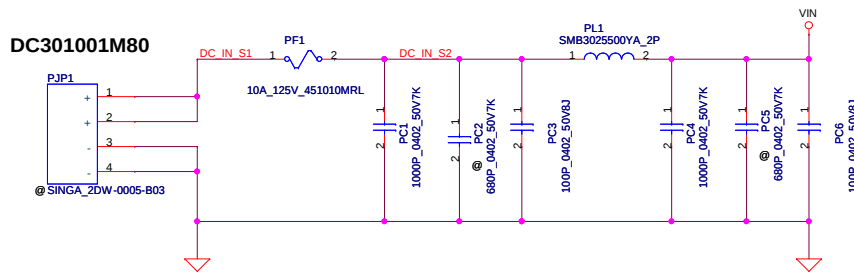
C679 4.7u_0805_10V4Z

C680 1u_0402_6.3V4Z

Secret Data		Compal Electronics, Inc.	
Order Date	2010/01/23	Title	DC-DC INTERFACE
Part Number	2010/01/23	Size	Document Number
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Date: Wednesday, March 24, 2010		Sheet: 46 of 59	
Rev: 2.0			

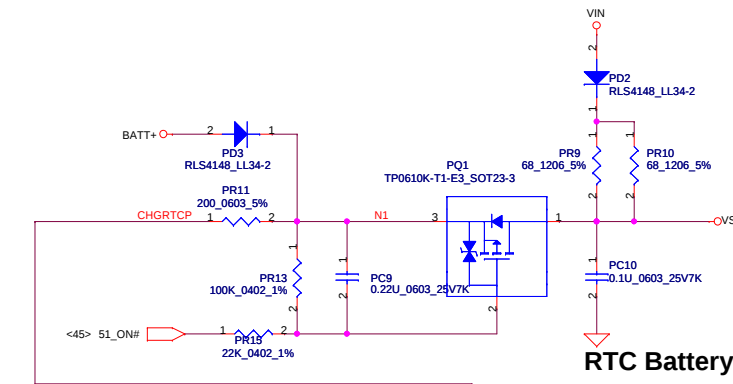
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Issued Date	200910/9	Deciphered Date	2010/01/23	Title		
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DC301001M80

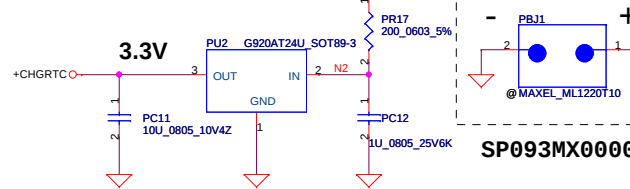


Vin Detector

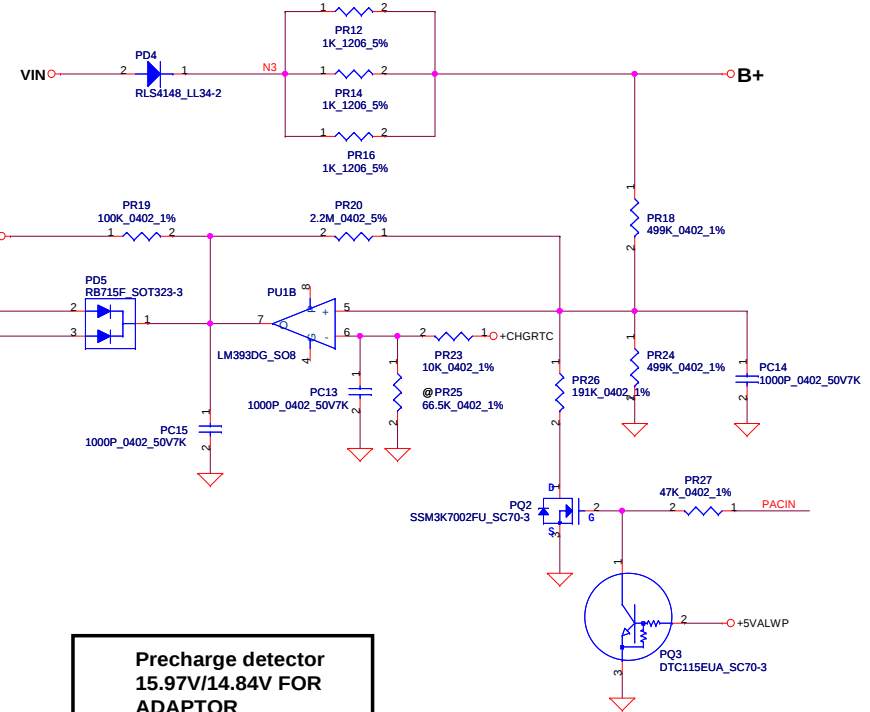
High 18.384 17.901 17.430
Low 17.728 17.257 16.976



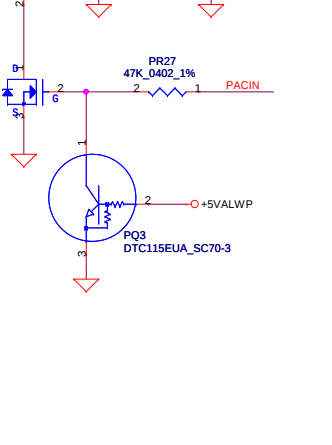
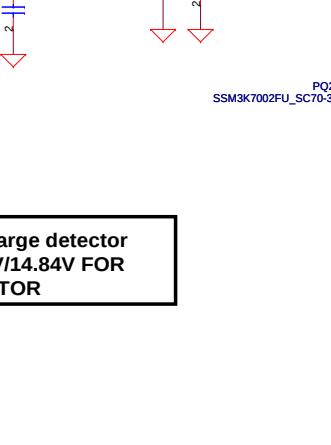
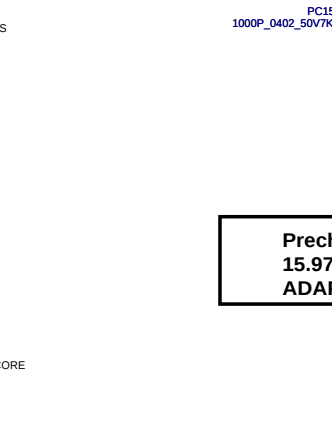
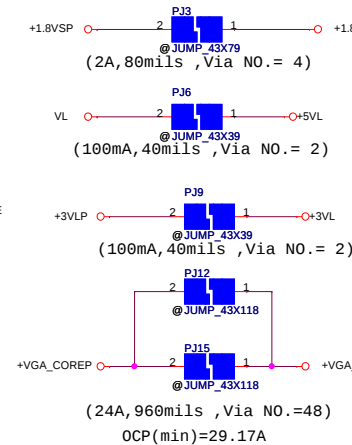
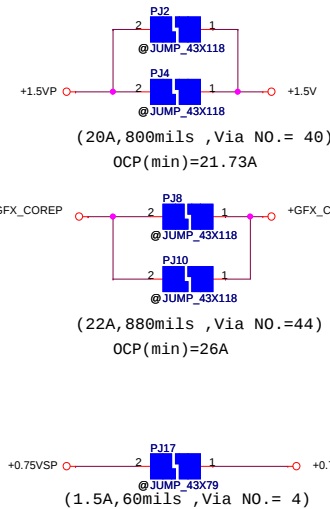
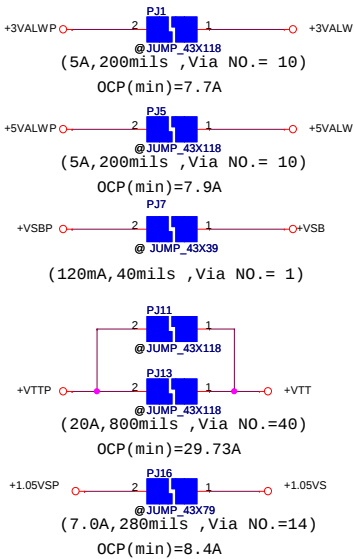
RTC Battery



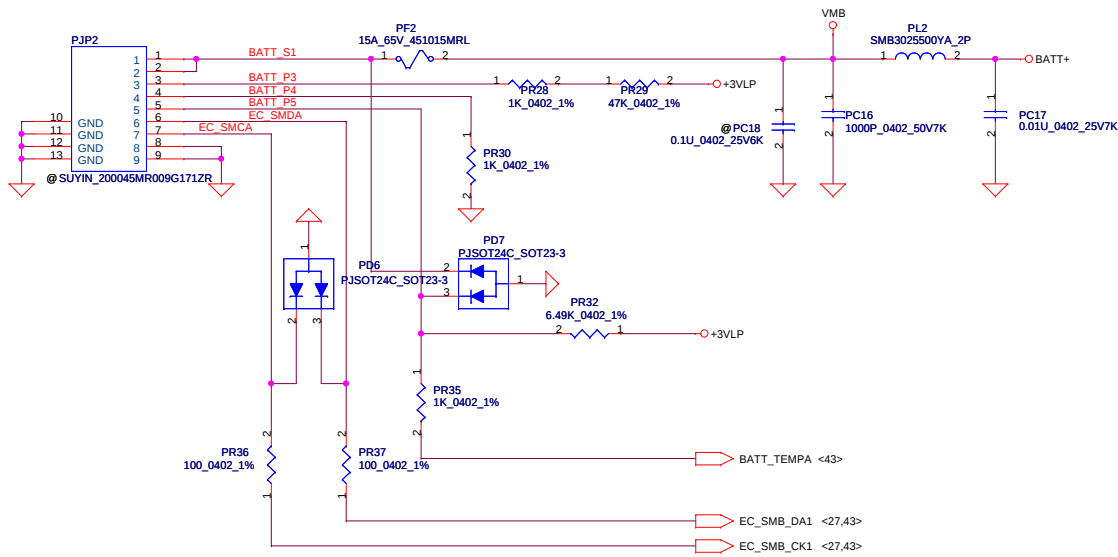
SP093MX0000



Precharge detector 15.97V/14.84V FOR ADAPTOR



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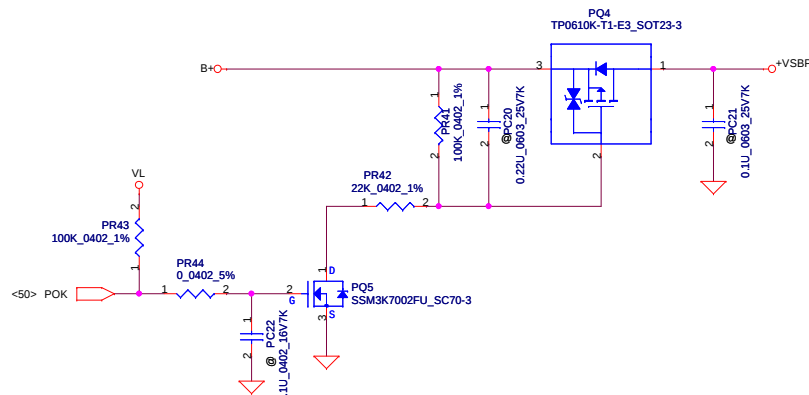
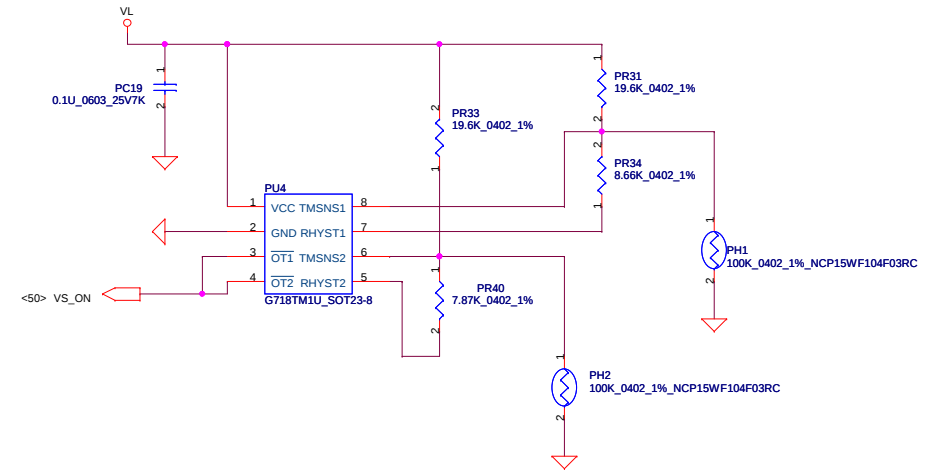


PH1 under CPU botten side :

CPU thermal protection at 95 degree C
Recovery at 56 degree C

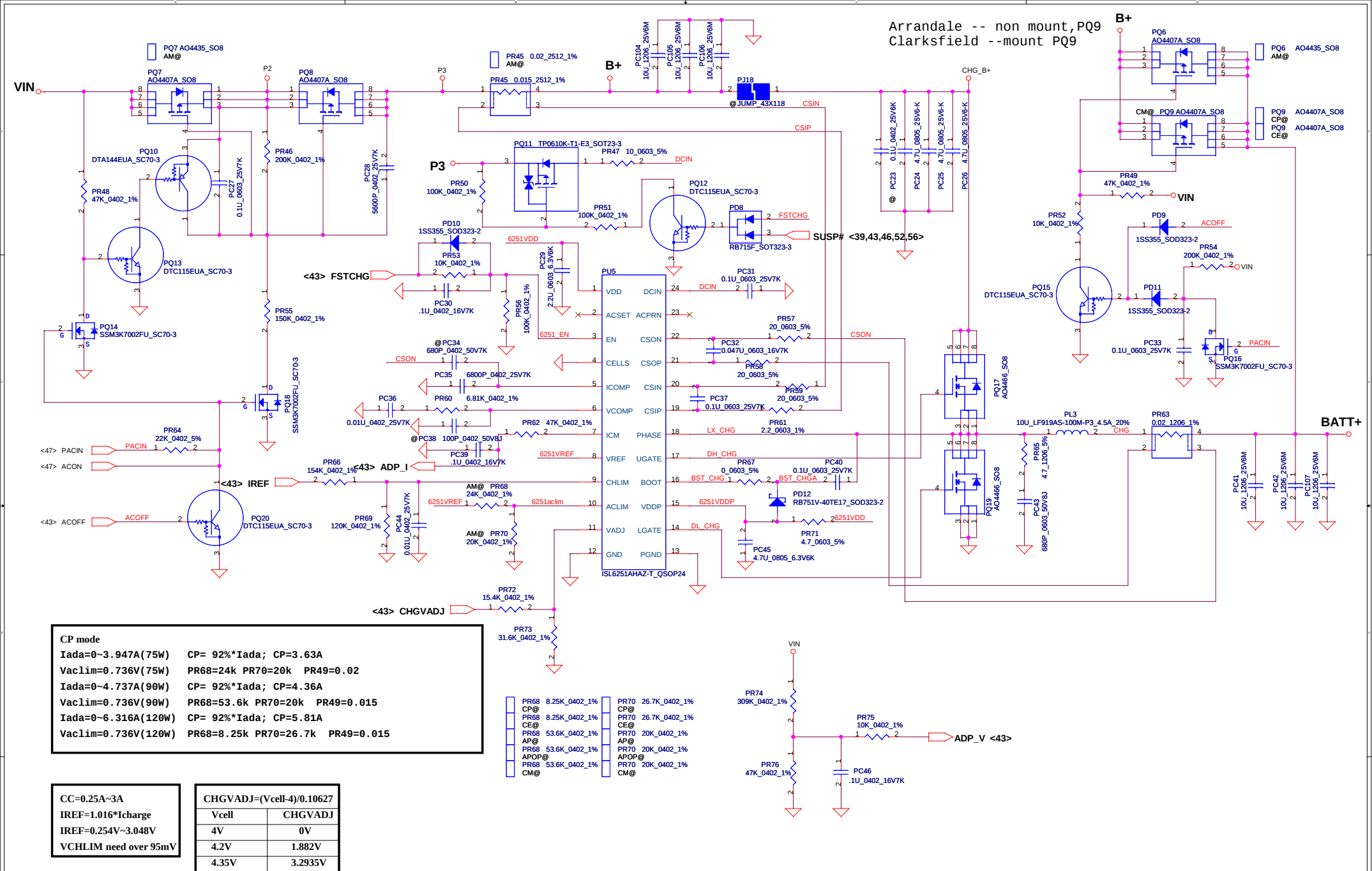
PH2 near main Battery CONN :

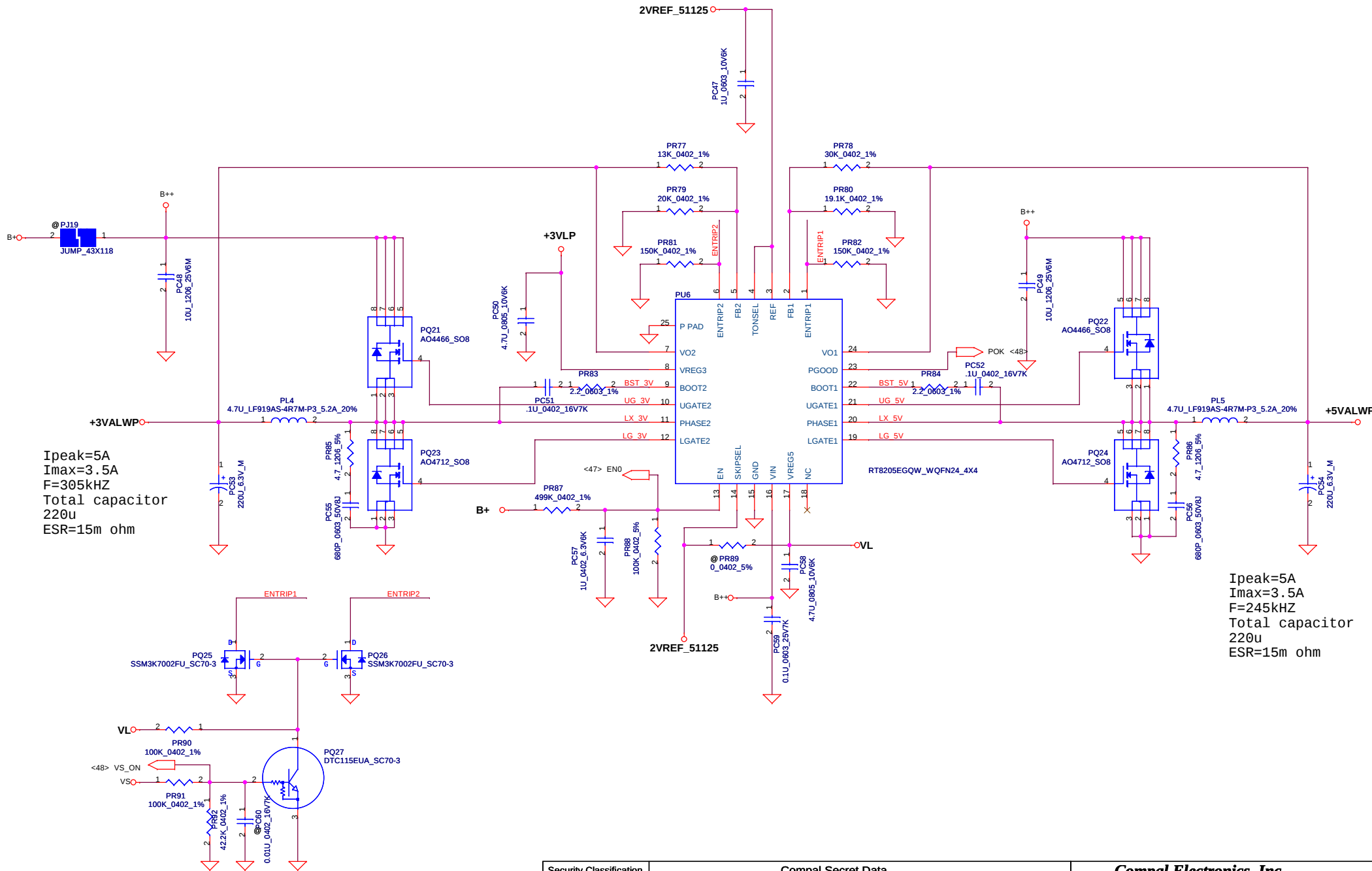
BAT. thermal protection at 95 degree C
Recovery at 48 degree C



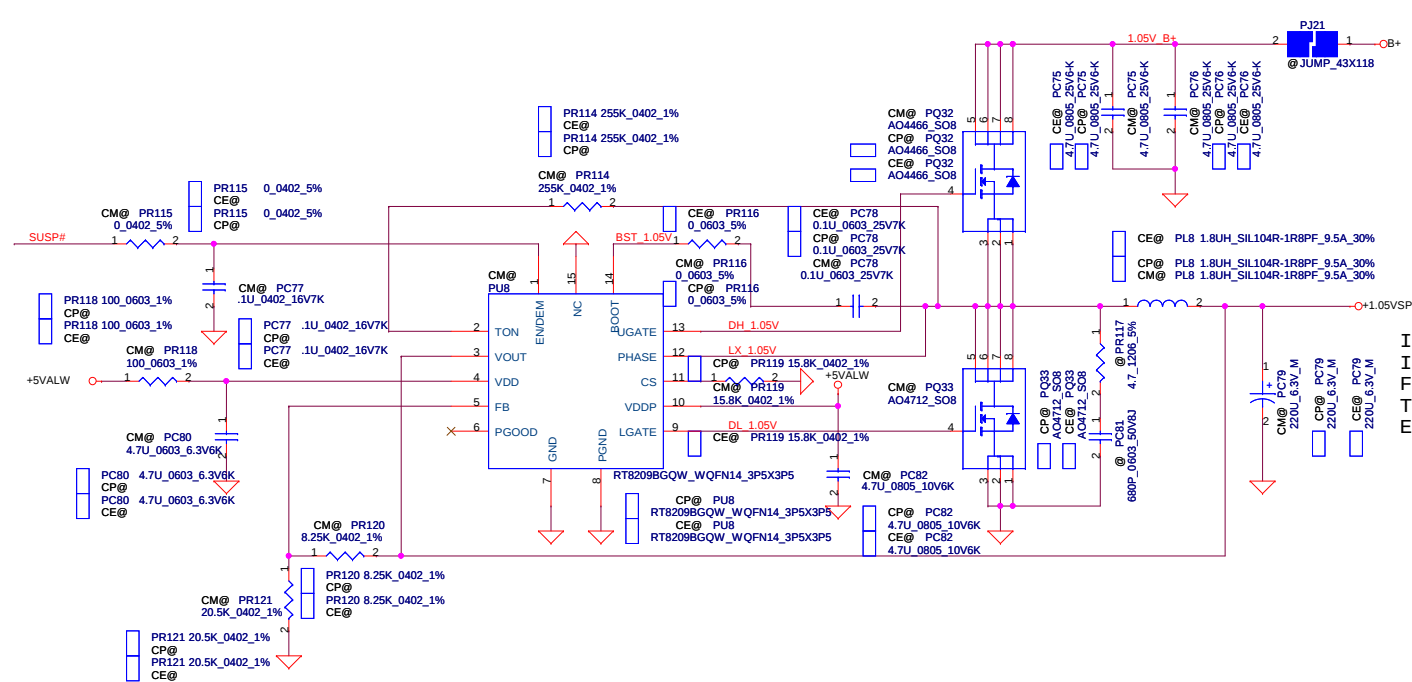
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Arrandale -- non mount, PQ9
Clarksfield -- mount PQ9



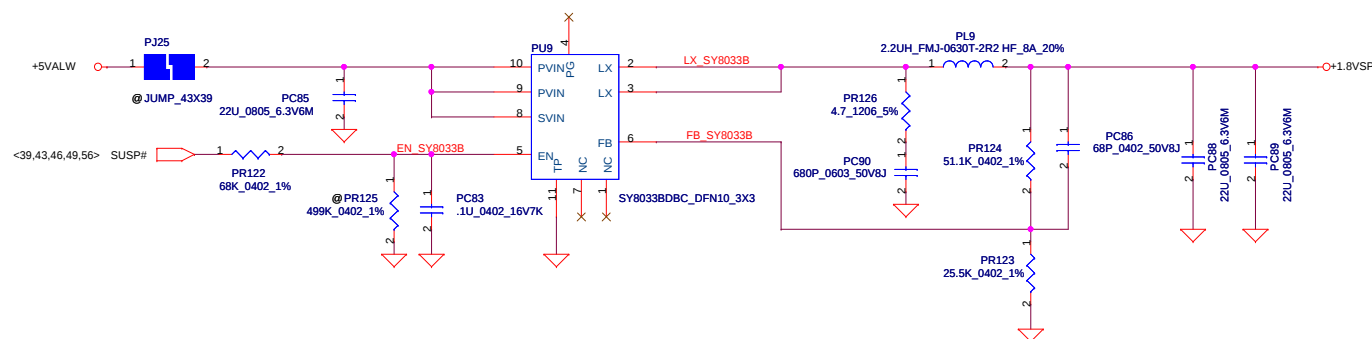


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						Size		Document Number		Rev	
								NWQAA LA-6062P M/B		2.0	
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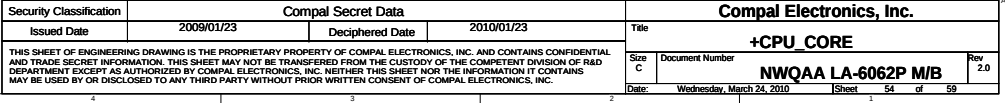


Arrandale -- non mount, @
Clarksfield --mount

Ipeak=7A
Imax=4.9A
F=313kHz
Total capacitor 550u
ESR=5m ohm



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NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
EVT		P53-PWR_1.5VP/0.75VSP	Change PR132 18k to 6.19k	Modify 1.5V OCP to 18.09A (2009/11/25)
EVT		P56-PWR_VGA_COREP	Change PR270 0 to 100 Ohm	Adjust RC for Optimus sequence (2009/11/25)
			Change PC178 0.1U to 0.01U	
EVT		P39-PWR_+VTTTP	Change PR141 2.26k to 2.43k	Modify VTTTPWROK voltage (2009/11/25)
EVT		P39-PWR_+VTTTP	Remove PC71 33P, PC72 2200P, PR101 33.2k	APW7138 not use this function (2009/11/25)
EVT		P38-PWR_3VALWP/5VALWP	Change PR92 49.9k to 42.2k	Modify VS divider voltage to drive MOS (2009/11/25)
EVT		P56-PWR_VGA_COREP	Remove PC179 22P, PC181 2200P, PR258 49.9k	APW7138 not use this function (2009/11/25)
EVT		P56-PWR_VGA_COREP	Change PR255 7.15k to 9.09k	Modify VGA 11P OCP to 38.03A (2009/11/25)
EVT		P56-PWR_VGA_COREP	Remove PC177 10U	FAE suggest to remove 1 10U cap for IC on time control (2009/11/25)
EVT		P42-PWR_CPU_CORE	Change PL12,PL14 SH000005680 to SH00000IK00	Use 5% DCR choke (2009/11/25)
EVT		P43-PWR_GM VGA_CORE	Change PH5 SL20000058L to SL200000500	Use Compal PN (2009/11/25)
DVT		P56-PWR_VGA_COREP	Change PR255 9.09k to 7.15k	Modify VGA 11P OCP to 29.17A (2009/12/28)
DVT		P43-PWR_GM VGA_CORE	Change PL16 SH00000HK00 to SH00000IK00	Use same PN choke (2009/12/28)
DVT		P39-PWR_+VTTTP	Change PR106 4.42k to 3.92k	Modify VTT voltage to 1.1V for Clarkfield (2009/12/28)
DVT		P42-PWR_CPU_CORE	Change PC114, PC111, PC185 from SF000000F80 to SF000000W00	Cost down (2009/12/28)
DVT		P43-PWR_GM VGA_CORE	Change PC161 to SGA00002680	For DVT budding(thermal issue), it will change to original type for PVT (2009/12/28)
DVT		P56-PWR_VGA_COREP	Change PR253 0 to 20k	For VGA sequence(2009/12/28)
DVT		P56-PWR_VGA_COREP	Change PR270 0 to 20k	For VGA sequence(2009/12/28)
DVT		P52-PWR_1.05VSP/1.8VSP	Add PC83 0.1U and change PR122 0 to 68k	For VGA sequence(2009/12/28)
DVT		P48-PWR_BATTERY CONN / OTP	Add PD6, PD7 ESD diode	For ESD solution(2009/12/28)
DVT		P49-PWR_CHARGER	Add PC104,PC105,PC106 10U	Reserve for EMI solution(2009/12/28)
DVT		P50-PWR_3VALWP/5VALWP	Change PR83,PR84 0 to 2.2	Add boost resistor(For EMI solution)(2009/12/28)
			Add PR85,PR86 4.7 and PC55,PC56 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P42-PWR_CPU_CORE	Change PR166,PR207 0 to 2.2	Add boost resistor(For EMI solution)(2009/12/28)
			Add PR169,PR210 4.7 and PC118,PC150 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P55-PWR_GM VGA_CORE	Change PR234 0 to 2.2	Add boost resistor(For EMI solution)(2009/12/28)
			Add PR235 4.7 and PC163 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P56-PWR_VGA_COREP	Add PR254 4.7 and PC175 680P	Add snubber(For EMI solution)(2009/12/28)
DVT		P48-PWR_BATTERY CONN / OTP	Change PR33 10k,PR31 21k to 19.6k, PR34 9.53k to 8.66k, PR40 47k to 7.87k	Adjust OTP setting point(2009/12/28)
DVT		P42-PWR_CPU_CORE	Add PQ39,PQ44 TPCA8028-H	Use 1H 2L MOS solution for Clarksfield (2009/12/31)
DVT		P42-PWR_CPU_CORE	Add PC109,PC142 10U input cap	For Clarksfield solution (2009/12/31)
DVT		P42-PWR_CPU_CORE	Change PR214 1.2k to 1.37k	Adjust CP0_CORE OCP to 65A (2009/12/31)
DVT		P42-PWR_CPU_CORE	Change PR196 2.43k to 2.87k	Adjust CPU_CORE load line (2009/12/31)
DVT		P42-PWR_CPU_CORE	Change PR204 8.25k to 10k	Adjust resistor for Imon (2009/12/31)
DVT		P39-PWR_+VTTTP	Change PR98 4.99k to 6.98k	Adjust VTT_DIS_Arrandale OCP to 29.73A (2009/12/31)
DVT		P53-PWR_1.5VP/0.75VSP	Change PR132 6.19k to 7.5k	Adjust 1.5V OCP to 21.73A(2009/12/31)
DVT		P52-PWR_1.05VSP/1.8VSP	Change PQ33 from FDS6670 to A04712	Change design rating(2009/12/31)
DVT		P39-PWR_+VTTTP	Change PR98 6.98k to 4.99k	Adjust VTT_DIS_Clarksfield OCP to 20.64A (2009/12/31)
DVT		P55-PWR_GM VGA_CORE	Change PR247 34.8k to 37.4k	Adjust GFX load line (2009/12/31)
DVT		P41-PWR_0.75VSP/1.8VSP	Change PC90 SE025681K80 to SE024681J80	Use same PN (2009/12/31)
DVT		P56-PWR_VGA_COREP	Change PR270 20k to 68k, PC178 0.01U to 0.1U	Adjust Optimus sequence (2010/01/06)
PVT		P41-PWR_0.75VSP/1.8VSP	Remove PR136, Add PR137 0 Ohm	For S3 power saving function (2010/02/03)
PVT		P43-PWR_GM VGA_CORE	Change PC161 to SF000002000	Change to original type for PVT (2010/02/03)
PVT		P49-PWR_CHARGER	Change PC24,PC25,PC26 4.7U to 10U	For EMI solution(ISN test) (2010/02/03)
PVT		P49-PWR_CHARGER	Add PC107 10U	For EMI solution(ISN test) (2010/02/03)
PVT		P49-PWR_CHARGER	Add PC104,PC105,PC106 10U	For EMI solution(ISN test) (2010/02/03)
PVT		P38-PWR_3VALWP/5VALWP	Change PQ27 from SSMK7002 to DTC115EUA	Use low Vth Transistor (2010/02/03)
PVT		P52-PWR_1.05VSP/1.8VSP	Change PR119 10k to 15.8k	Adjust 1.05V OCP to 8.47A (2010/02/03)

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				Size	Document Number	Rev
					Calpella common	2.0
Date:		Tuesday, March 23, 2010		Sheet	57	of 59

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
Pre MP		P52-PWR_1.05VSP/1.8VSP	Change PR123 316k to 25.5k,PR124 402k to 51.1k	Adjust 1.8V voltage divided resistor (2010/03/07)
Pre MP		P52-PWR_1.05VSP/1.8VSP	Change PU9 from MP2121 to SY8033	MP2121 ESD fail (2010/03/07)
Pre MP		P52-PWR_1.05VSP/1.8VSP	Delete PR125 0 Ohm	Change for SY8033 solution(2010/03/07)
			Change PC85 from 0.1U to 22U	
			Delete PC87 10UF, PC84 0.1U	
Pre MP		P52-PWR_1.05VSP/1.8VSP	Change PC86 10U to 68P	Improve 1.8V transient under shoot(2010/03/07)
Pre MP		P49-PWR_CHARGER	Change PC24,PC25,PC26 10U to 4.7U	10U 0805 size price too high(2010/03/07)
Pre MP		P47-PWR_DCIN/DECTOR	Change PC12 from SE033105Z80 to SE000001380	Change PN(2010/03/07)
Pre MP		P49-PWR_CHARGER	Change PR68 from 53.6k to 24k, PR45 from 0.015 to 0.02 Ohm	Change CP from 90W to 75W(For cost down)(2010/03/07)
Pre MP		P49-PWR_CHARGER	Change PQ6,PQ7 from A04407A to A04435	Change MOS reting for 75W adapter(For cost down)(2010/03/07)
Pre MP		P56-PWR_VGA_COREP	Add PR264,PR267 100k	Use 100k resistor to pull high +3VS_DGPU(Set initial VID to P0 state)(2010/03/07)

Security Classification		Compal Secret Data		Title	
Issued Date		2009/01/23	Deciphered Date	2010/01/23	
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		Calpella common			2.0
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HW PIR (Product Improve Record)

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.1 TO 0.2
GERBER-OUT DATE: 2009/12/30

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	12/7	37	Add +5VALW and +5VL for JPIO pin5	For BACK_SENSE detect
2	12/7	46	Change PJ32 to R104 and PJ33 to R144	For discrete BOM structure
3	12/7	25	Remove JLVDS pin10 and pin12 for +LCDVDD_R	3D Panel max. current is 1.5A
4	12/8	45	Combine JTOUCH and JLP to JTPL and remove C648	For ME cost down
5	12/8	13	Add QV2, RV110, RV123 and RV124	For CLK_REQ_V6A# level shifter
6	12/14	25	Add C495 and C496	For RF request
7	12/15	33	Add R258	For OPTIMUS_EN#
8	12/15	34	Add C499	For power team request
9	12/17	45	Remove D19	Move D19 to LS-6061P
10	12/18	38	Reverse JBT pin definition	Due to pin reverse
11	12/18	42	Add RA42	For codec EC_MUTE# issue
12	12/21	41	Change JREAD to Push-push type (R015-211-LM-A)	For PRD update
13	12/21	25	Move LED_PWM and BKOFF#_R to JLVDS pin10 and pin12	For avoiding +LCD_INV short issue
14	12/22	44	Change H7 footprint to "DEBUG_PAD-MB-S"	For debug use
15	12/23	39	Add D24 and Q36 for BT_CTRL	For WLAN & BT combo module
16	12/23	33	Add R461	For CIR_EN#
17	12/24	25	Mount C236 and C268	For ESD request
18	12/24	37	Change JPIO footprint and reverse its pin definition	For ME request
19	12/24	27	Add R145	For U9 ESD damage issue
20	12/24	41	Add F3	For connector short issue
21	12/28	42	Change RA41 to SM01000CY00 (FBMA-10-100505-301T)	For EMI request
22	12/28	25	Remove L1	For 3D panel
23	12/29	42	Change RA1, RA18 and RA20 to SM01000B200	For RF request
24	12/29	25	Change C484 to 100P	For RF request
25	1/6	37	Change C426 to SF000001500	For cost down
26	1/12	38	Change R132 BOM from FLICA@ to FELICA@	For Felica issue
27	1/12	11	Change C218 to SF000002000	For cost down
28	1/12	8	Change C144 to SF000002Z00	For thermal interfere issue

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.2 TO 0.3
GERBER-OUT DATE: 2010/02/08

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	1/15	42	Add RA43	For sleep & music on battery mode
2	1/15	46	Change +1.05VS_DGPU to N-MOS	For +1.05VS_DGPU drop issue
3	1/21	43	Add R462	Avoid VR_ON floating
4	1/25	44	Change U63 to SA000022I00	For LDO issue
5	1/25	45	Change SW2 to @	For ME interfere issue
6	1/27	9	Change CV57, CV58 abd C271 to OS-CON	For cost down
7	2/1	25	Add +LCD_VDD to JLVDS pin18	For CM0 3D Panel
8	2/1	27	Add R208	For AOC monitor issue
9	2/1	43	Change U19 to SA00001J5A0	For KB926 E0 version
10	2/1	39	Add +1.5VS for J36	For TV tuner MC770A
11	2/1	41	Remove F3	For UC1 ES2 sample
12	2/2	43	Add CAP_RST# to EC	For ESD issue
13	2/3	41	Change RC7 to 33 ohm	For EMI request
14	2/4	42	Remove RA40, add RA44 and RA22	For audio issue
15	2/4	14	Reserve VBIOS ROM	For SW request
16	2/5	32	Swap USB port4 and port8	For customer request
17	2/5	13	Reserve 27MHz crystal	For HDMI issue
18	2/9	40	Change LL1 to 2.2U and CL13 to 4.7U	For Realtek request
19	2/10	41	Change RC7-RC14 to 22 ohm	For O2 request
20	2/10	27	Remove HDMI common mode choke	For cost down

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.3 TO 1.0
GERBER-OUT DATE: 2010/03/15

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	3/6	32	Change R390 to 1K	For Optimus sequence
2	3/6	33	Change R59 to 1K	For Optimus sequence
3	3/6	27	Change Q18 and Q19 power to +3VS_DGPU	For GPU power rail
4	3/6	41	Add QC2 and RC16	For O2 B0 workaround
5	3/7	28	Change D13.2 power to +CHGRTC	For RTC issue
6	3/8	32	Add R333 and R334	For Optimus sequence
7	3/8	25	Add BOM structure 3D@ and N03D@	For 3D SKU PWM
8	3/8	13	Change YV1 to SJ100006R00	For cost down
9	3/11	46	Change C685 to 0603 size	For ME height limit
10	3/11	45	Change H15-H19 to H_3P3	For ME request
11	3/15	45	Remove SW2	For ESD request
12	3/15	42	Change CA9 and CA10 to 1U	For cut-off frequency
13	3/16	42	Change MON0_IN to AGND	For high frequency noise issue

NWQAA LA-6062P SCHEMATIC CHANGE LIST
REVISION CHANGE: 1.0 TO 2.0
GERBER-OUT DATE: 2010/03/19

NO	DATE	PAGE	MODIFICATION LIST	PURPOSE
1	3/17	41	Change cardreader to JMB385/389	For customer request
2	3/18	34	Add R49	For CRT wave issue
3	3/19	13	Change LV3 to always stuff	For NVIDIA request
4	3/19	34	Change L12 to 2.2 ohm for Optimus SKU	For CRT wave issue
5	3/22	27	Add D54	For HDMI CEC issue
6	3/24	25	Chane C214 to 1U	For NALAA ESATA performance low issue