

Compal Confidential

HCW50 Schematics Document

AMD/Sempron/ATI RX485/SB460 W/s M52/54/56P

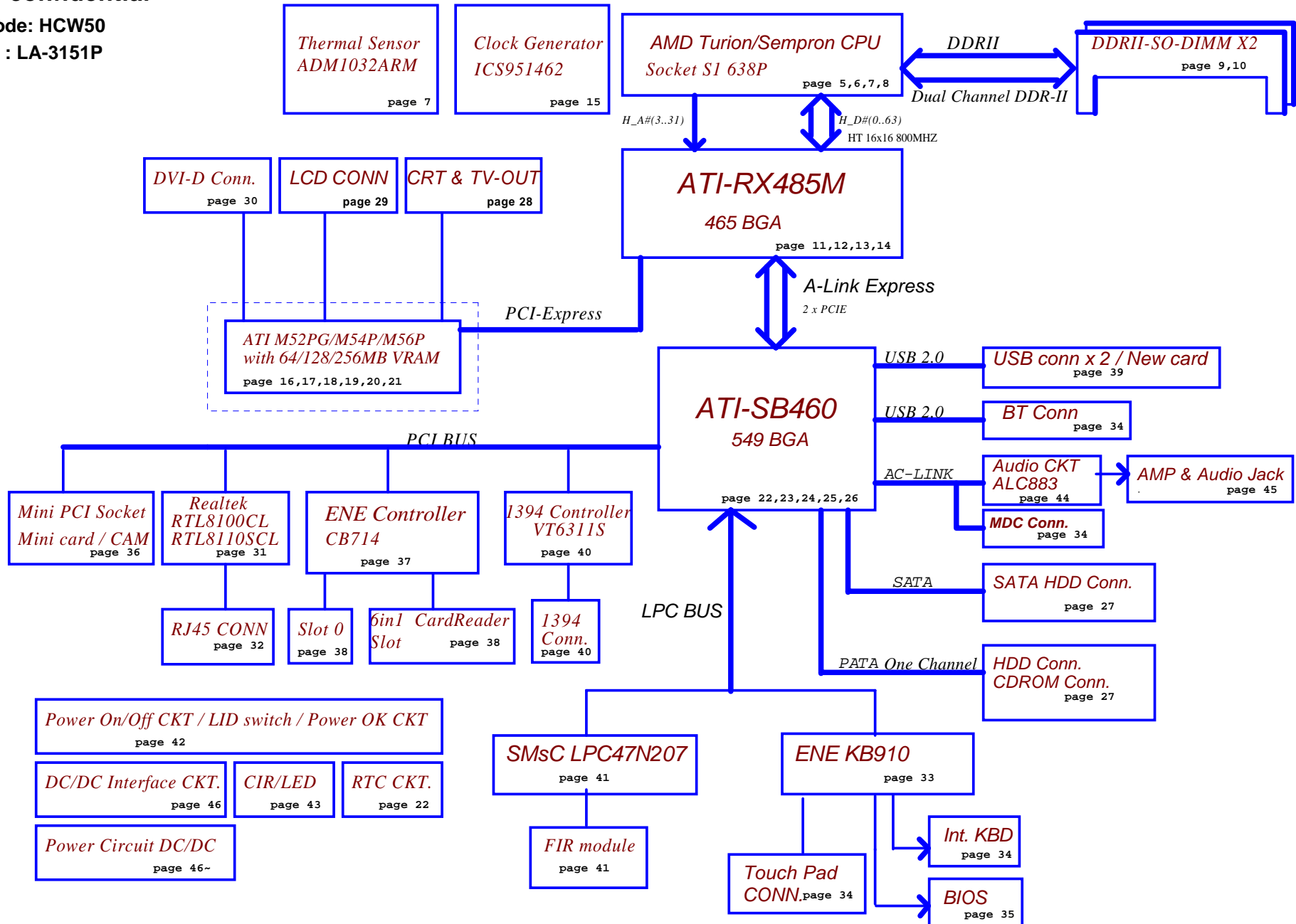
2006 / 02 / 28 Rev:0.3 (For PVT)

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Issued Date	2005/05/09	Deciphered Date	2006/03/08	Title	SCHEMATIC, M/B LA-3151P	
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Project Code: HCW50

File Name : LA-3151P



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Voltage Rails

Power Plane	Description	S0	S3	S5
VIN	Adapter power supply (19V)	NA	NA	NA
B+	AC or battery power rail for power circuit.	NA	NA	NA
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+0.9V	0.9V switched power rail for DDRII terminator	ON	ON	OFF
+1.2V_HT	1.2V switched power rail	ON	OFF	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDRII	ON	ON	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+VSB	VSB always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON*
+1.2VS	1.2V switched power rail for PCIE	ON	OFF	OFF
+0.9VS	0.9V switched power rail for VRAM terminator	ON	OFF	OFF
+1.8VALW	1.8V switched power rail	ON	ON	ON*
+VDD_CORE	1.0-1.2V switched power rail for VGA	ON	OFF	OFF

Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
CardBus(SD)	AD20	2	PIRQE/PIRQH
1394	AD16	0	PIRQE
LAN(10/100)	AD17	3	PIRQF
Mini-PCI(WLAN/TV-Tuner)	AD18	1	PIRQG/PORQH

EC SM Bus1 address

Device	Address	Device	Address
Smart Battery	0001 011X b	Fintek F75383M	1001 100X b
EEPROM(24C16/02)	1010 000X b		
GMT G781-1	1001 101X b		

EC SM Bus2 address

SB460 SM Bus address

Device	Address
Clock Generator (ICS9LPR325AKLFT_MLF72)	1101 001Xb
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb

STATE	SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON		HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)		LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)		LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)		LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)		LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

Board ID / SKU ID Table for AD channel

Board ID	Rb / Rd / Rf	VAD_BID min	VAD_BID typ	VAD_BID max
0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

BOARD ID Table

Board ID	PCB Revision
0	0.1
1	
2	
3	
4	
5	
6	
7	

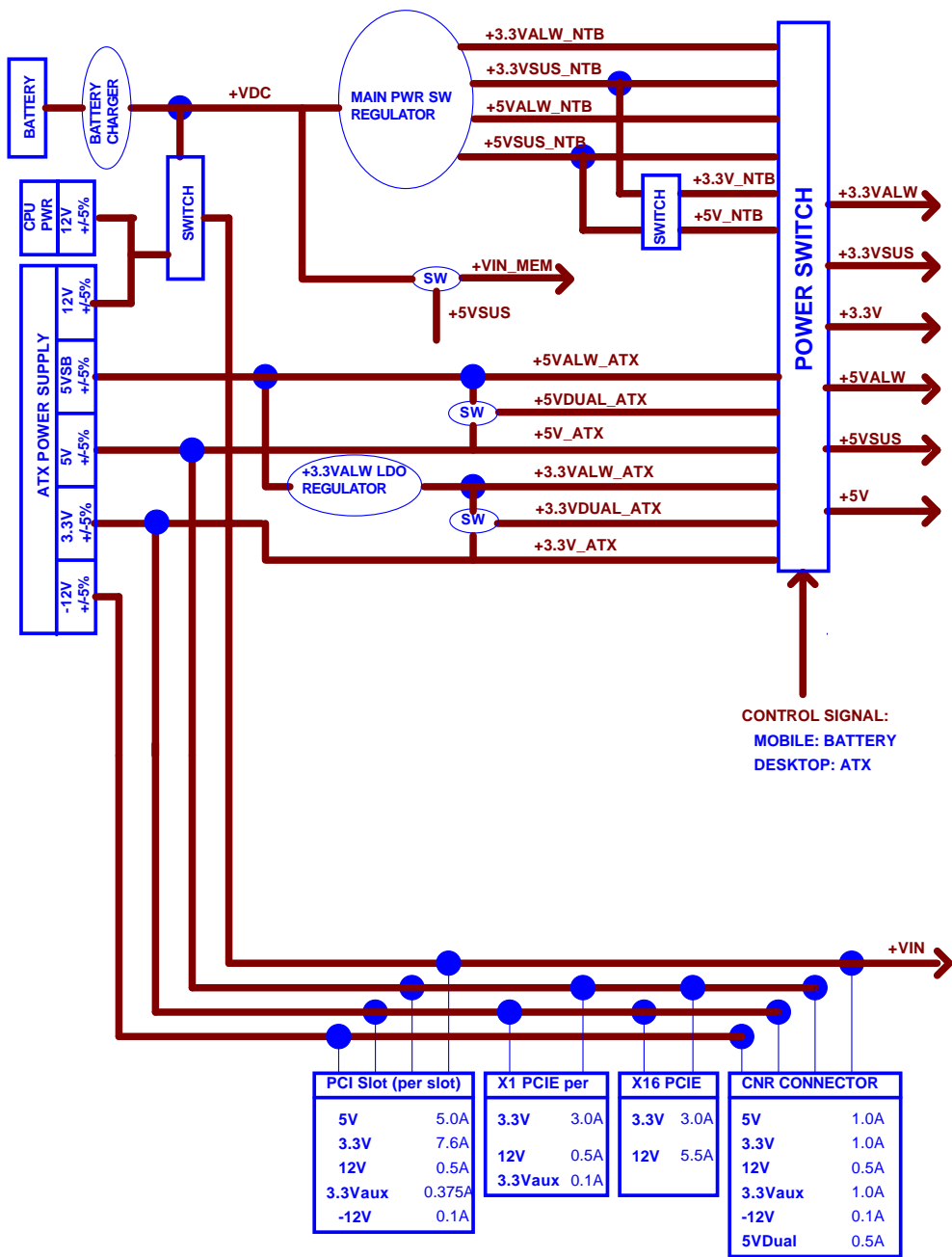
SKU ID Table

SKU ID	SKU
0	PM
1	GM
2	
3	
4	
5	
6	
7	

BTO Option Table

BTO Item	BOM Structure
VGA	
UMA	
UMA's DVI	
LAN(10/100)	
LAN(GIGA)	
MINI CARD1	
MINI CARD2	
SATA-to-IDE	
PATA	
GRAPEVINE	
G72MV Only	
G73 Only	
VRAM	
VRAM 64M	
VRAM 128M	
VRAM 256M	
MEDIA/B	
CIR	
FIR	
GENEVA	
LCM	
Sub-woofer	

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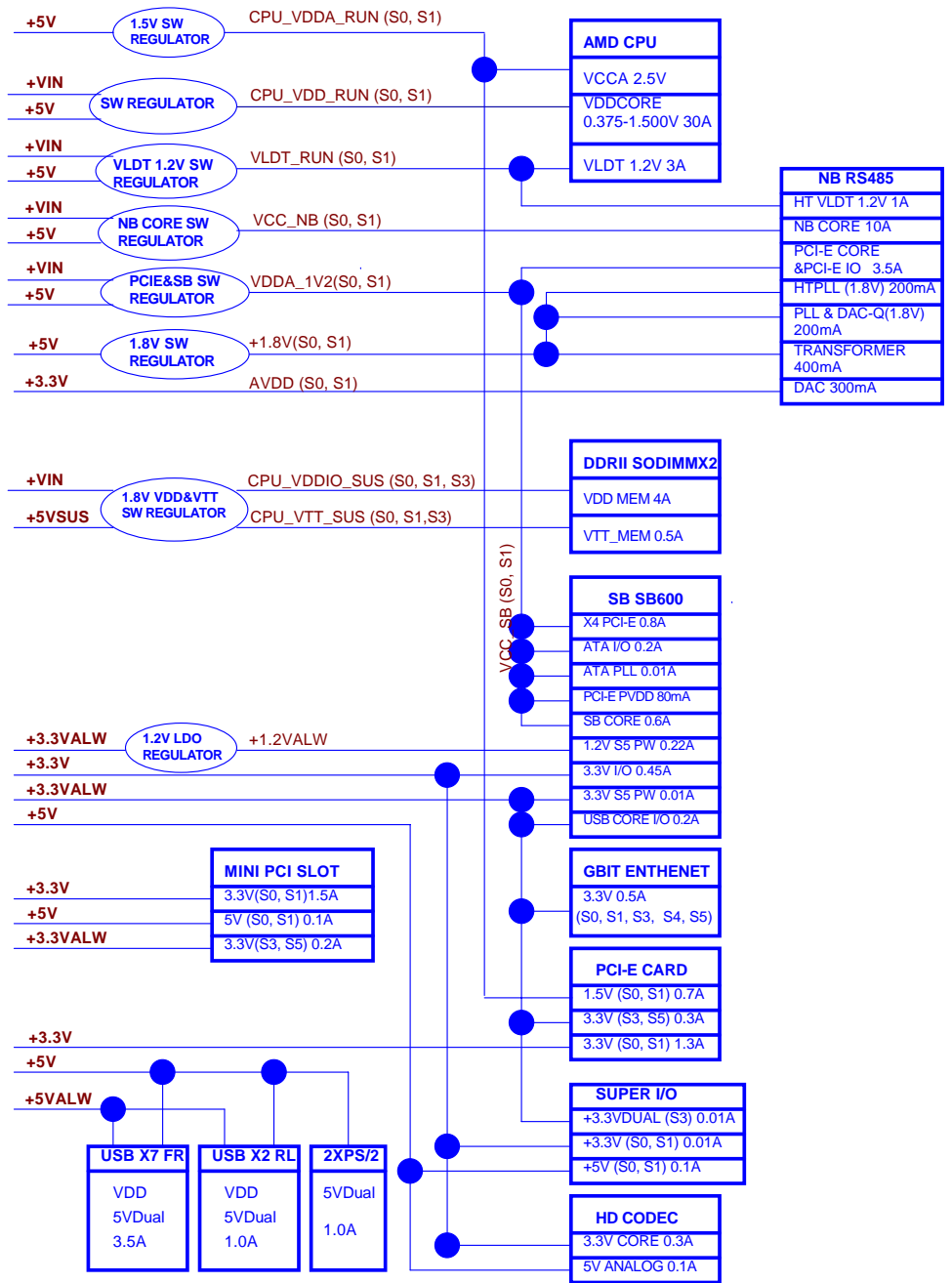


PCI Slot (per slot)	
5V	5.0A
3.3V	7.6A
12V	0.5A
3.3Vaux	0.375A
-12V	0.1A

X1 PCIE per	
3.3V	3.0A
12V	0.5A
3.3Vaux	0.1A

X16 PCIE	
3.3V	3.0A
12V	5.5A

CNR CONNECTOR	
5V	1.0A
3.3V	1.0A
12V	0.5A
3.3Vaux	1.0A
-12V	0.1A
5VDual	0.5A



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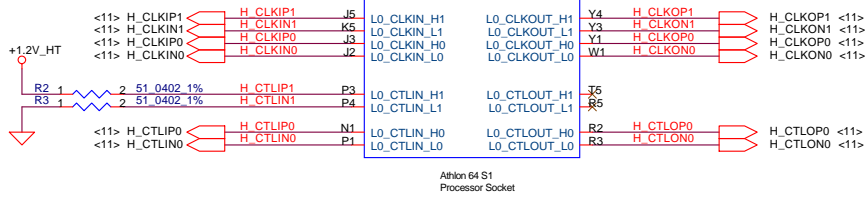
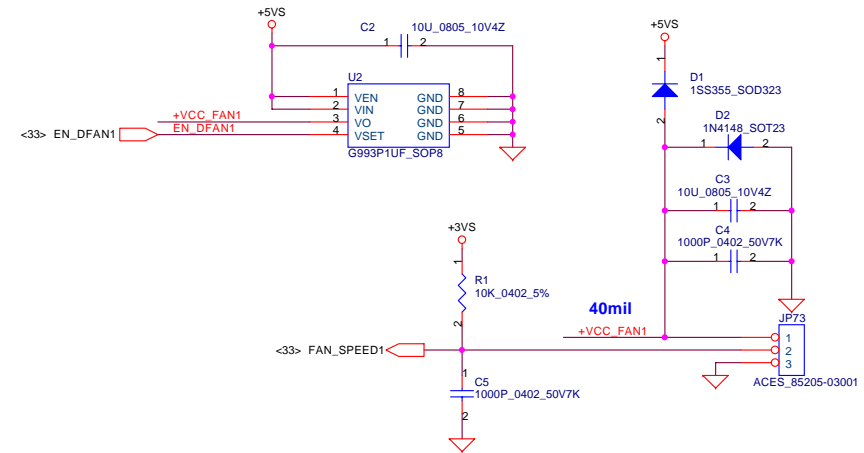
<11> H_CADIP[0..15] H_CADIP[0..15] <11>
 <11> H_CADIN[0..15] H_CADIN[0..15] <11>

PROCESSOR HYPERTRANSPORT INTERFACE

VLDLT_Ax AND VLDLT_Bx ARE CONNECTED TO THE LDT_RUN POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE



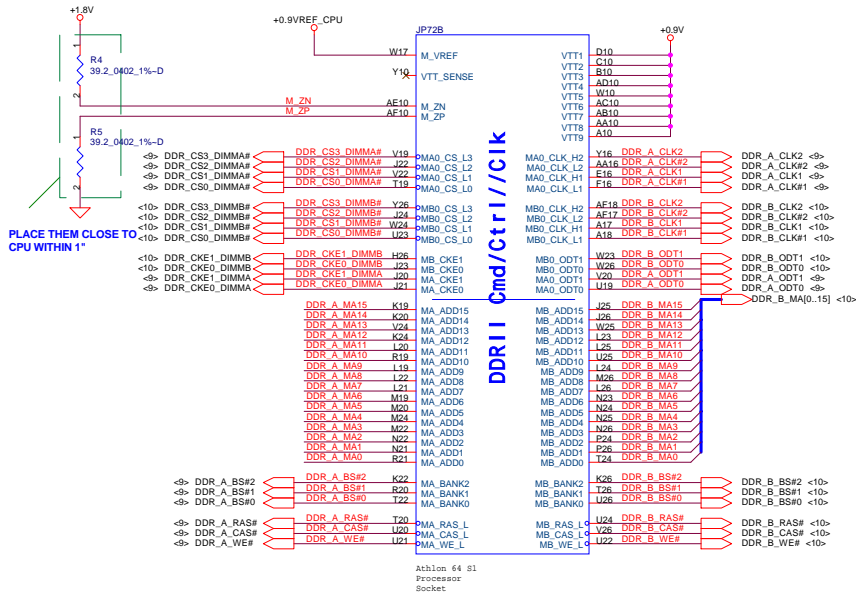
FAN1 Conn



LAYOUT: Place bypass cap on topside of board
 NEAR HT POWER PINS THAT ARE NOT CONNECTED DIRECTLY TO DOWNSTREAM HT DEVICE, BUT CONNECTED INTERNALLY TO OTHER HT POWER PINS
 PLACE CLOSE TO VLDLT0 POWER PINS

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VDD VTT SUS_CPU IS CONNECTED TO THE VDD VTT SUS_POWER SUPPLY THROUGH THE PACKAGE OR ON THE DIE. IT IS ONLY CONNECTED ON THE BOARD TO DECOUPLING NEAR THE CPU PACKAGE.

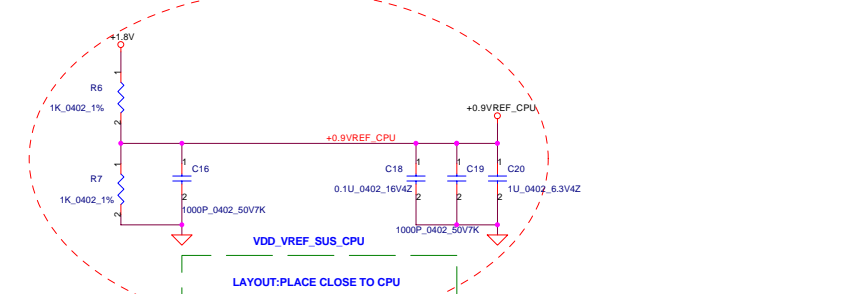


PLACE THEM CLOSE TO CPU WITHIN 1"

PLACE CLOSE TO PROCESSOR WITHIN 1.5 INCH

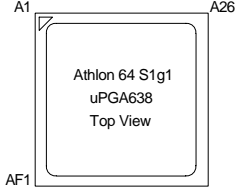
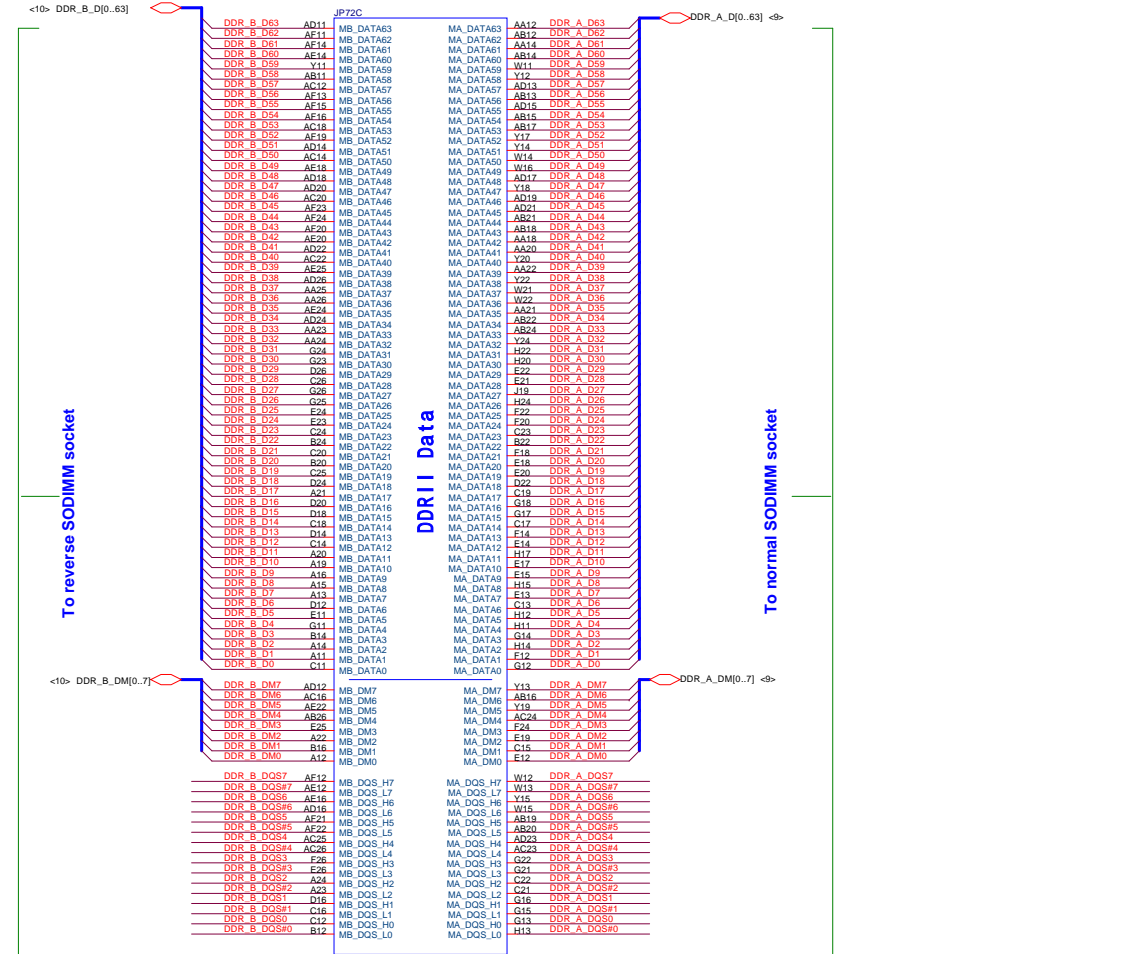
PLACE CLOSE TO PROCESSOR WITHIN 1.5 INCH

ATI check , Use +0.9V PWR , can delete or not



LAYOUT: PLACE CLOSE TO CPU

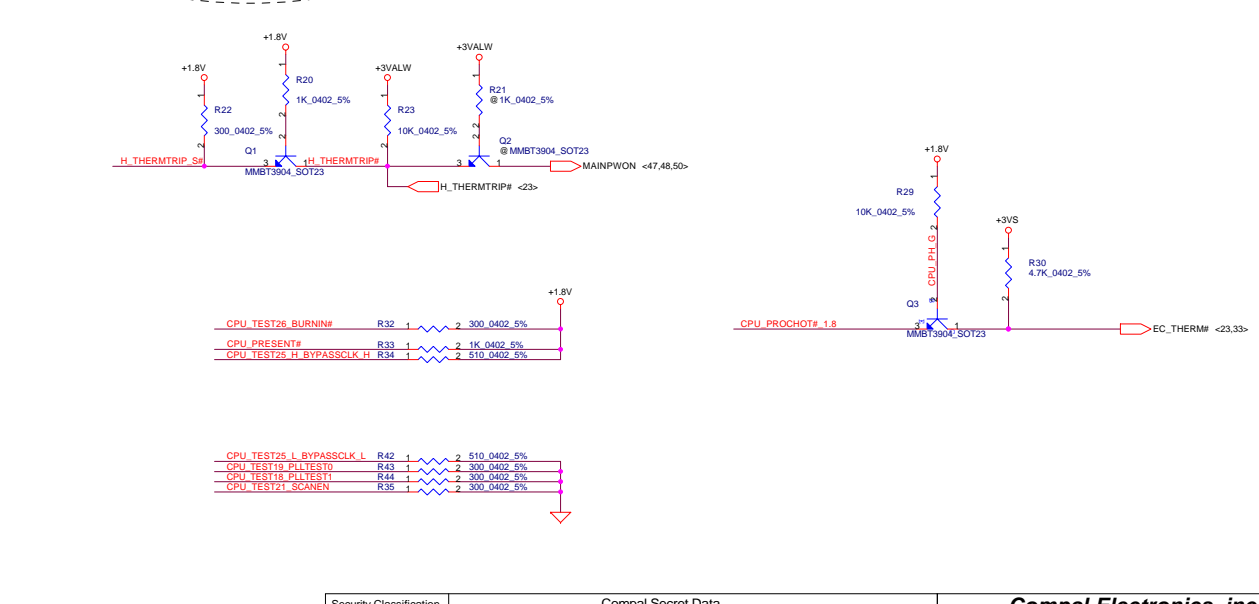
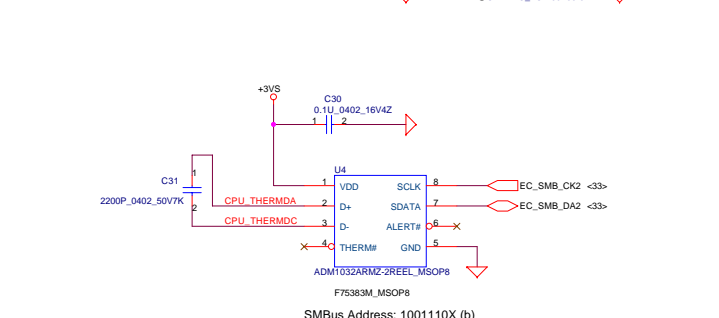
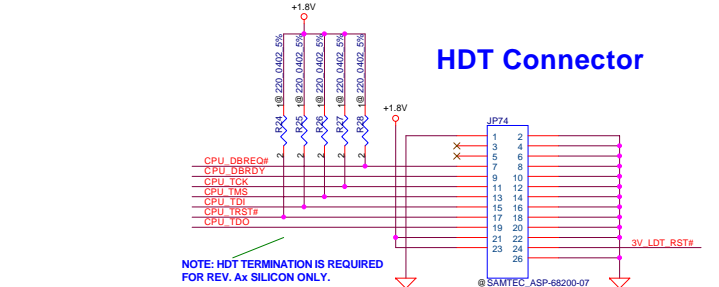
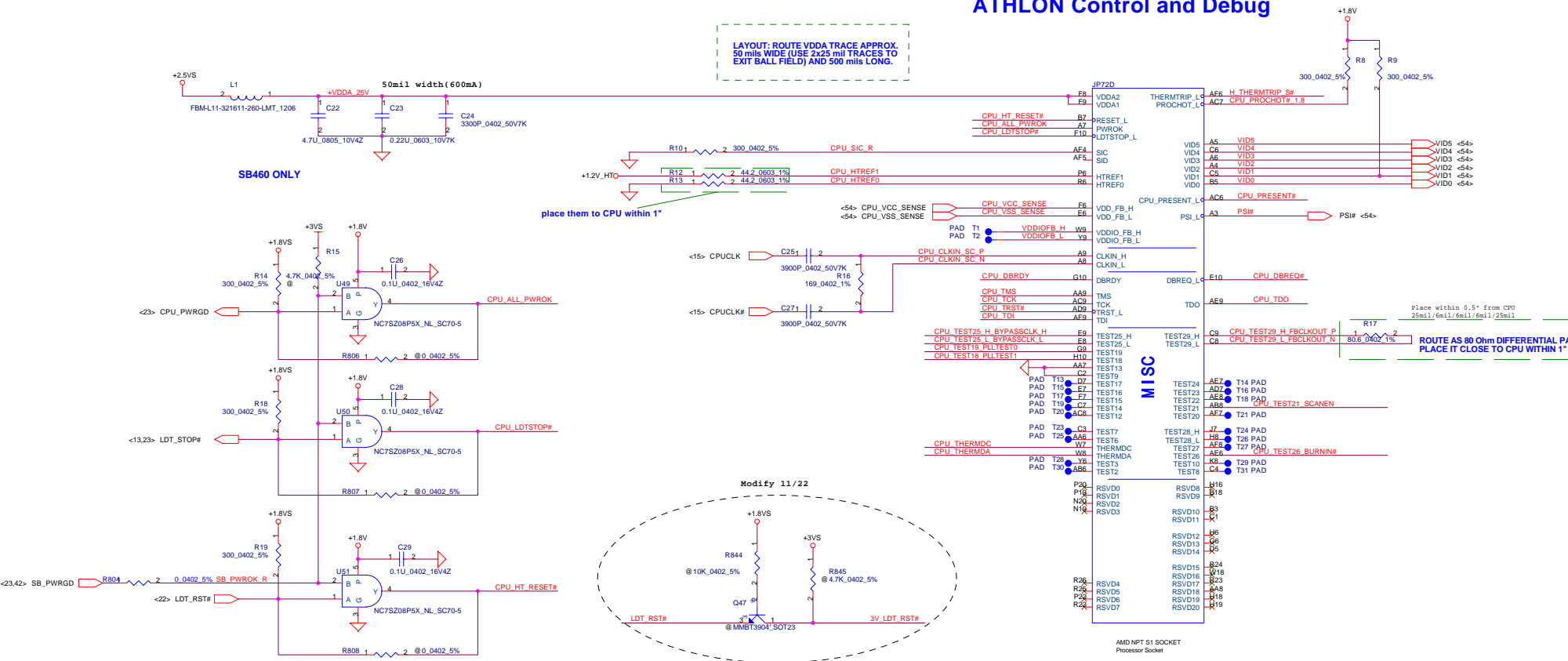
Processor DDR2 Memory Interface



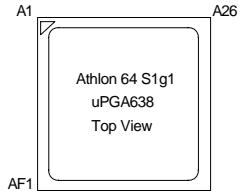
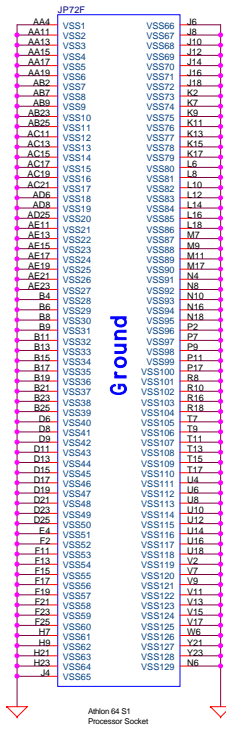
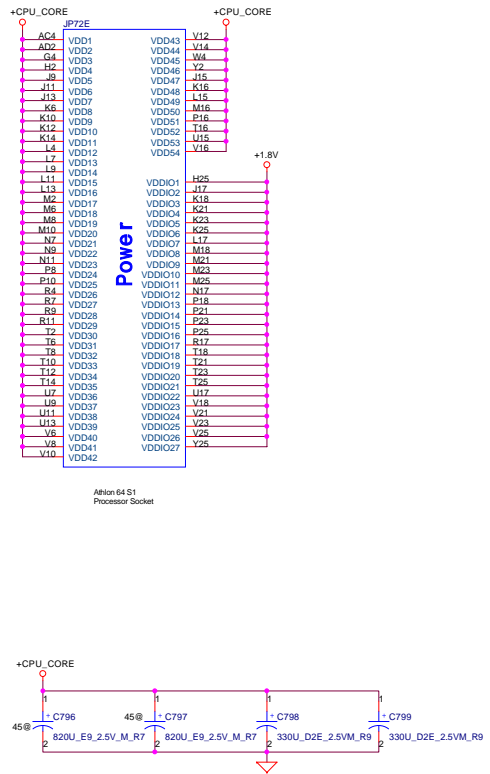
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ATHLON Control and Debug

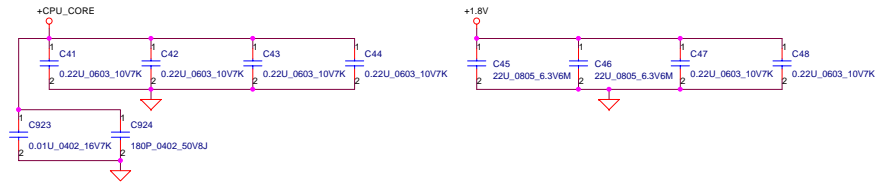
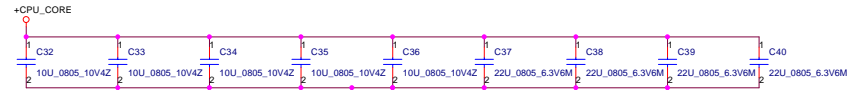
LAYOUT: ROUTE VDDA TRACE APPROX. 50 mils WIDE (USE 2x25 mil TRACES TO EXT BALL FIELD) AND 500 mils LONG.



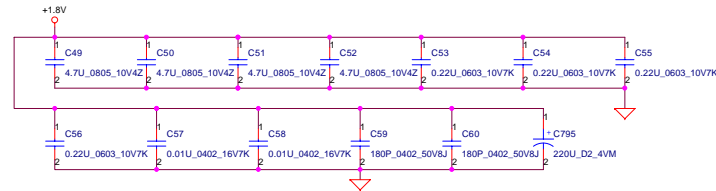
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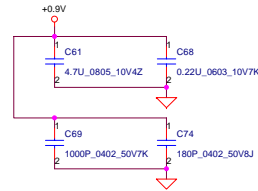
BOTTOMSIDE DECOUPLING



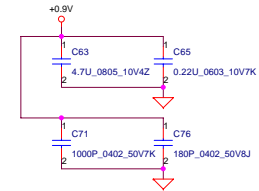
DECOUPLING BETWEEN PROCESSOR AND DIMMS PLACE CLOSE TO PROCESSOR AS POSSIBLE



CPU left-hand side

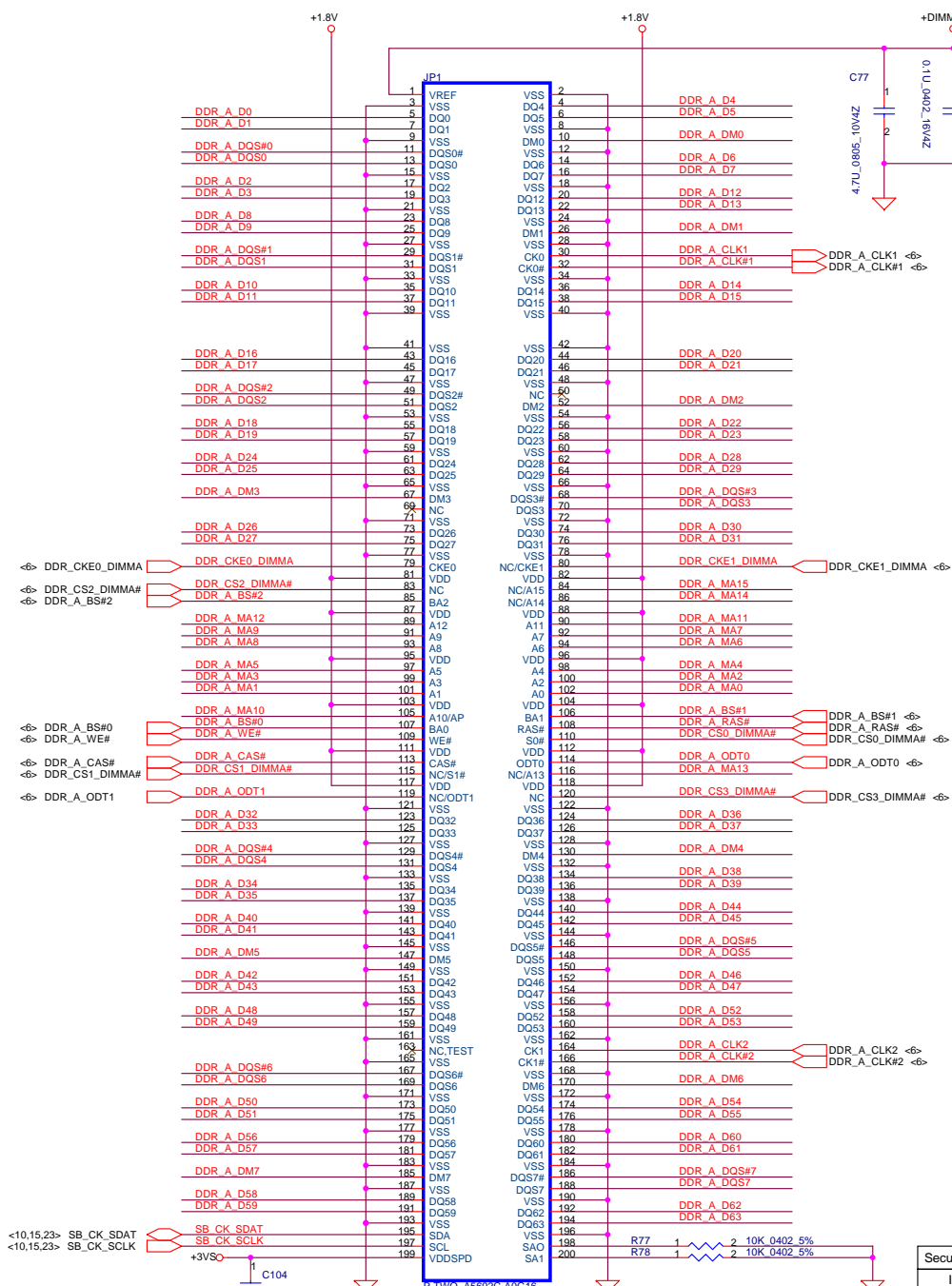


CPU right-hand side

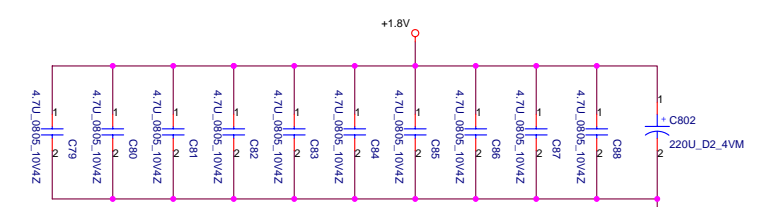


PROCESSOR POWER AND GROUND

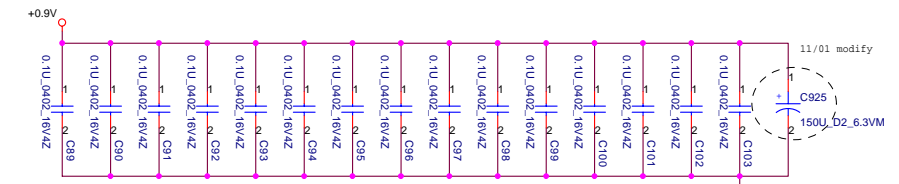
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- <-> DDR_A_D[0..63] DDR A D[0..63]
- <-> DDR_A_DM[0..7] DDR A DM[0..7]
- <-> DDR_A_DQS[0..7] DDR A DQS[0..7]
- <-> DDR_A_MA[0..15] DDR A MA[0..15]
- <-> DDR_A_DQS#[0..7] DDR A DQS#[0..7]

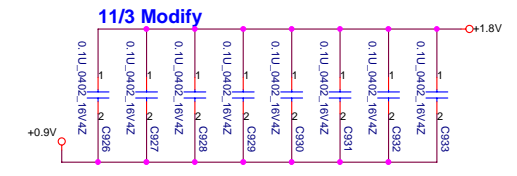


Layout Note:
Place one cap close to every 2 pullup resistors terminated to +0.9V

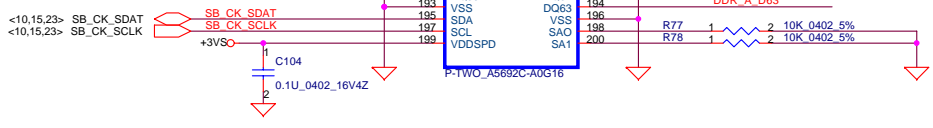


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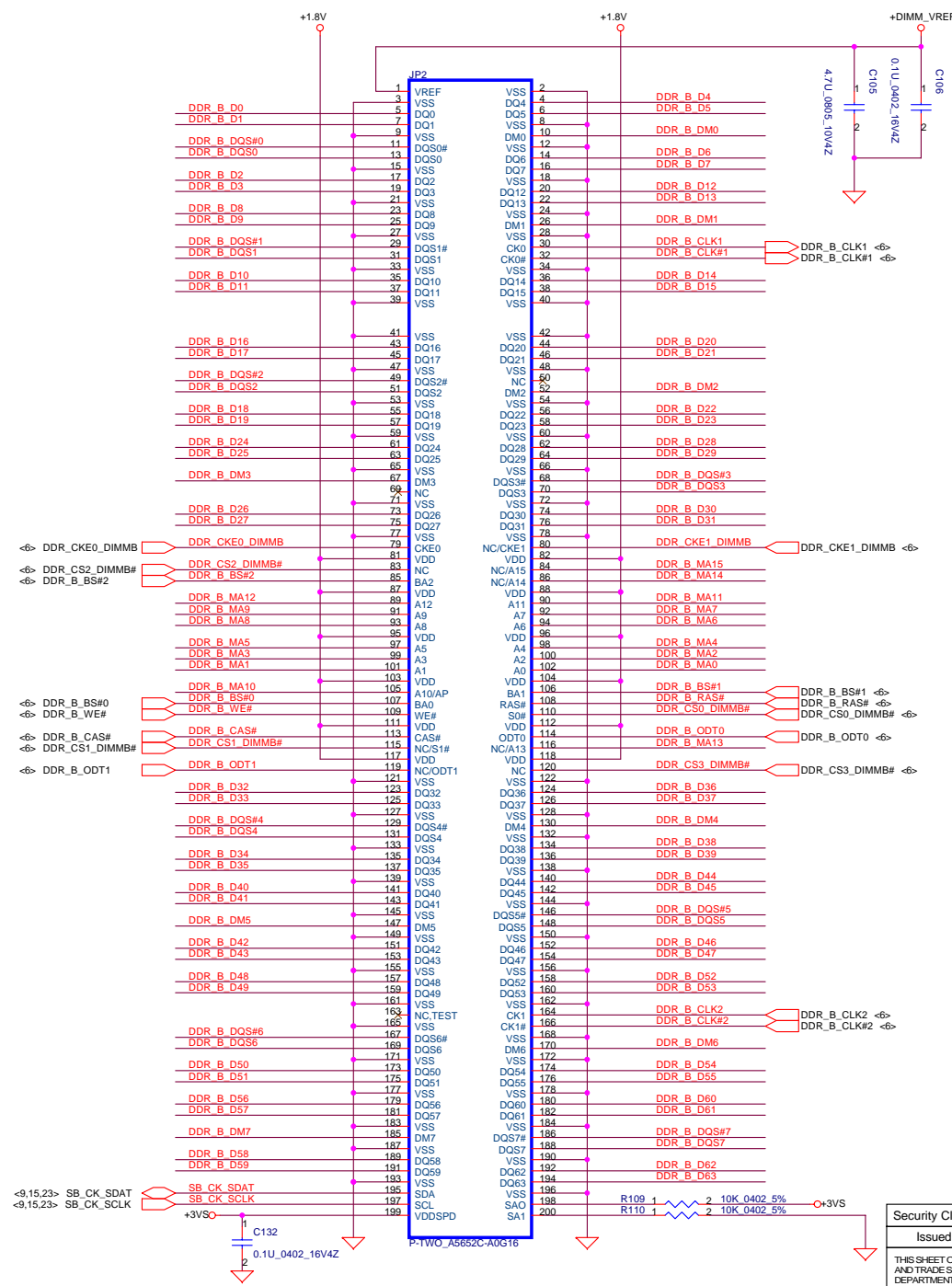
DDR_A_MA15	R47	1	2	47	0402	5%
DDR_A_MA14	R48	1	2	47	0402	5%
DDR_A_MA13	R49	1	2	47	0402	5%
DDR_A_MA12	R50	1	2	47	0402	5%
DDR_A_MA11	R51	1	2	47	0402	5%
DDR_A_MA10	R52	1	2	47	0402	5%
DDR_A_MA9	R53	1	2	47	0402	5%
DDR_A_MA8	R54	1	2	47	0402	5%
DDR_A_MA7	R55	1	2	47	0402	5%
DDR_A_MA6	R56	1	2	47	0402	5%
DDR_A_MA5	R57	1	2	47	0402	5%
DDR_A_MA4	R58	1	2	47	0402	5%
DDR_A_MA3	R59	1	2	47	0402	5%
DDR_A_MA2	R60	1	2	47	0402	5%
DDR_A_MA1	R61	1	2	47	0402	5%
DDR_A_MA0	R62	1	2	47	0402	5%
DDR_A_BS#2	R63	1	2	47	0402	5%
DDR_A_BS#1	R64	1	2	47	0402	5%
DDR_A_BS#0	R65	1	2	47	0402	5%
DDR_A_CAS#	R66	1	2	47	0402	5%
DDR_A_WE#	R67	1	2	47	0402	5%
DDR_A_RAS#	R68	1	2	47	0402	5%
DDR_CKE1_DIMMA	R69	1	2	47	0402	5%
DDR_CKE0_DIMMA	R70	1	2	47	0402	5%
DDR_CS3_DIMMA#	R71	1	2	47	0402	5%
DDR_CS2_DIMMA#	R72	1	2	47	0402	5%
DDR_CS1_DIMMA#	R73	1	2	47	0402	5%
DDR_CS0_DIMMA#	R74	1	2	47	0402	5%
DDR_A_ODT1	R75	1	2	47	0402	5%
DDR_A_ODT0	R76	1	2	47	0402	5%



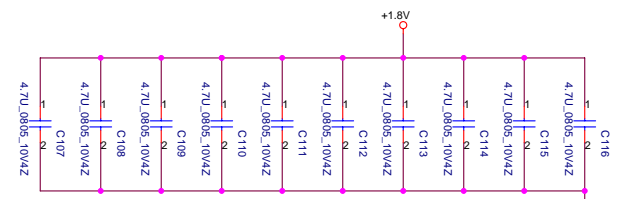
Layout Note:
Place one 0.1uF cap close to every 2 pullup resistors terminated to +0.9V



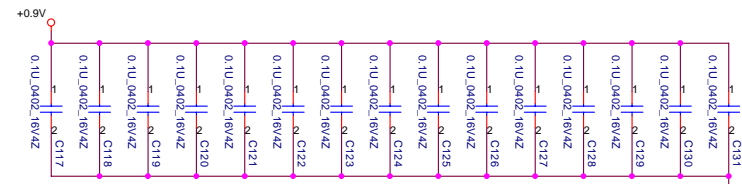
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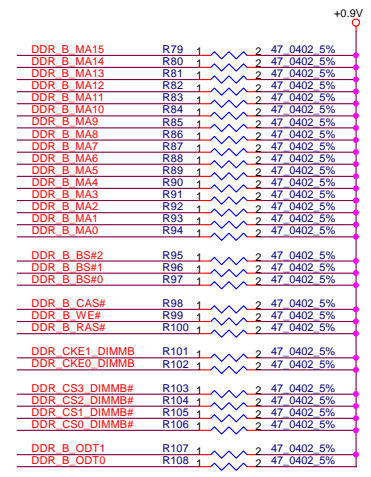
- << DDR_B_D[0..63] ⇨ DDR_B_D[0..63]
- << DDR_B_DM[0..7] ⇨ DDR_B_DM[0..7]
- << DDR_B_DQS[0..7] ⇨ DDR_B_DQS[0..7]
- << DDR_B_MA[0..15] ⇨ DDR_B_MA[0..15]
- << DDR_B_DQS#[0..7] ⇨ DDR_B_DQS#[0..7]



Layout Note:
Place one cap close to every 2 pullup resistors terminated to +0.9V



Layout Note:
Place one cap close to every 2 pullup resistors terminated to +0.9V

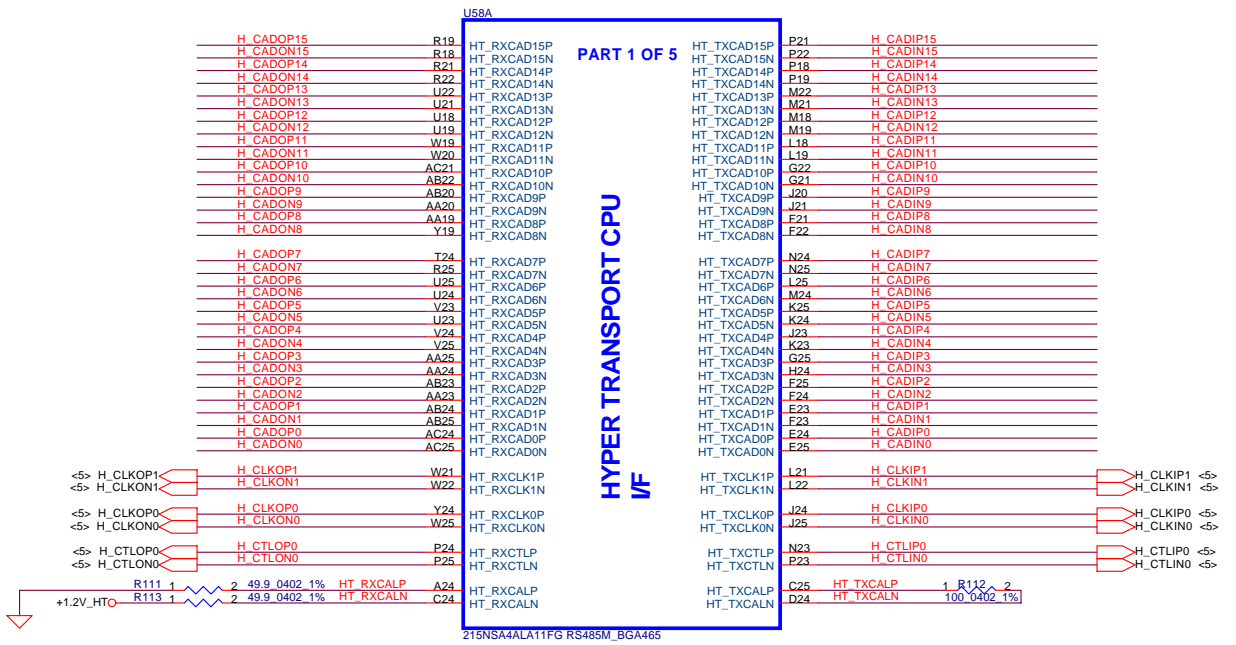
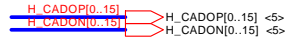


11/3 Modify

Layout Note:
Place one 0.1uF cap close to every 2 pullup resistors terminated to +0.9V

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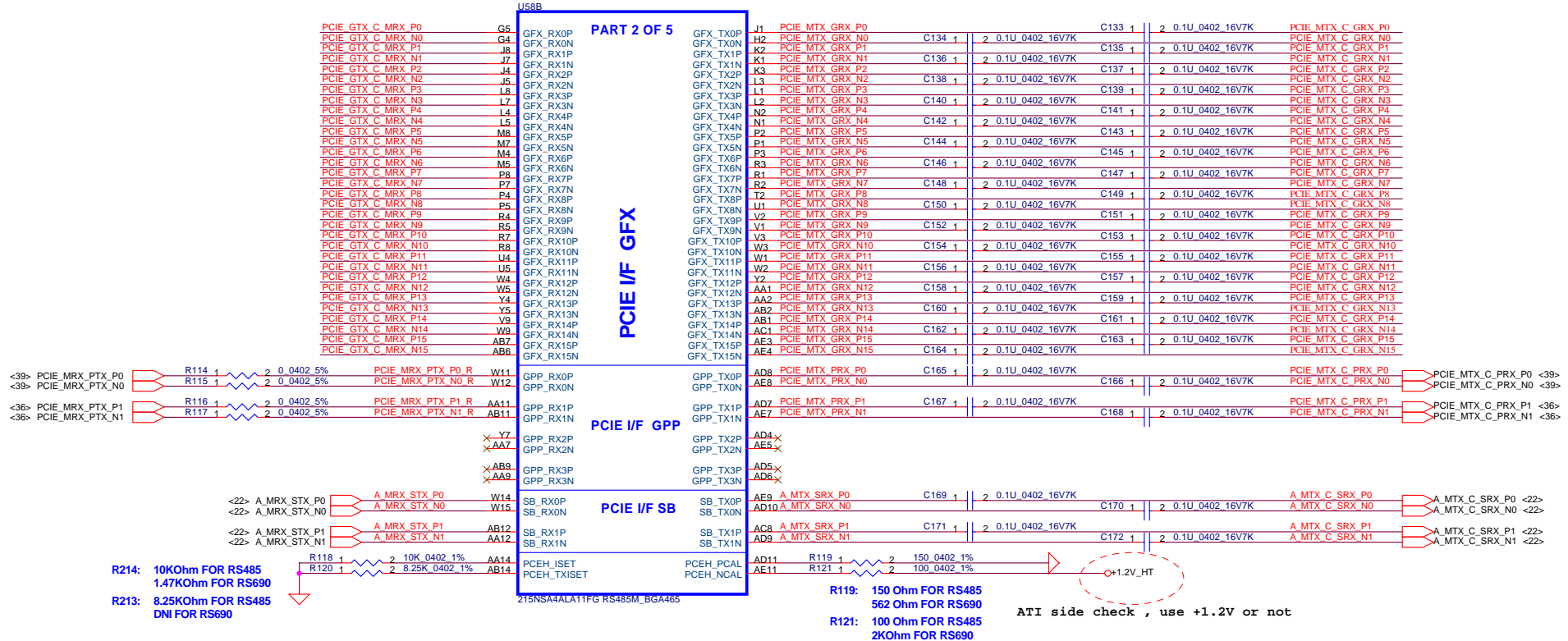
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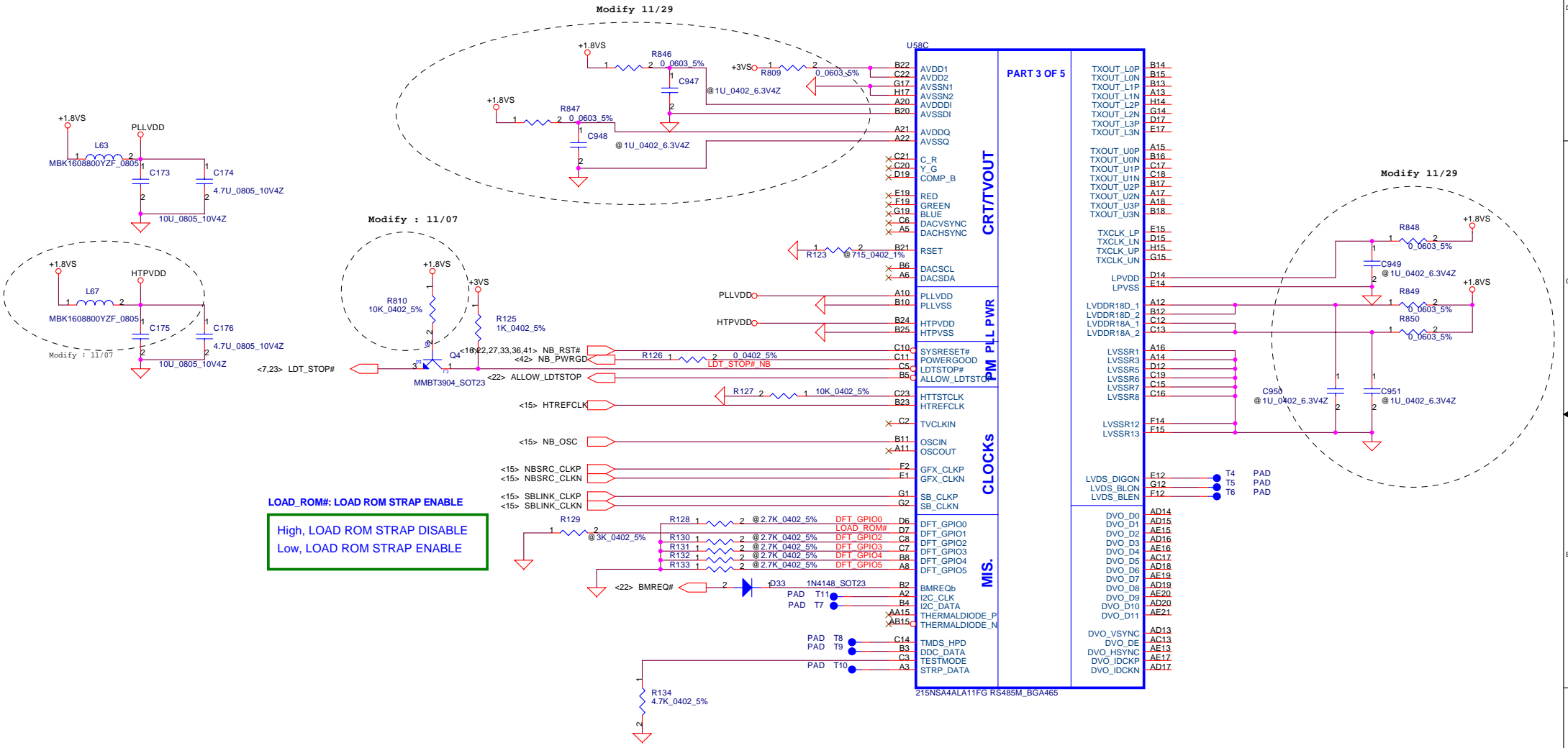
<16> PCIE_GTX_C_MRX_P[0..15] PCIE GTX C MRX P[0..15]
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<16> PCIE_MTX_C_GRX_P[0..15] PCIE MTX C GRX P[0..15]
 <16> PCIE_MTX_C_GRX_N[0..15] PCIE MTX C GRX N[0..15]



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ATI check , CRT / TV/ LVDS can delete or not when I use RX485

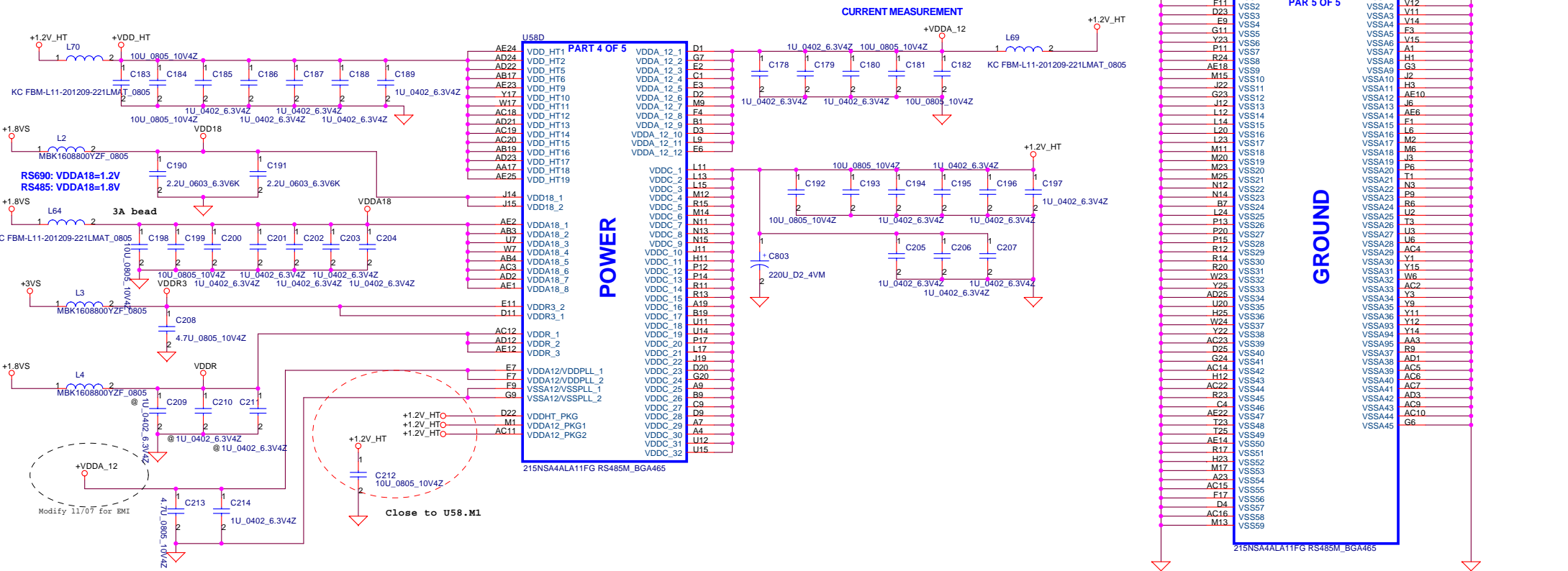


LOAD_ROM#: LOAD ROM STRAP ENABLE
 High, LOAD ROM STRAP DISABLE
 Low, LOAD ROM STRAP ENABLE

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NB RS485 POWER STATES

Power Signal	S0	S1	S3	S4/S5	G3
VDDHT	ON	ON	OFF	OFF	OFF
VDDR	ON	ON	OFF	OFF	OFF
VDD18	ON	ON	OFF	OFF	OFF
VDDC	ON	ON	OFF	OFF	OFF
VDDA18	ON	ON	OFF	OFF	OFF
VDDA12	ON	ON	OFF	OFF	OFF
AVDD	ON	ON	OFF	OFF	OFF
AVDDDI	ON	ON	OFF	OFF	OFF
PLLVDD	ON	ON	OFF	OFF	OFF
HTPVDD	ON	ON	OFF	OFF	OFF
VDDR3	ON	ON	OFF	OFF	OFF
LPVDD	ON	ON	OFF	OFF	OFF
LVDDR18D	ON	ON	OFF	OFF	OFF
LVDDR18A	ON	ON	OFF	OFF	OFF



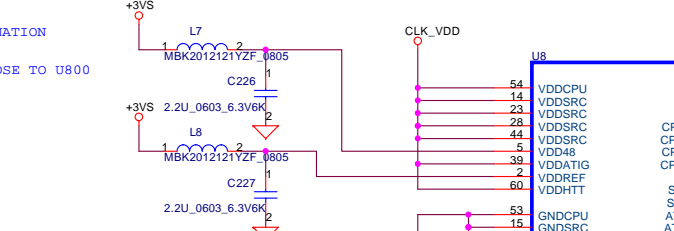
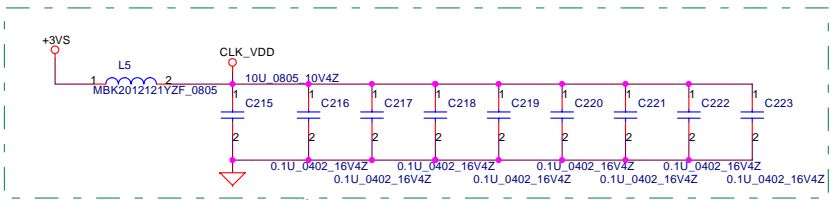
RS485: 0 Ohm RESISTOR
RS690: 220 Ohm 500mA FERRITE BEAD

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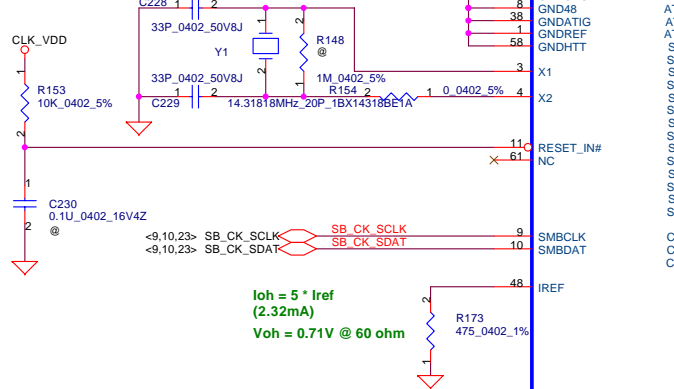
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- 1- PLACE ALL SERIAL TERMINATION RESISTORS CLOSE TO U800
- 2- PUT DECOUPLING CAPS CLOSE TO U800 POWER PIN

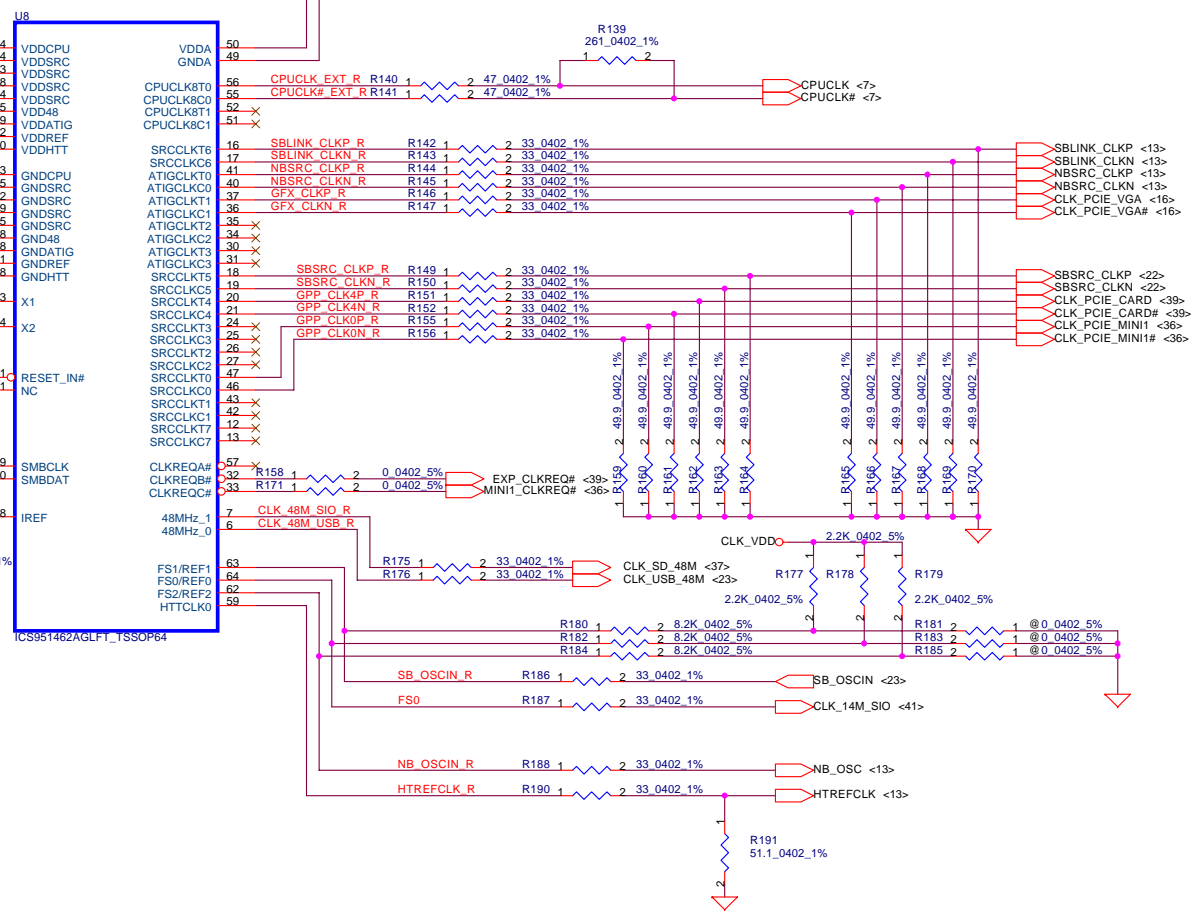


Parallel Resonance Crystal



$I_{oh} = 5 * I_{ref}$
(2.32mA)
 $V_{oh} = 0.71V @ 60 ohm$

<36,39> ICH_SMBDATA ICH_SMBDATA R192 1 2 0.0402 5% SB_CK_SDAT
<36,39> ICH_SMBCLK ICH_SMBCLK R193 1 2 0.0402 5% SB_CK_SCLK



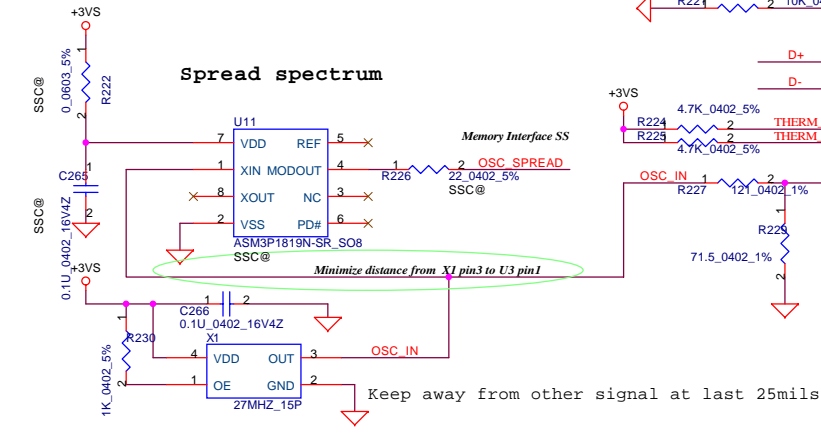
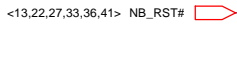
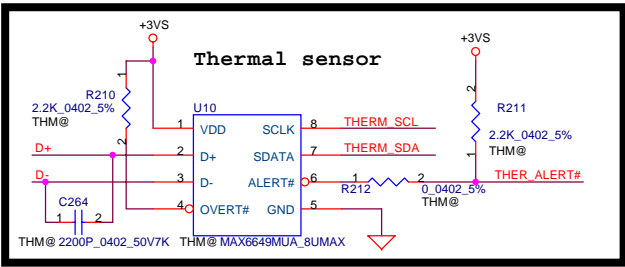
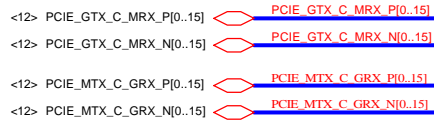
EXT CLK FREQUENCY SELECT TABLE(MHZ)

FS2	FS1	FS0	CPU	SRCCLK [2:1]	HIT	PCI	USB	COMMENT
0	0	0	Hi-Z	100.00	Hi-Z	Hi-Z	48.00	Reserved
0	0	1	X	100.00	X/3	X/6	48.00	Reserved
0	1	0	180.00	100.00	60.00	30.00	48.00	Reserved
0	1	1	220.00	100.00	36.56	73.12	48.00	Reserved
1	0	0	100.00	100.00	66.66	33.33	48.00	Reserved
1	0	1	133.33	100.00	66.66	33.33	48.00	Reserved
1	1	1	200.00	100.00	66.66	33.33	48.00	Normal ATHLON64 operation

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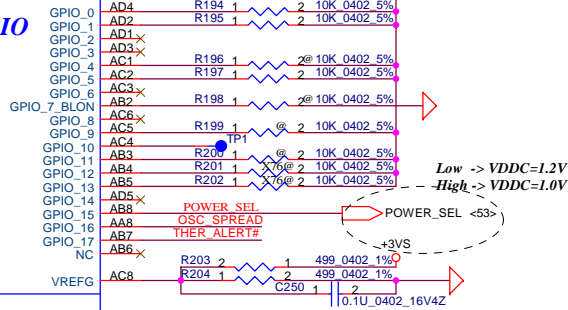
PCIe Lane Reversal

Pin	Label	Value	Pin	Label	Value
<15>	CLK_PCIE_VGA#		AL28	CLK_PCIE_VGA	
<15>	CLK_PCIE_VGA#		AK28	CLK_PCIE_VGA#	
PCIE GTX C MRX N15	C234	2 0.1U 0402 16V7K	PCIE GTX MRX N15	AK27	
PCIE GTX C MRX P15	C234	2 0.1U 0402 16V7K	PCIE GTX MRX P15	AK27	
PCIE GTX C MRX N14	C234	2 0.1U 0402 16V7K	PCIE GTX MRX N14	AJ27	
PCIE GTX C MRX P14	C234	2 0.1U 0402 16V7K	PCIE GTX MRX P14	AH25	
PCIE GTX C MRX N13	C234	2 0.1U 0402 16V7K	PCIE GTX MRX N13	AH28	
PCIE GTX C MRX P13	C234	2 0.1U 0402 16V7K	PCIE GTX MRX P13	AG28	
PCIE GTX C MRX N12	C238	2 0.1U 0402 16V7K	PCIE GTX MRX N12	AG27	
PCIE GTX C MRX P12	C238	2 0.1U 0402 16V7K	PCIE GTX MRX P12	AF27	
PCIE GTX C MRX N11	C249	2 0.1U 0402 16V7K	PCIE GTX MRX N11	AE25	
PCIE GTX C MRX P11	C249	2 0.1U 0402 16V7K	PCIE GTX MRX P11	AE25	
PCIE GTX C MRX N10	C244	2 0.1U 0402 16V7K	PCIE GTX MRX N10	AE28	
PCIE GTX C MRX P10	C244	2 0.1U 0402 16V7K	PCIE GTX MRX P10	AD28	
PCIE GTX C MRX N9	C244	2 0.1U 0402 16V7K	PCIE GTX MRX N9	AD27	
PCIE GTX C MRX P9	C244	2 0.1U 0402 16V7K	PCIE GTX MRX P9	AC27	
PCIE GTX C MRX N8	C248	2 0.1U 0402 16V7K	PCIE GTX MRX N8	AC25	
PCIE GTX C MRX P8	C248	2 0.1U 0402 16V7K	PCIE GTX MRX P8	AB25	
PCIE GTX C MRX N7	C248	2 0.1U 0402 16V7K	PCIE GTX MRX N7	AB28	
PCIE GTX C MRX P7	C247	2 0.1U 0402 16V7K	PCIE GTX MRX P7	AA28	
PCIE GTX C MRX N6	C251	2 0.1U 0402 16V7K	PCIE GTX MRX N6	AA27	
PCIE GTX C MRX P6	C249	2 0.1U 0402 16V7K	PCIE GTX MRX P6	Y27	
PCIE GTX C MRX N5	C253	2 0.1U 0402 16V7K	PCIE GTX MRX N5	Y25	
PCIE GTX C MRX P5	C253	2 0.1U 0402 16V7K	PCIE GTX MRX P5	W25	
PCIE GTX C MRX N4	C255	2 0.1U 0402 16V7K	PCIE GTX MRX N4	W28	
PCIE GTX C MRX P4	C254	2 0.1U 0402 16V7K	PCIE GTX MRX P4	V28	
PCIE GTX C MRX N3	C257	2 0.1U 0402 16V7K	PCIE GTX MRX N3	V27	
PCIE GTX C MRX P3	C256	2 0.1U 0402 16V7K	PCIE GTX MRX P3	U27	
PCIE GTX C MRX N2	C259	2 0.1U 0402 16V7K	PCIE GTX MRX N2	U25	
PCIE GTX C MRX P2	C259	2 0.1U 0402 16V7K	PCIE GTX MRX P2	T25	
PCIE GTX C MRX N1	C261	2 0.1U 0402 16V7K	PCIE GTX MRX N1	T28	
PCIE GTX C MRX P1	C261	2 0.1U 0402 16V7K	PCIE GTX MRX P1	R28	
PCIE GTX C MRX N0	C263	2 0.1U 0402 16V7K	PCIE GTX MRX N0	R27	
PCIE GTX C MRX P0	C264	2 0.1U 0402 16V7K	PCIE GTX MRX P0	P27	

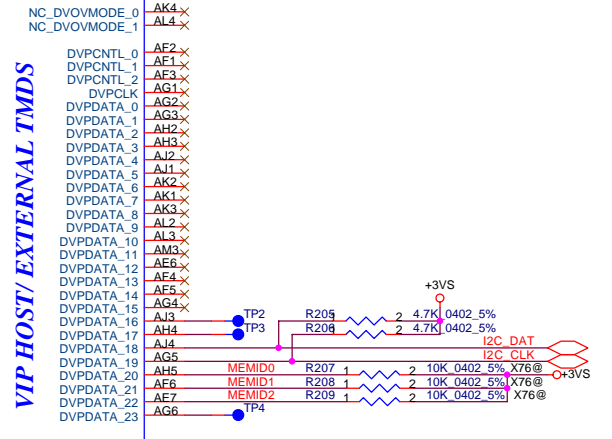


U9A

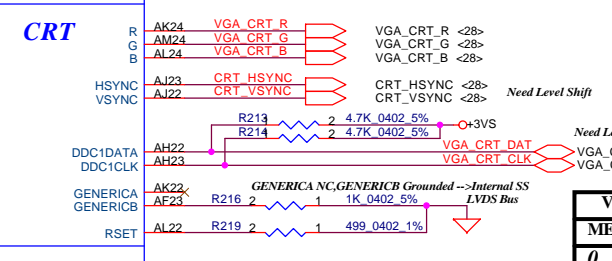
GPIO



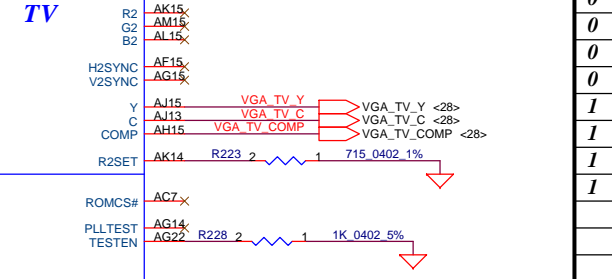
PCI EXPRESS



CRT



TV



THERMAL



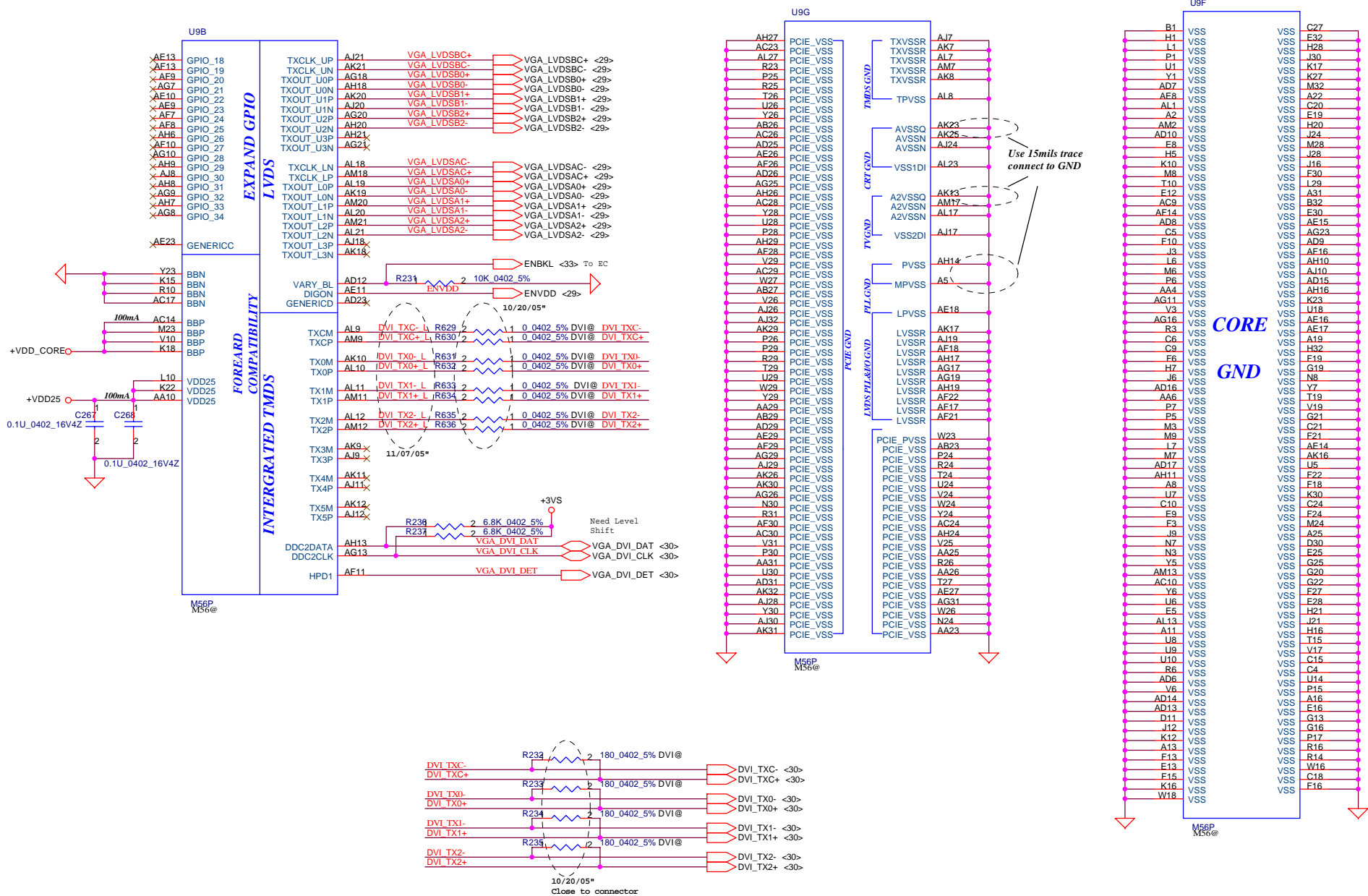
Straps: (Internal pull down)	
Transmitter power saving enable	GPIO[0] 0: 50% TX output swing 1: Full TX output swing
Transmitter de-emphasis enable	GPIO[1] 0: TX de-emphasis disable 1: TX de-emphasis enable
Debug Access	GPIO[4] 0: OFF Pad must be available 1: ON
PLL_IBIAS_RD	GPIO[6,5] Default: 01
ROM ID Config	GPIO[9, 13:11] 000X: No ROM, AP_SIZE=00 128M share 001X: No ROMMemory AP_SIZE=01 256M share 010X: No ROMMemory AP_SIZE=10 64M share 011X: No ROMMemory AP_SIZE=11 Reserved

Vedio Memory Config. (VGA Internal PD)						
MEMID[2:0]	Size	Size	Vender	Chips	VGA	Frequency
0 0 0	64MB	16M16	Hynix	2		
0 0 1	64MB	16M16	Samsung	2		
0 1 0	128MB	16M16	Hynix	4		A-test
0 1 1	128MB	16M16	Samsung	4		A-test
1 0 0	256MB	32M16	Hynix	4		A-test
1 0 1	256MB	32M16	Samsung	4		A-test
1 1 0			Reserved			
1 1 1			Reserved			

TBD

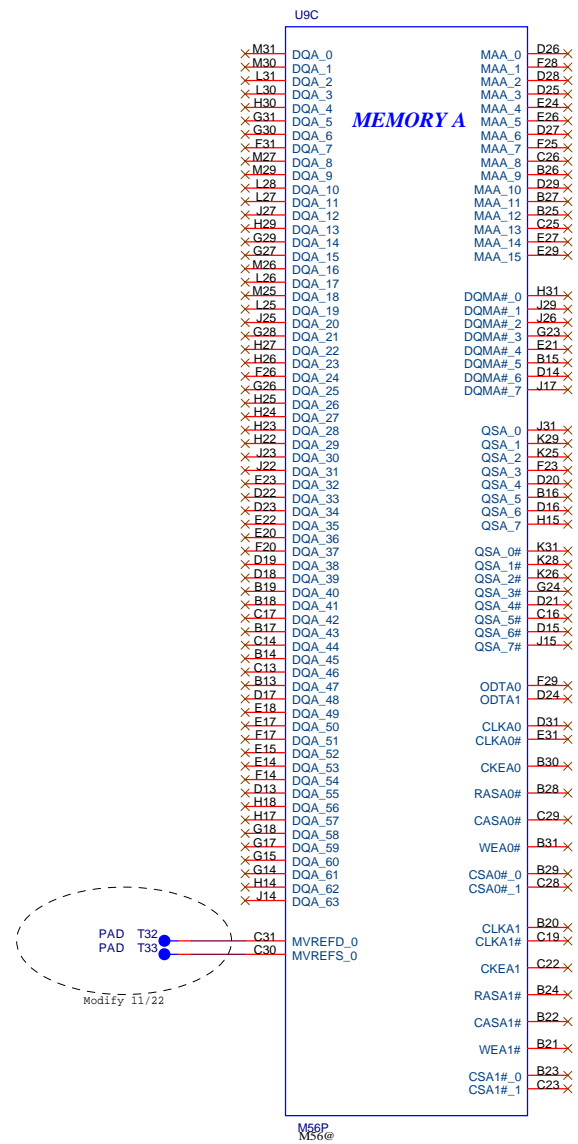
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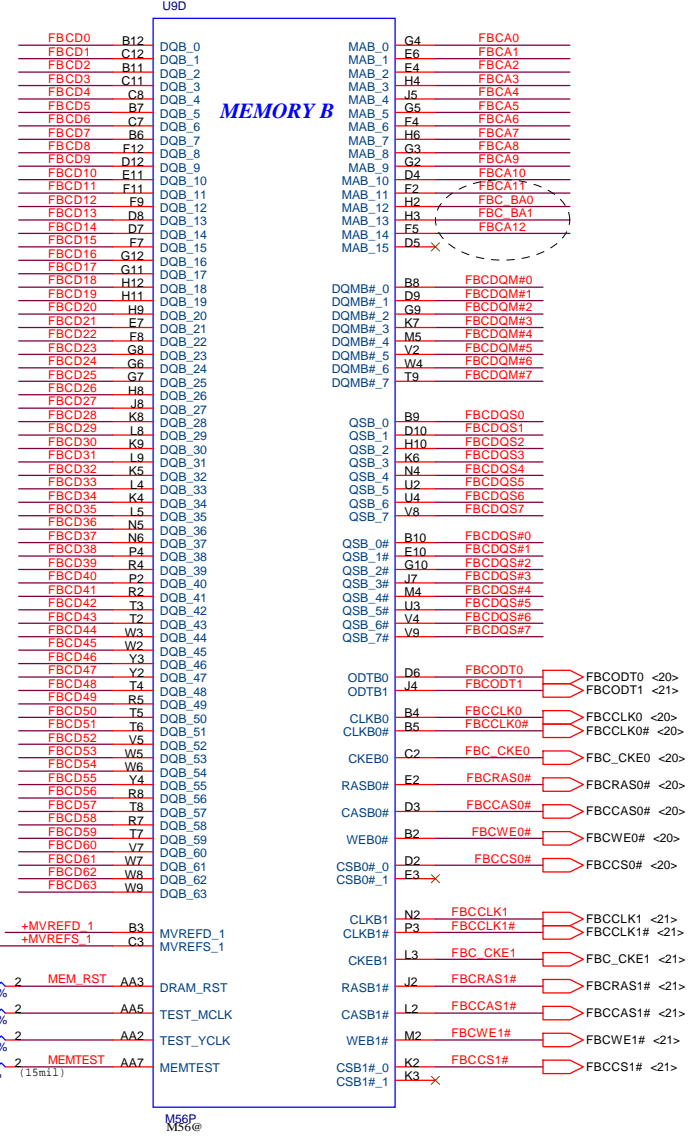
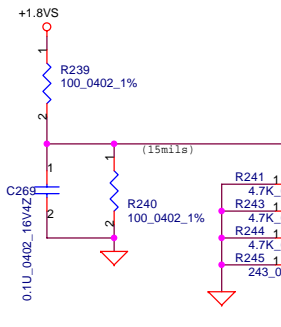
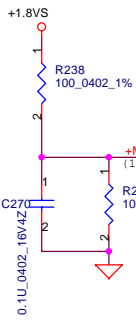
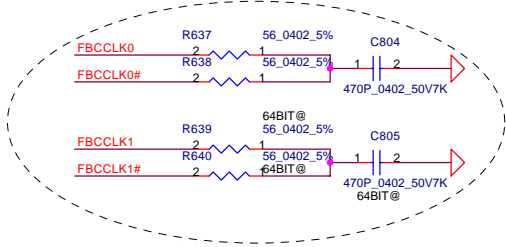
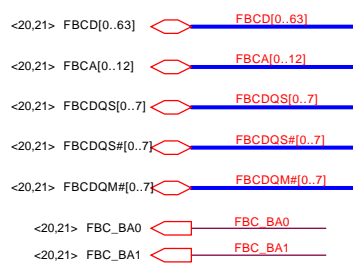


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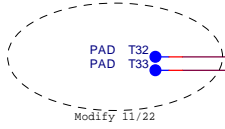
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MEMORY A

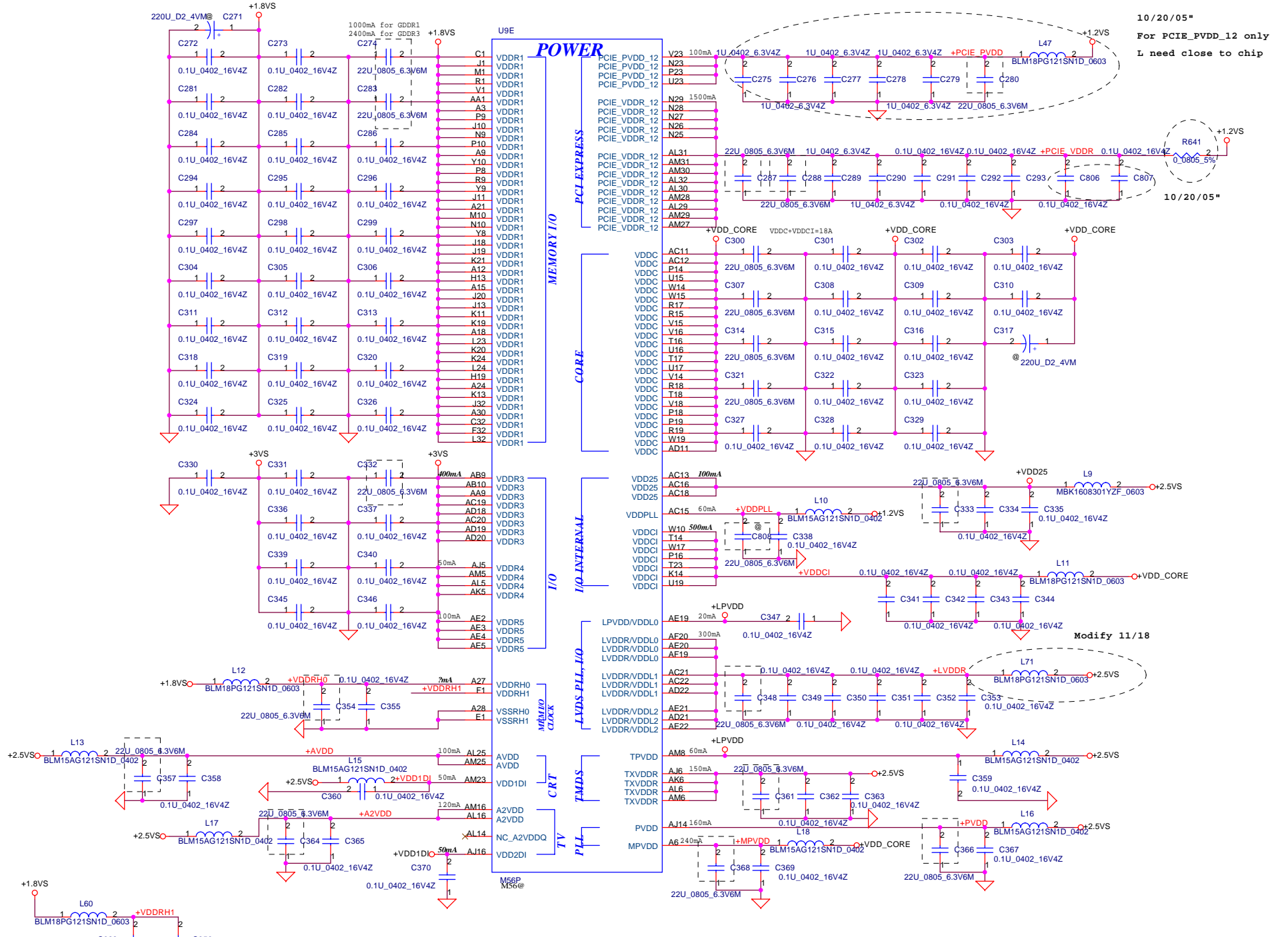


MEMORY B



GDDR2

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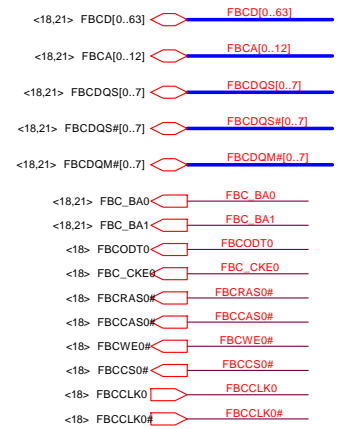
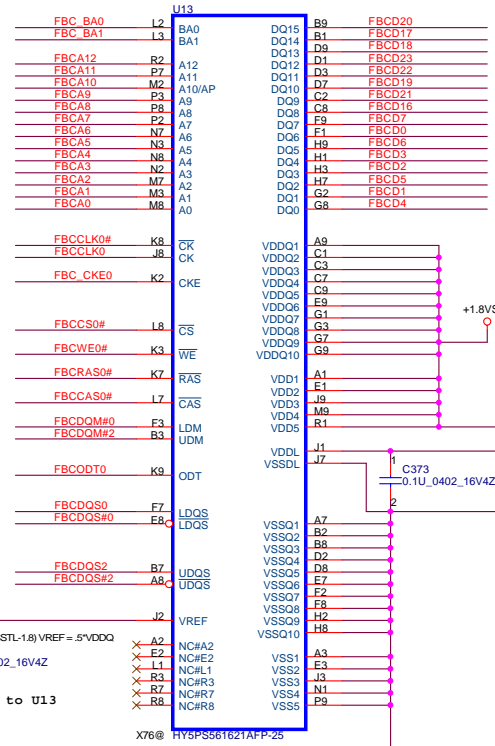
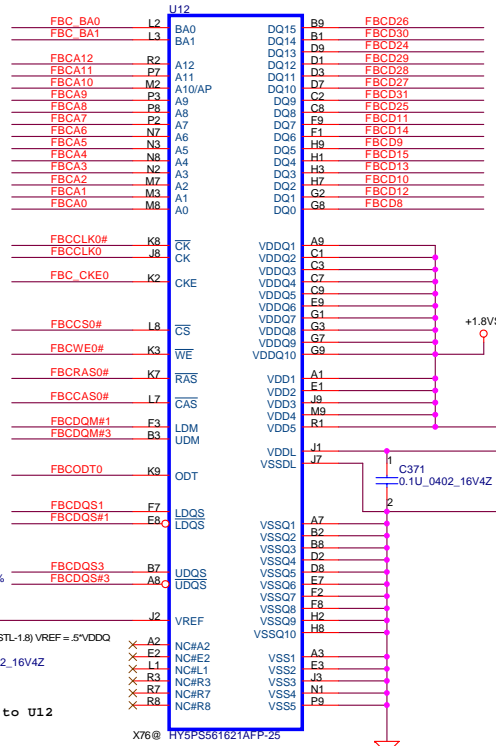
10/20/05"
 For PCIE_PVDD_12 only
 L need close to chip

10/20/05"

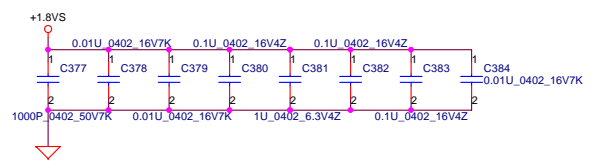
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11/03/05' SWAP NET
 11/04/05' SWAP NET
 11/08/05' SWAP NET

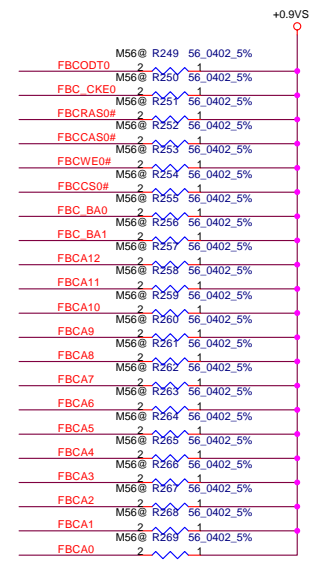
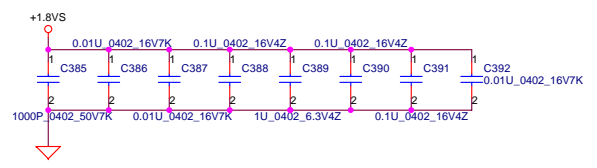
11/03/05' SWAP NET



DDR2 BGA MEMORY

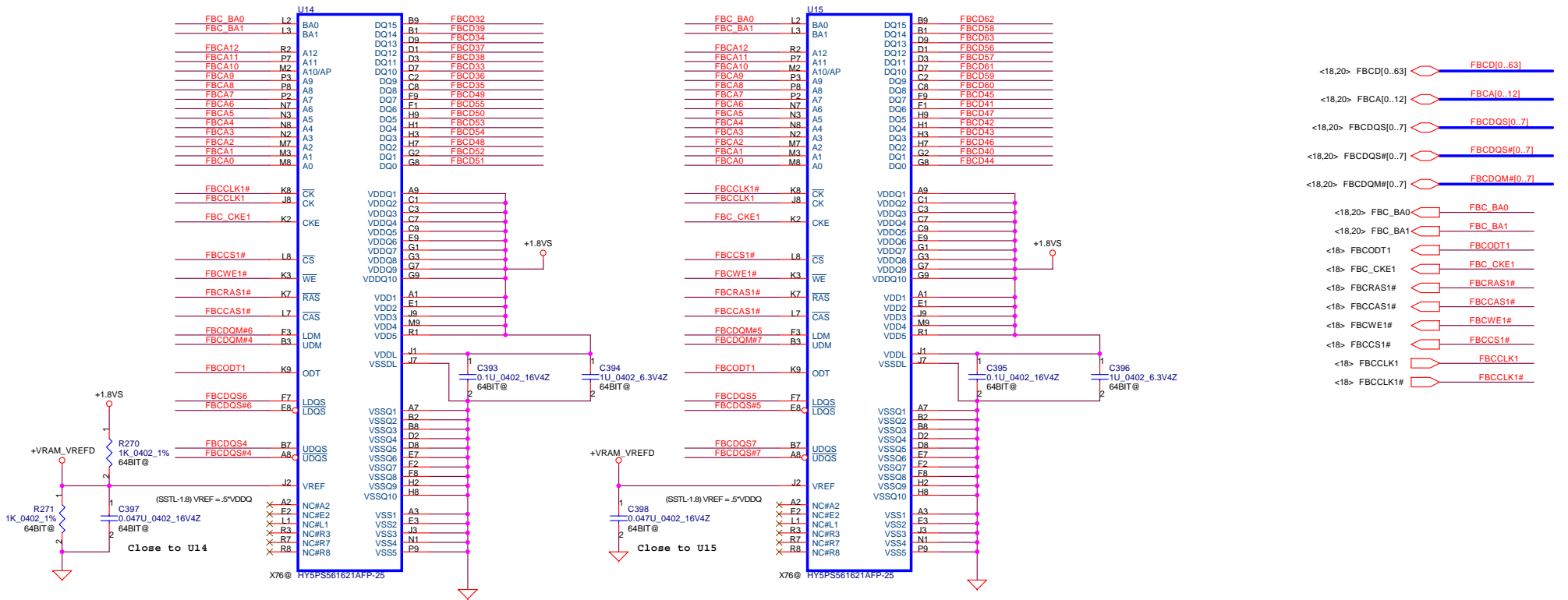


DDR2 BGA MEMORY



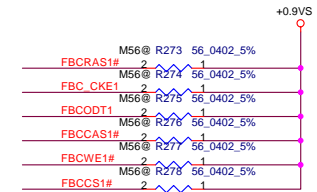
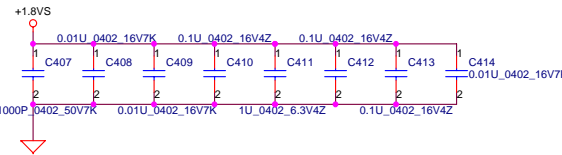
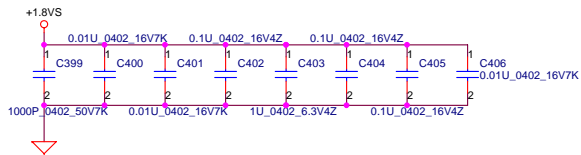
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DDR2 BGA MEMORY

DDR2 BGA MEMORY



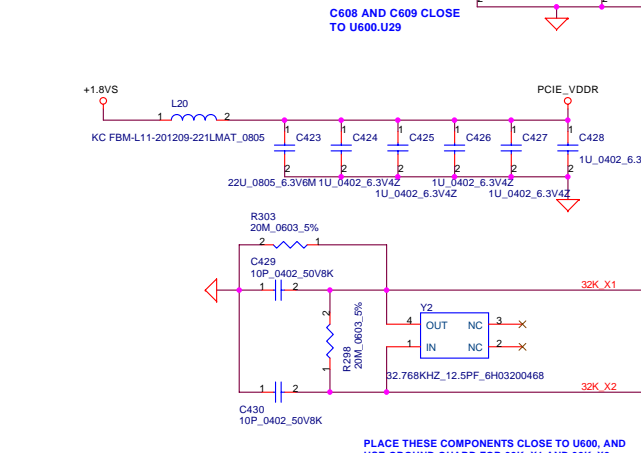
M56 Only

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					Rev B

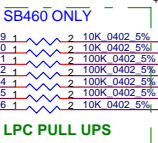
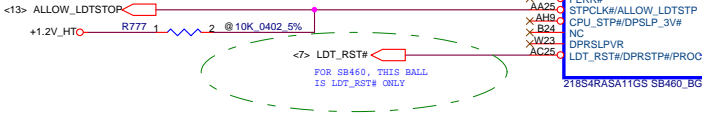
PLACE THESE PCIE AC COUPLING CAPS CLOSE TO U600

FOR SB600 VCC_SB= 1.2V
FOR SB460 VCC_SB= 1.8V

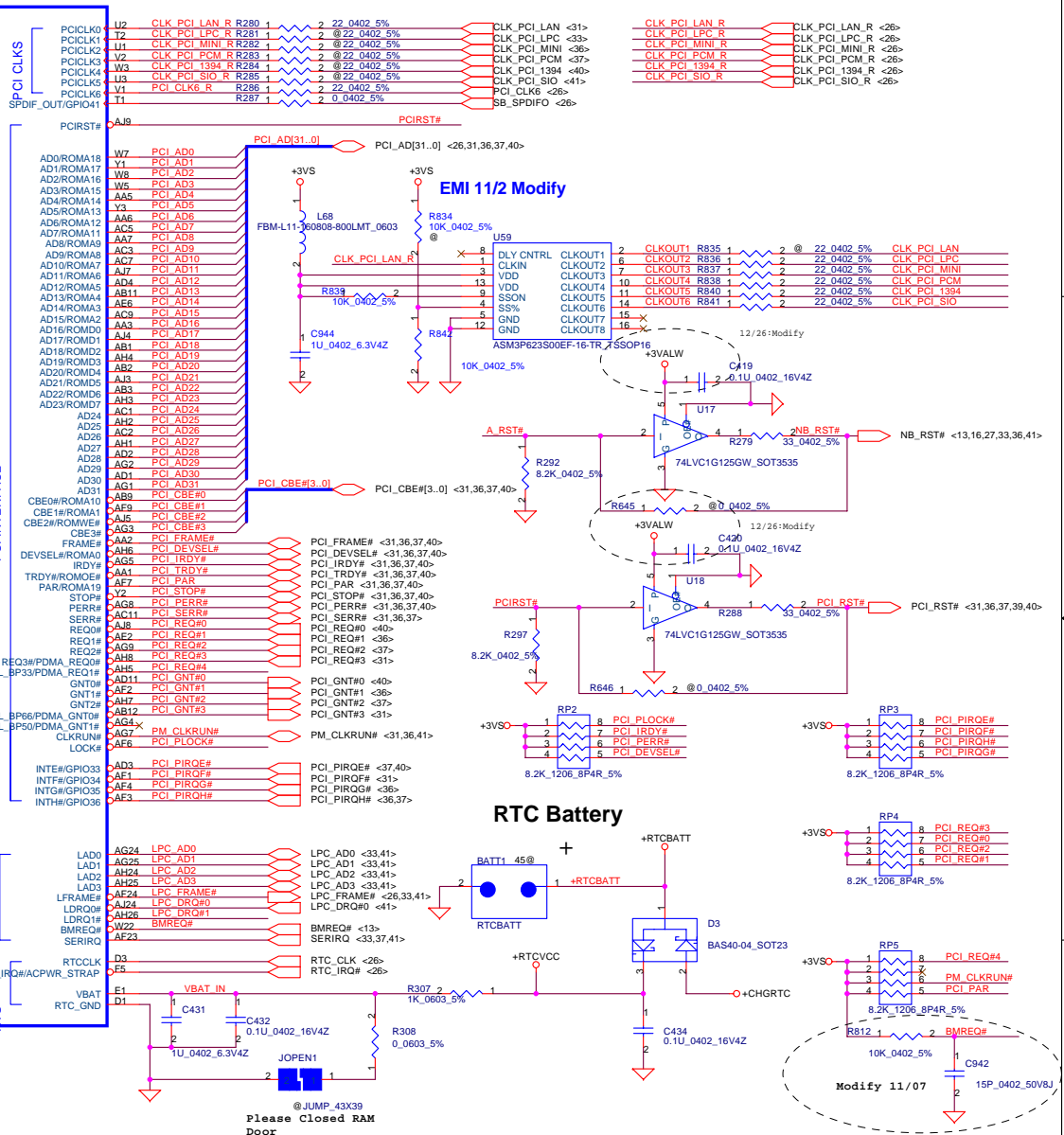
R294 CALRN: SB600=562R 1%, SB460=150R 1%
R295 CALRN: SB600=2.05K 1%, SB460=150R 1%
R296 CALRN: SB600=0R 1%, SB460=4.12K 1%



FOR SB600, CONNECT TO CPU_P5/LDT_P6
FOR SB460, CONNECT TO SSM3XSEL/GPIO0



SB460 Part 1 of 4



EMI 11/2 Modify

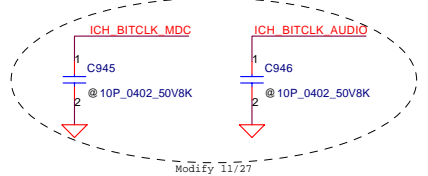
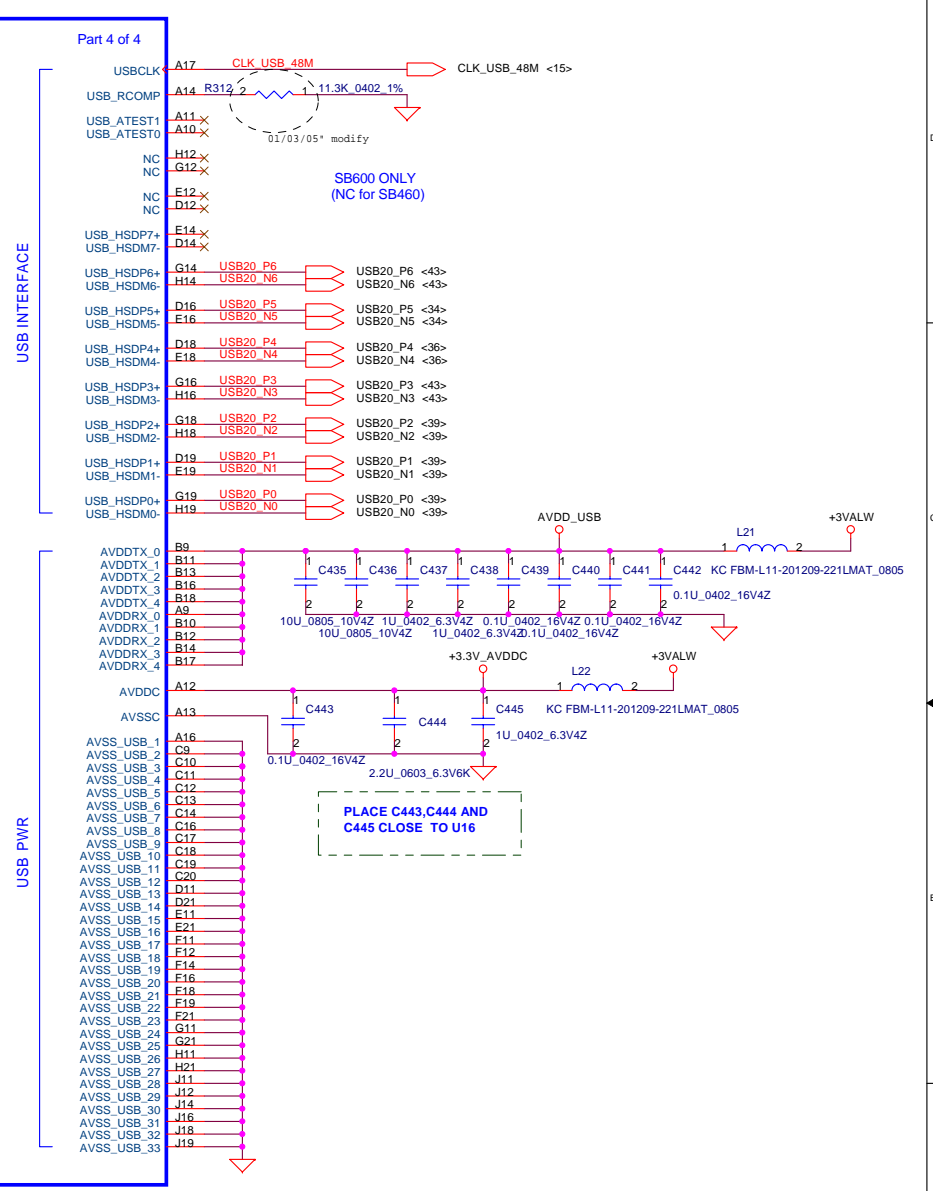
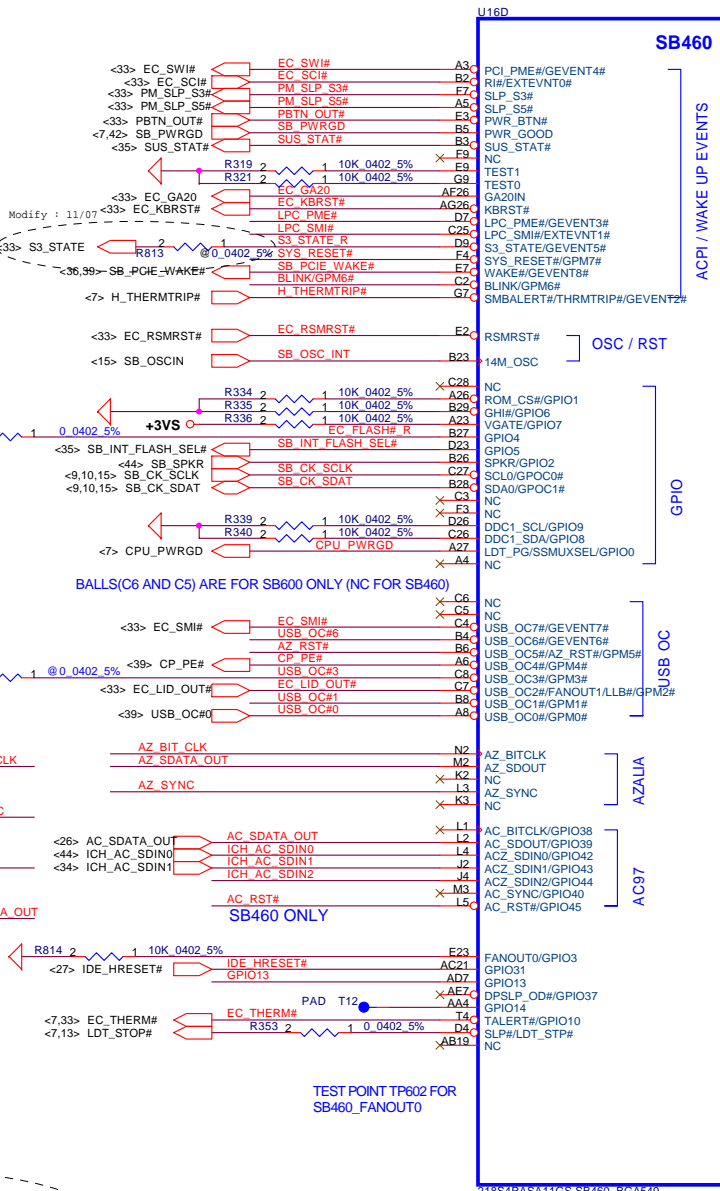
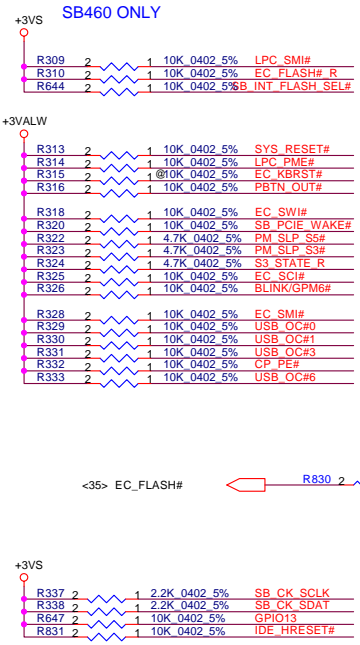
A_RST#

PCIRST#

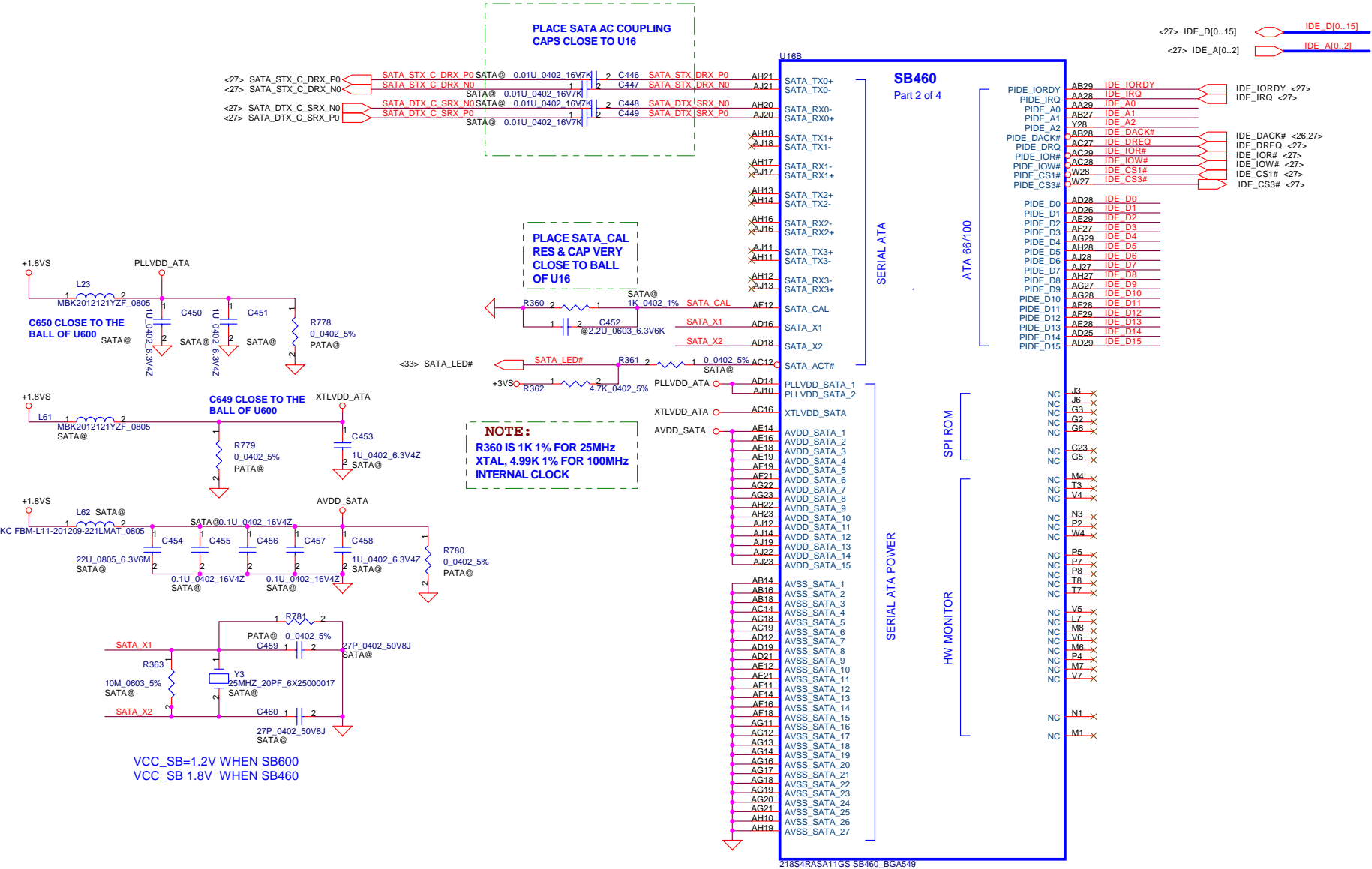
RTC Battery

④ JUMP 43X39
Please Closed RAM Door

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			Rev B
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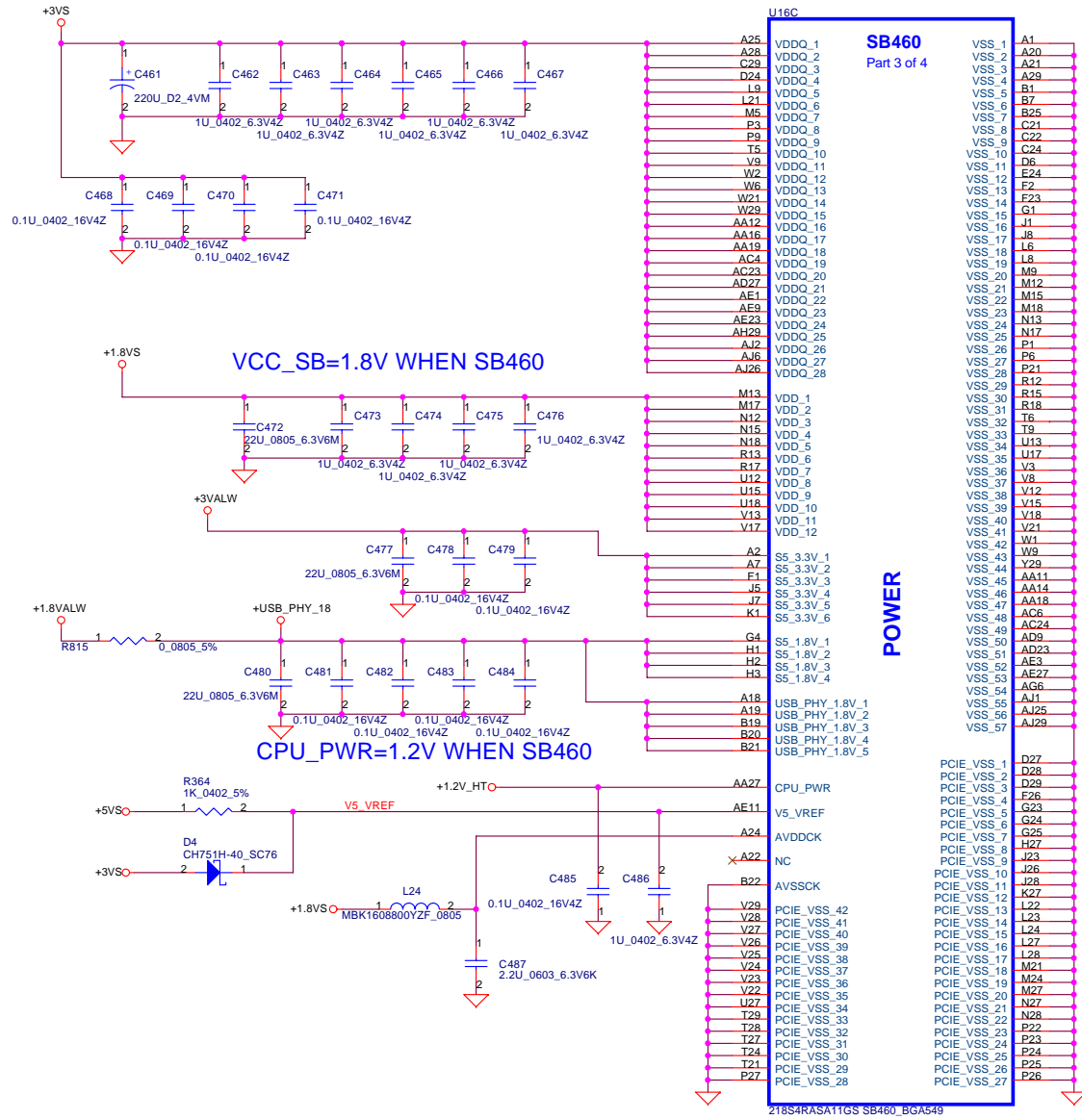


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VCC_SB=1.2V WHEN SB600
VCC_SB 1.8V WHEN SB460

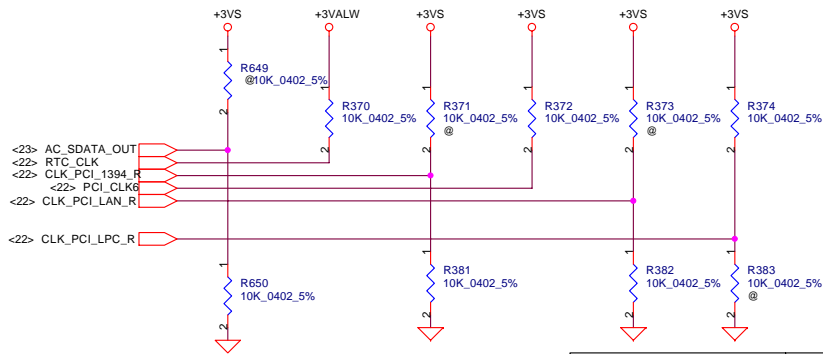
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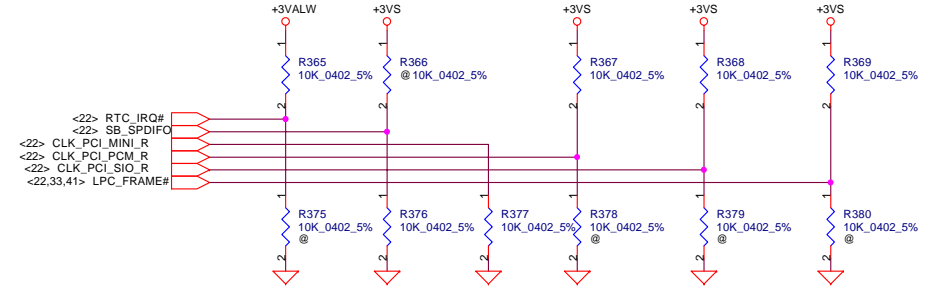
REQUIRED STRAPS

SB600 HAS 15K INTERNAL PD FOR AC_SDATA_OUT,
15K PU FOR RTC_CLK, EXTERNAL PU/PD IS
NOT REQUIRED; FOR SB460, EXTERNAL PU/PD ARE
REQUIRED



NOTE: R365 PU RESISTOR FOR
RTC_IRQ# IS REQUIRED FOR SB460
TO KEEP THE INPUT FROM FLOATING.

SB460 ONLY



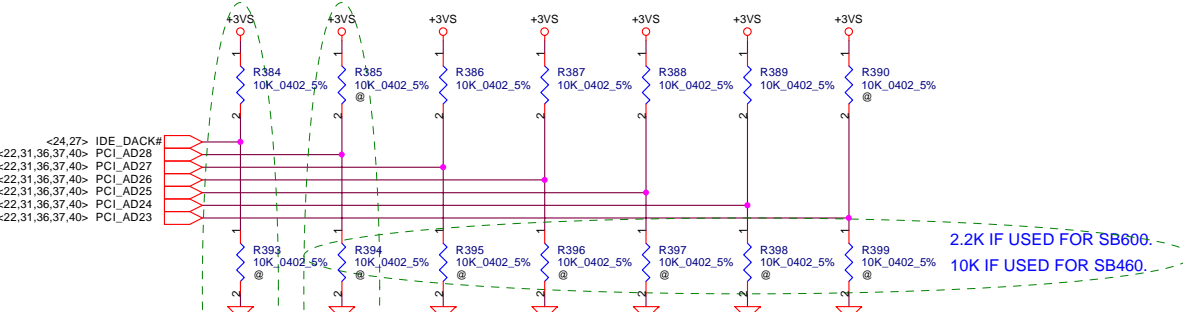
		SB600			SB460			
PULL HIGH	AC_SDATA_OUT	RTC_CLK	PCI_CLK4 CLK_PCI_1394	PCI_CLK6	PCI_CLK0 CLK_PCI_LAN	PCI_CLK1 CLK_PCI_LPC	PCI_CLK0 CLK_PCI_LAN	PCI_CLK1 CLK_PCI_LPC
	USE DEBUG STRAPS	INTERNAL RTC DEFAULT	USE INT. PLL48	CPU IF=K8 DEFAULT	ROM TYPE: H, H = PCI ROM H, L = SPI ROM L, H = LPC ROM L, L = FWH ROM	DEFAULT	ROM TYPE: H, H = PCI ROM H, L = LPC I ROM L, H = LPC II ROM L, L = FWH ROM	DEFAULT
PULL LOW	IGNORE DEBUG STRAPS	EXTERNAL RTC	USE EXT. 48MHZ DEFAULT	CPU IF=P4	NOTE: FOR SB460, PCI_CLK[8:7] ARE CONNECTED TO SUBSTRATE BALLS PCI_CLK[1:0]			
	DEFAULT	DEFAULT	DEFAULT					

	ACPWRON	SPDIF_OUT	PCI_CLK2	PCI_CLK3	PCI_CLK5	LFRAME#
PULL HIGH	RTC_IRQ#	SB_SPDIFO	CLK_PCI_MINI	CLK_PCI_PCM	CLK_PCI_SIO	LPC_FRAME#
	MANUAL PWR ON DEFAULT	SIO 24MHz	XTAL MODE NOT SUPPORTED	USB PHY POWERDOWN DISABLE DEFAULT	PCIE_CM_SET LOW DEFAULT	ENABLE THERMTRIP# DEFAULT
PULL LOW	AUTO PWR ON	SIO 48MHz DEFAULT	48MHZ OSC MODE DEFAULT	USB PHY POWERDOWN ENABLE	PCIE_CM_SET HIGH	DISABLE THERMTRIP#

OVERLAP COMMON PADS WHERE POSSIBLE FOR DUAL-OP RESISTORS.

DEBUG STRAPS

SB600 HAS 15K INTERNAL PU FOR PCI_AD[28:23]



	IDE_DACK#	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	BOOTFAILURETIMER DISABLED DEFAULT
PULL LOW	USE SHORT RESET	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	BOOTFAILURETIMER ENABLED

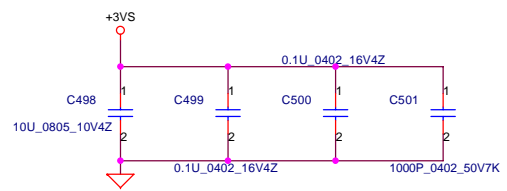
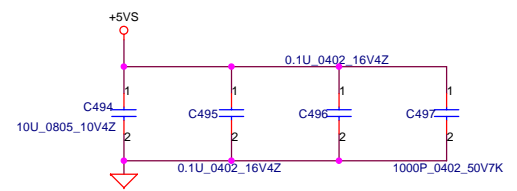
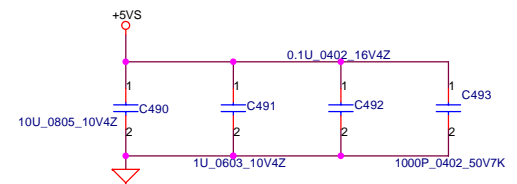
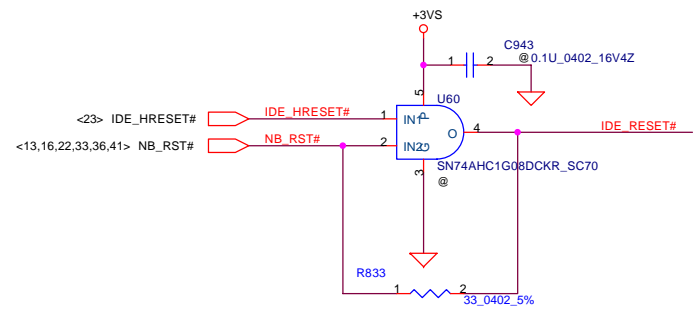
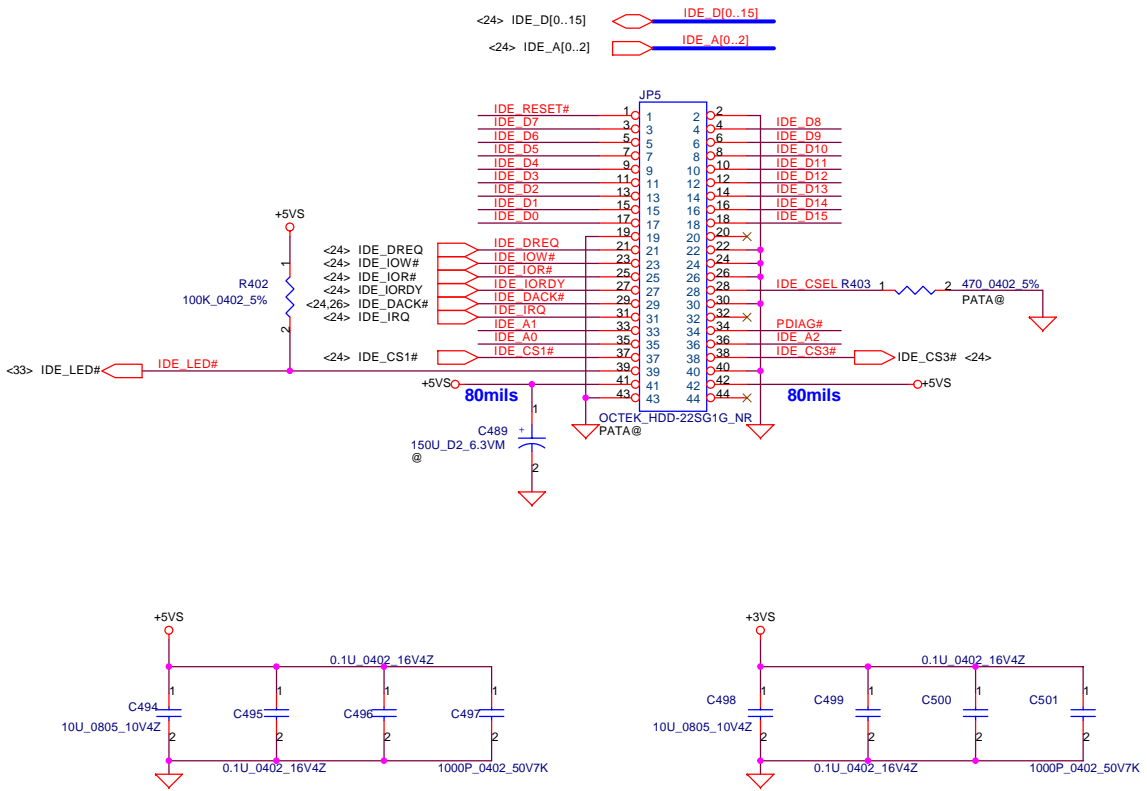
SB600 ONLY

NOTE: FOR SB460, PCI_AD23 IS RESERVED

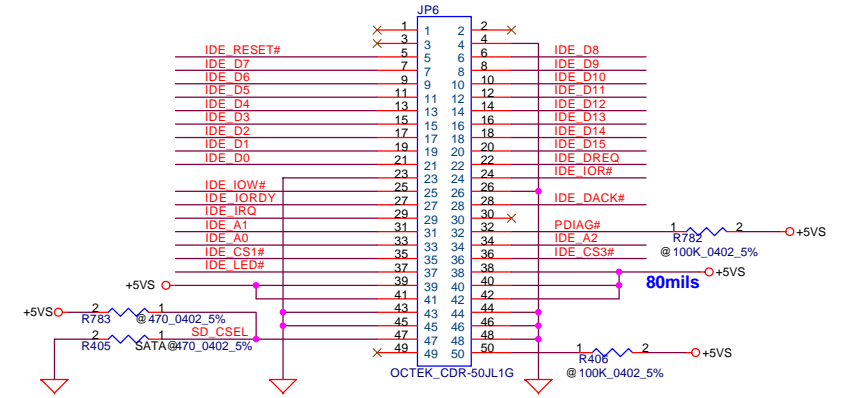
SB460 ONLY SB600 ONLY

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HDD CONN

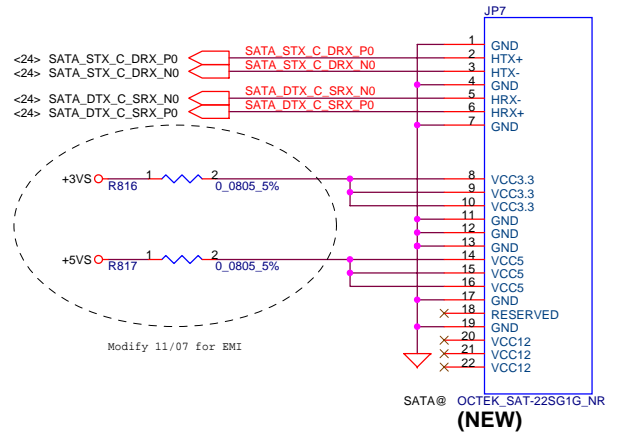


CDROM CONN



IDE_CSEL
Grounding for Master (When use SATA HDD)
Open or High for Slaver (Normal)

SATA HDD Conn.

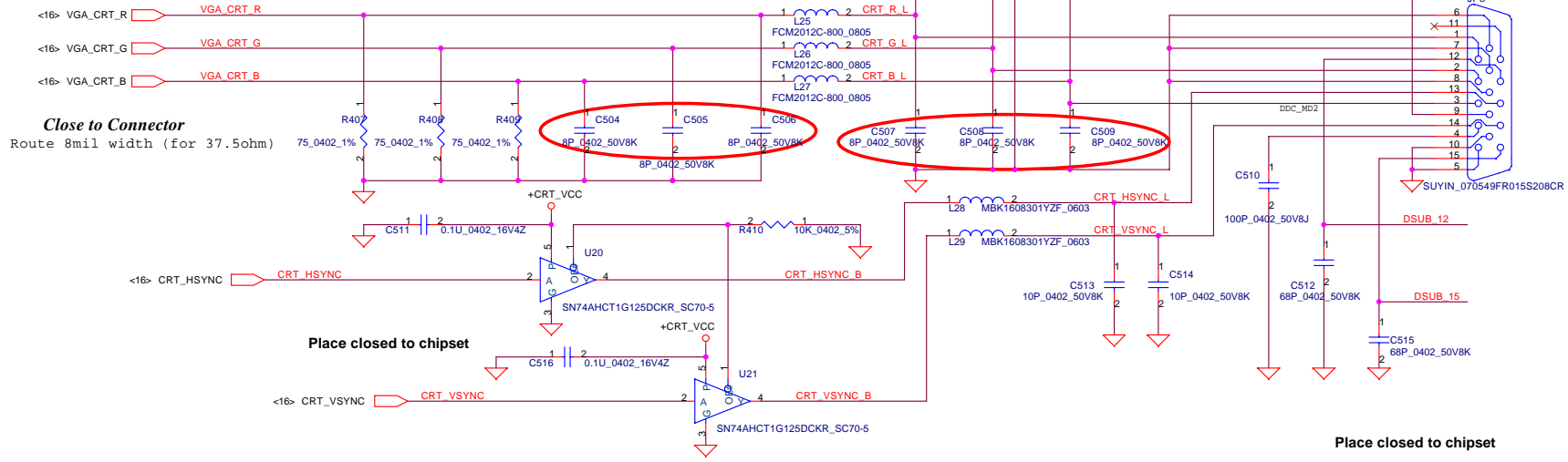


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CRT Connector

VGA:8P_0402_50V8K
UMA:10P_0402_50V8J

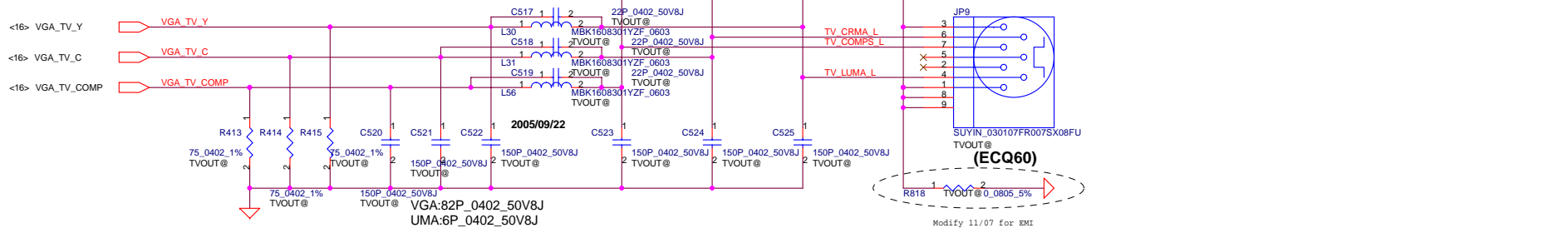


Close to Connector
Route 8mil width (for 37.5ohm)

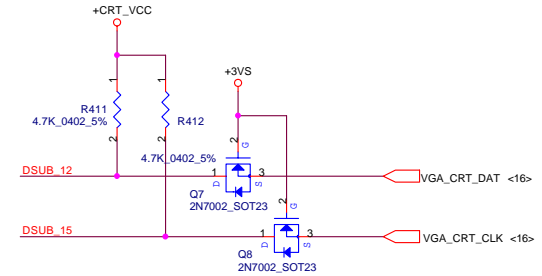
Place closed to chipset

TV-OUT Conn.

VGA:82P_0402_50V8J
UMA:6P_0402_50V8J



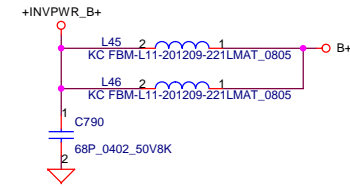
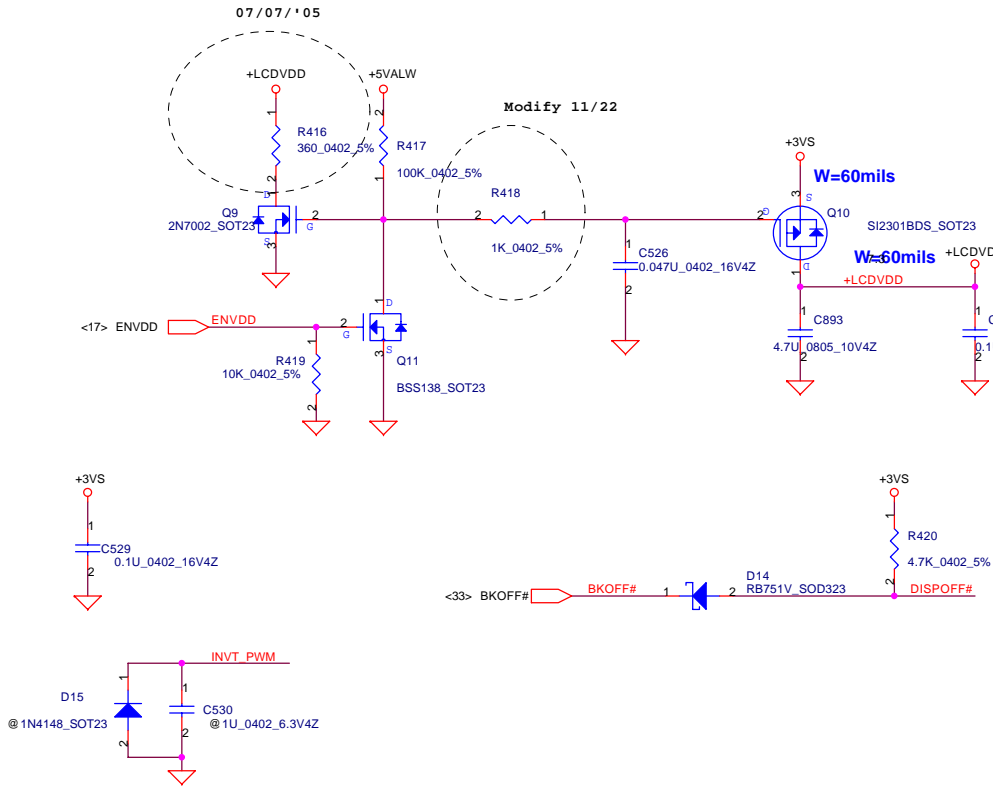
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Route 8mil width (for 37.5ohm)



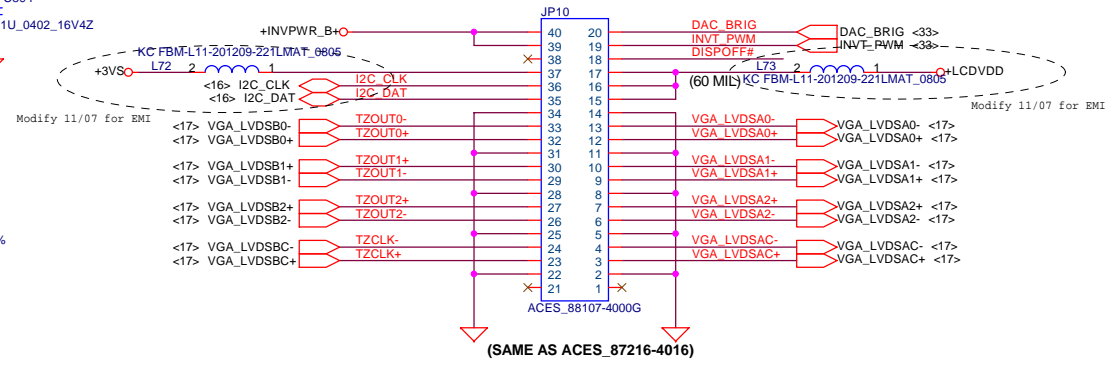
Place closed to chipset

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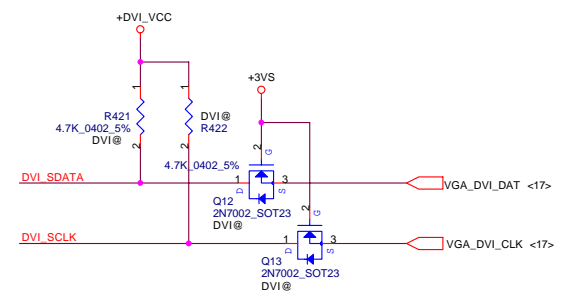
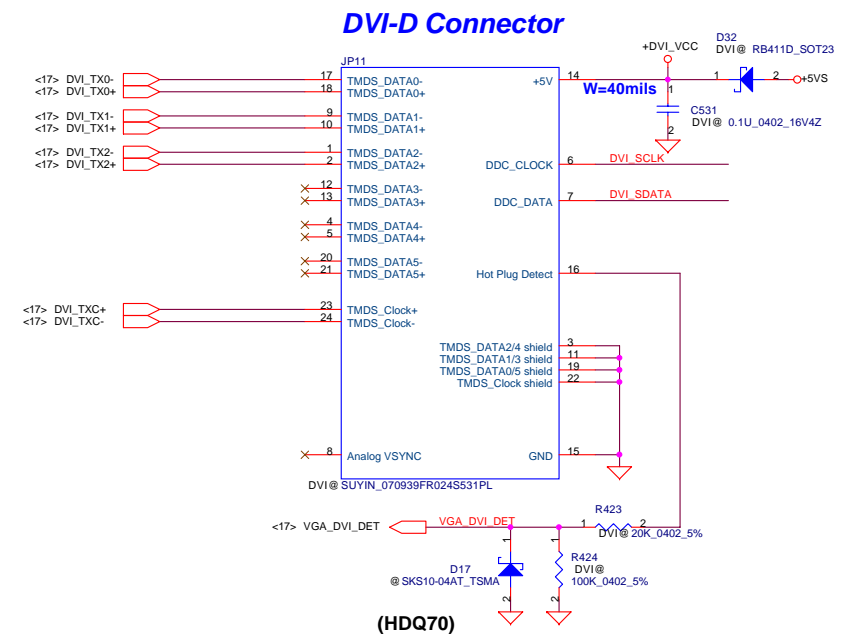
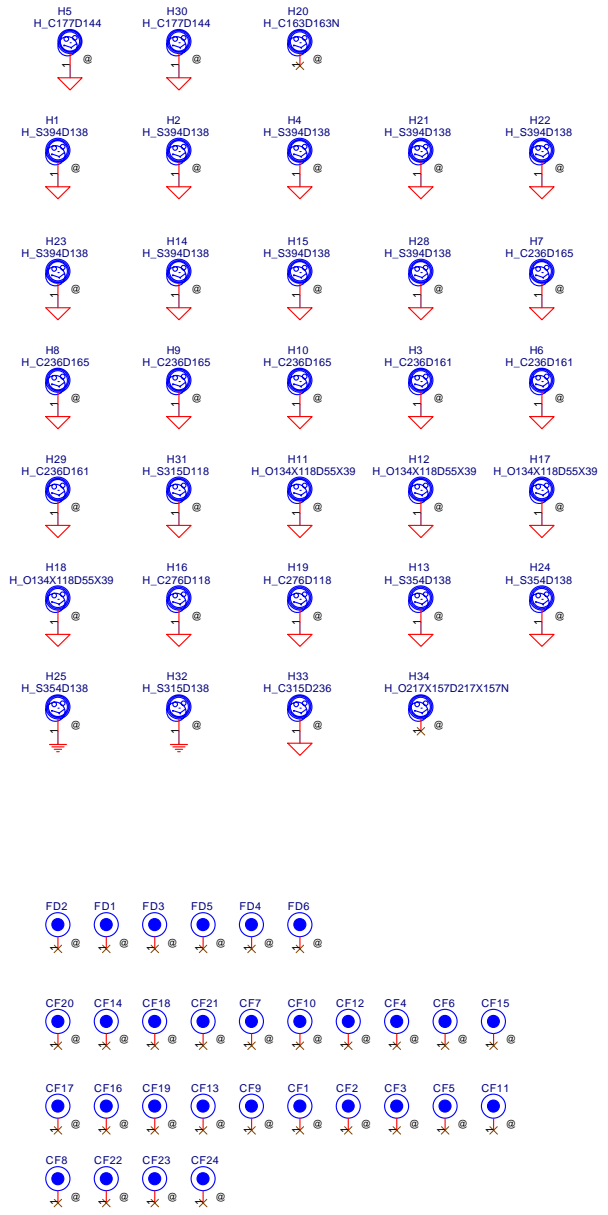
LCD POWER CIRCUIT



LCD/PANEL BD. Conn.



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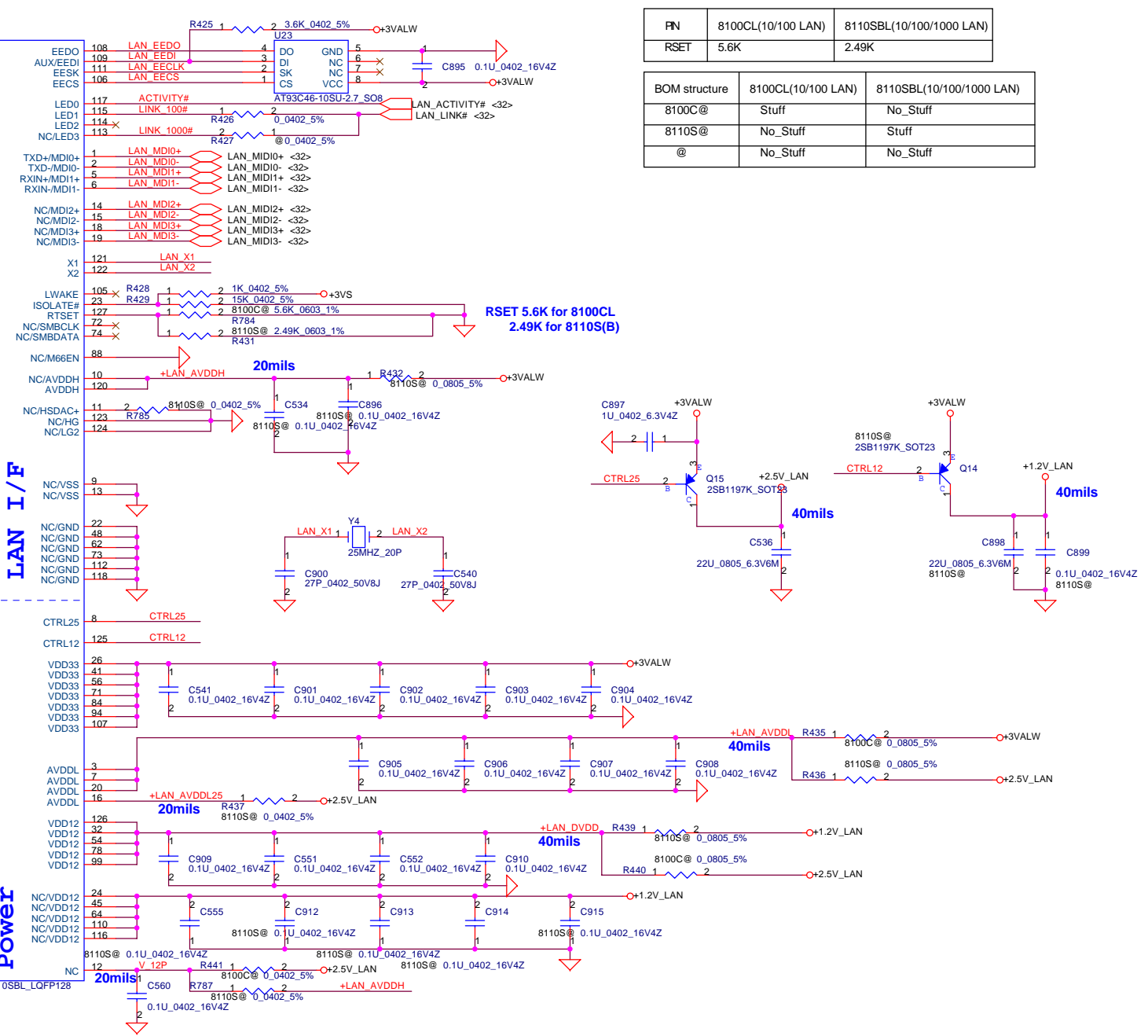
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PCI_A00	104	AD0
PCI_A01	103	AD1
PCI_A02	102	AD2
PCI_A03	98	AD3
PCI_A04	96	AD4
PCI_A05	97	AD5
PCI_A06	95	AD6
PCI_A07	93	AD7
PCI_A08	90	AD8
PCI_A09	89	AD9
PCI_A10	86	AD10
PCI_A11	86	AD11
PCI_A12	85	AD12
PCI_A13	83	AD13
PCI_A14	82	AD14
PCI_A15	79	AD15
PCI_A16	59	AD16
PCI_A17	58	AD17
PCI_A18	57	AD18
PCI_A19	55	AD19
PCI_A20	53	AD20
PCI_A21	50	AD21
PCI_A22	49	AD22
PCI_A23	47	AD23
PCI_A24	43	AD24
PCI_A25	42	AD25
PCI_A26	40	AD26
PCI_A27	39	AD27
PCI_A28	37	AD28
PCI_A29	36	AD29
PCI_A30	34	AD30
PCI_A31	33	AD31

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<22,36,37,40>	PCI_CBE#2	60	C/BE#2
<22,36,37,40>	PCI_CBE#3	44	C/BE#3
PCI_AD17	LAN_IDSEL	46	IDSEL
<22,36,37,40>	PCI_PAR	76	PAR
<22,36,37,40>	PCI_FRAME#	61	FRAME#
<22,36,37,40>	PCI_IRDY#	63	IRDY#
<22,36,37,40>	PCI_TRDY#	67	TRDY#
<22,36,37,40>	PCI_DEVSEL#	68	DEVSEL#
<22,36,37,40>	PCI_STOP#	69	STOP#
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<22>	PCI_REQ#3	30	REQ#
<22>	PCI_GNT#3	29	GNT#
<22>	PCI_PIRQ#	25	INTA#
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<22>	CLK_PCI_LAN	28	CLK
<22,36,41>	PM_CLKRUN#	65	PM_CLKRUN#

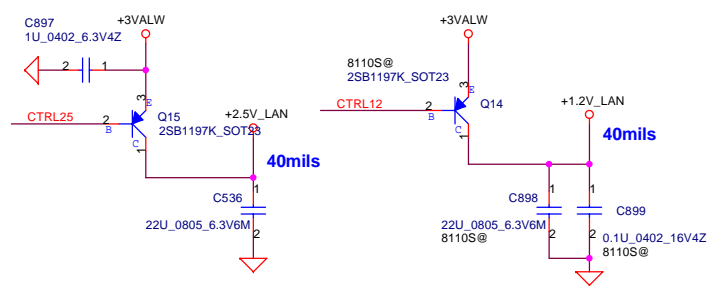
4	GND/VSS
17	GND/VSS
128	GND/VSS
21	GND/VSSPST
38	GND/VSSPST
51	GND/VSSPST
66	GND/VSSPST
81	GND/VSSPST
91	GND/VSSPST
101	GND/VSSPST
119	GND/VSSPST
35	GND
52	GND
80	GND
100	GND

RTL8110SBL change to Ver.D



FN	8100CL(10/100 LAN)	8110SBL(10/100/1000 LAN)
RSET	5.6K	2.49K

BOM structure	8100CL(10/100 LAN)	8110SBL(10/100/1000 LAN)
8100C@	Stuff	No_Stuff
8110S@	No_Stuff	Stuff
@	No_Stuff	No_Stuff



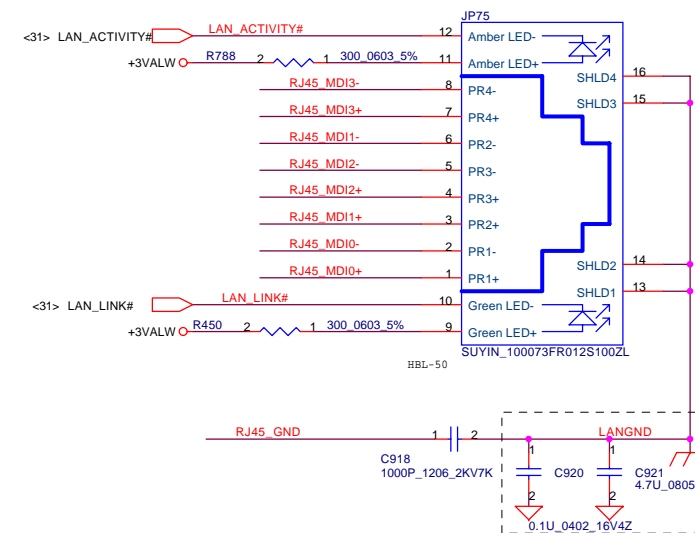
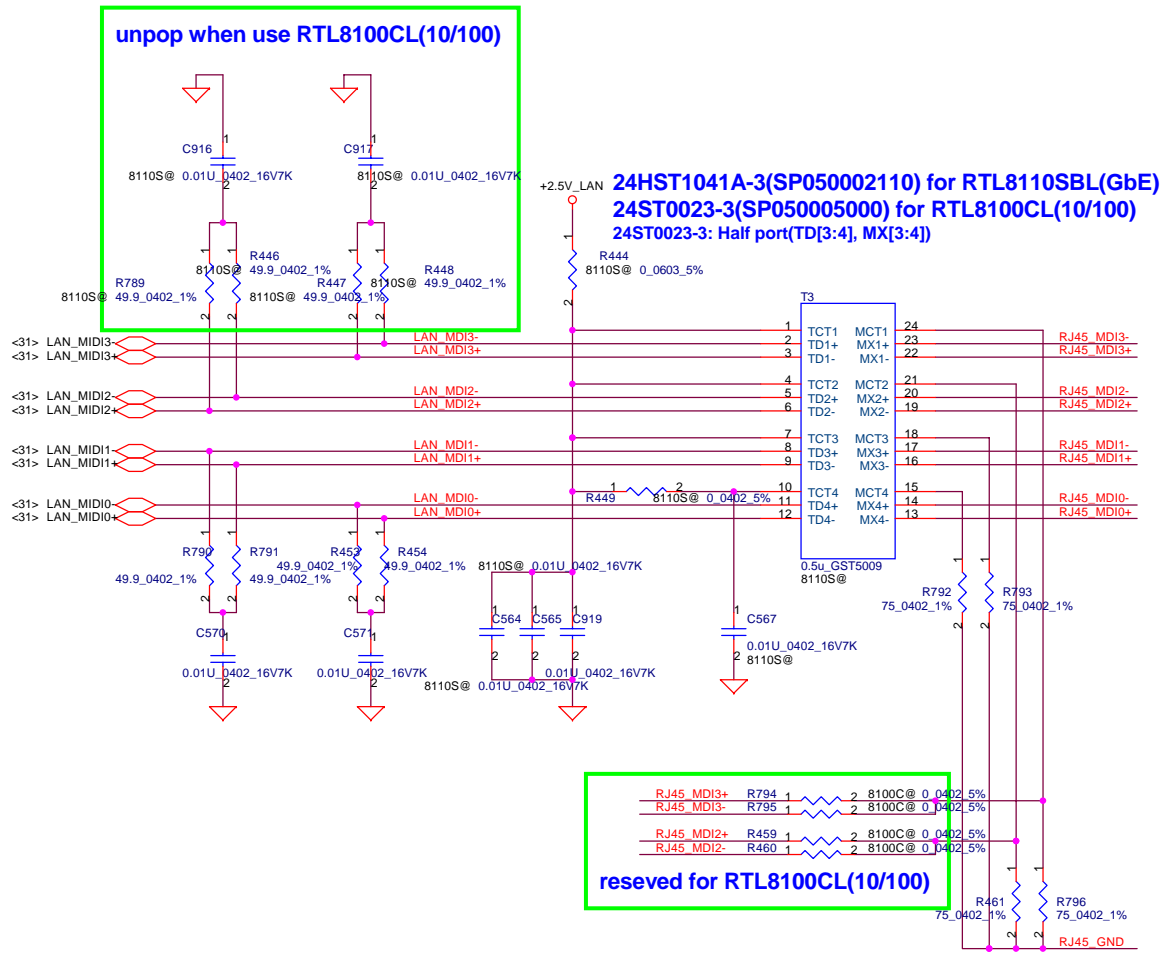
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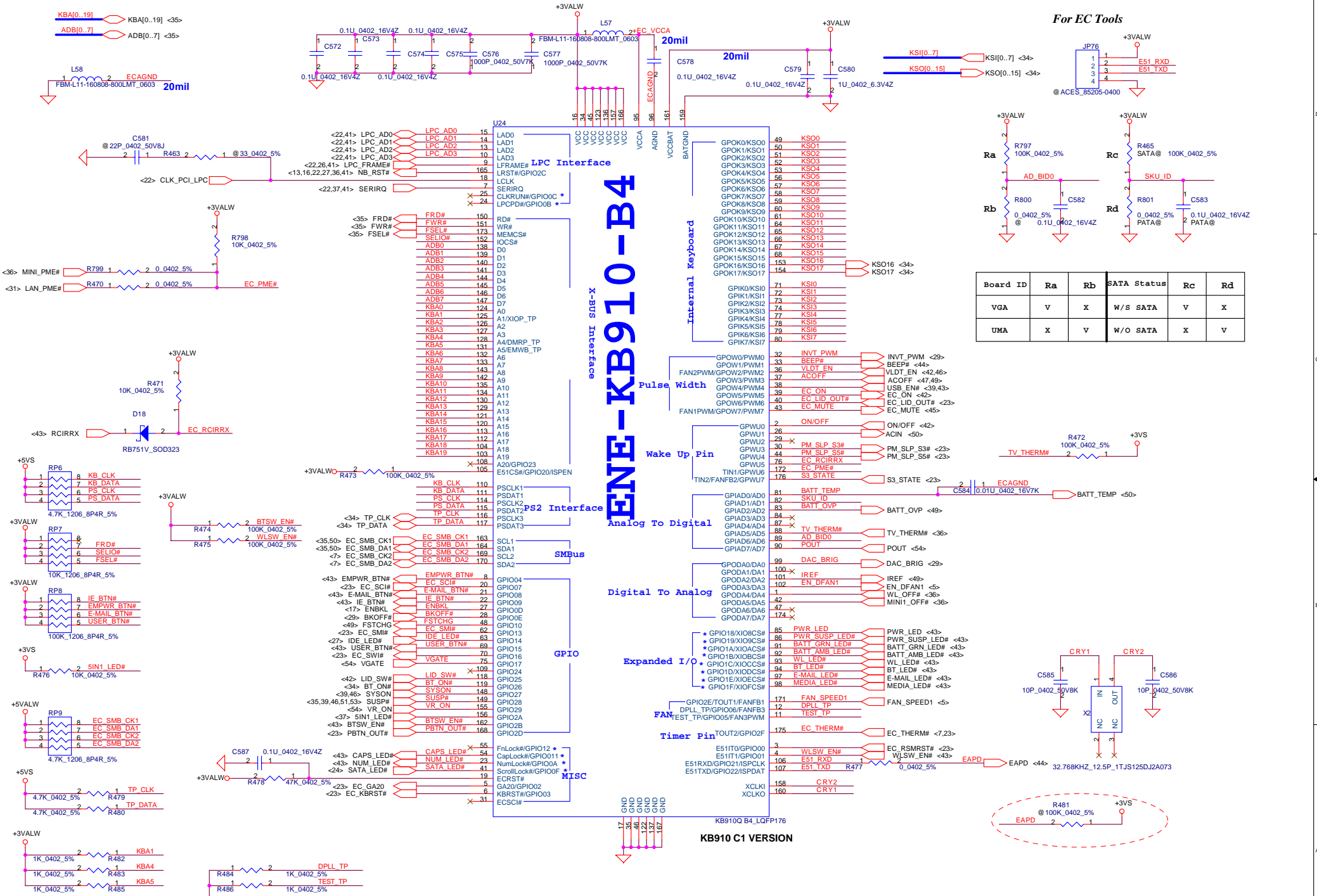
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LAN RTL8110SBL/RTL8100CL



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ENE-KB910-B4

Internal Keyboard

Pulse Width

Wake Up Pin

Analog To Digital

Digital To Analog

Expanded I/O

FAN

Timer Pin

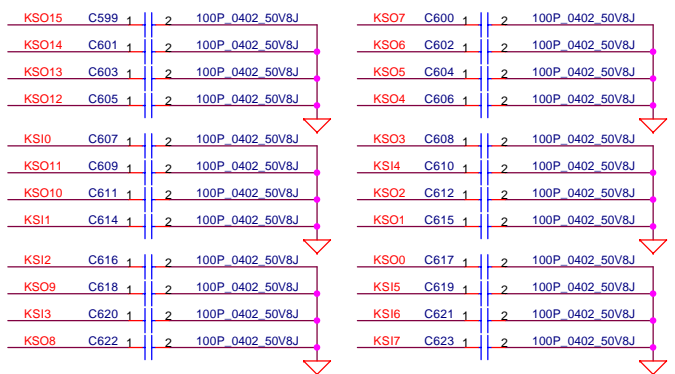
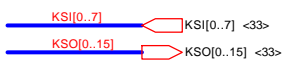
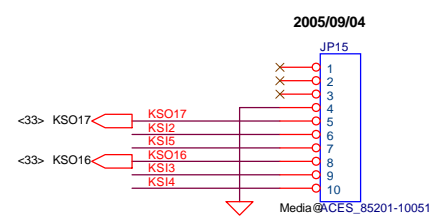
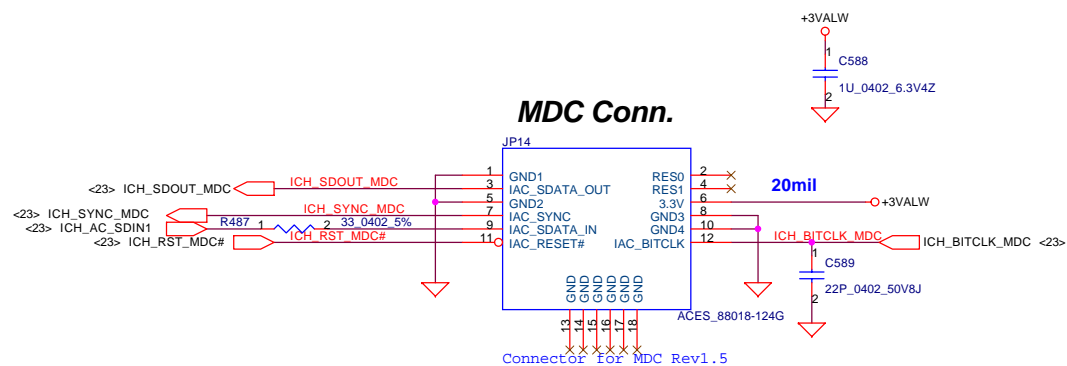
MISC

KB910Q B4_LQFP176

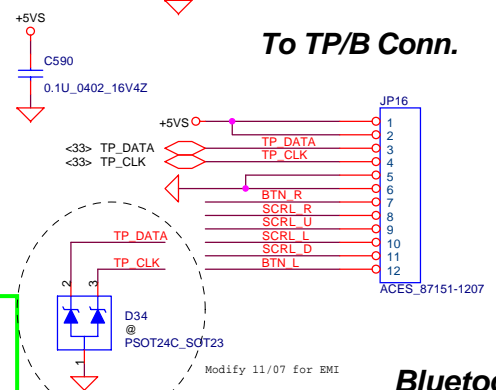
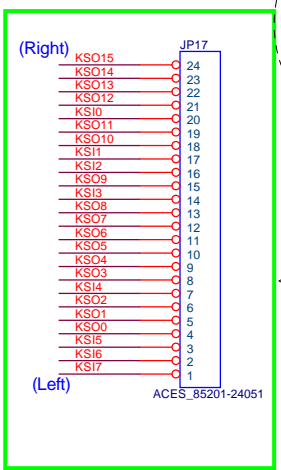
KB910 C1 VERSION

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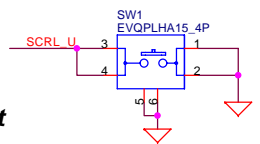
Compal Electronics, Inc.			
Title			
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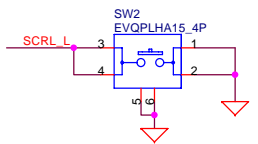
INT_KBD Conn.



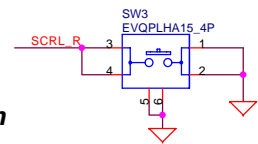
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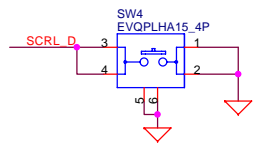
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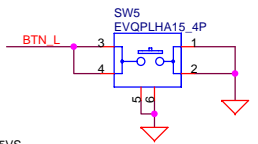
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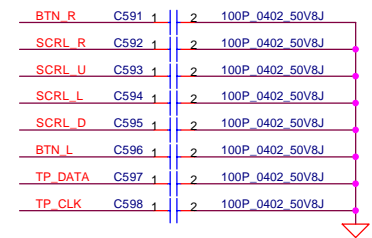
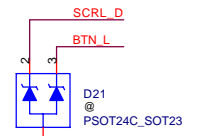
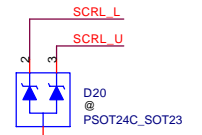
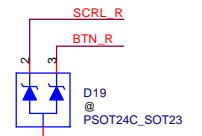
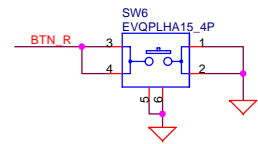
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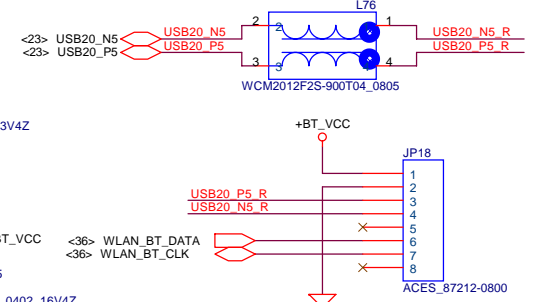
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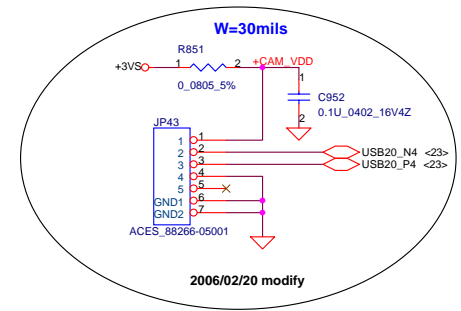
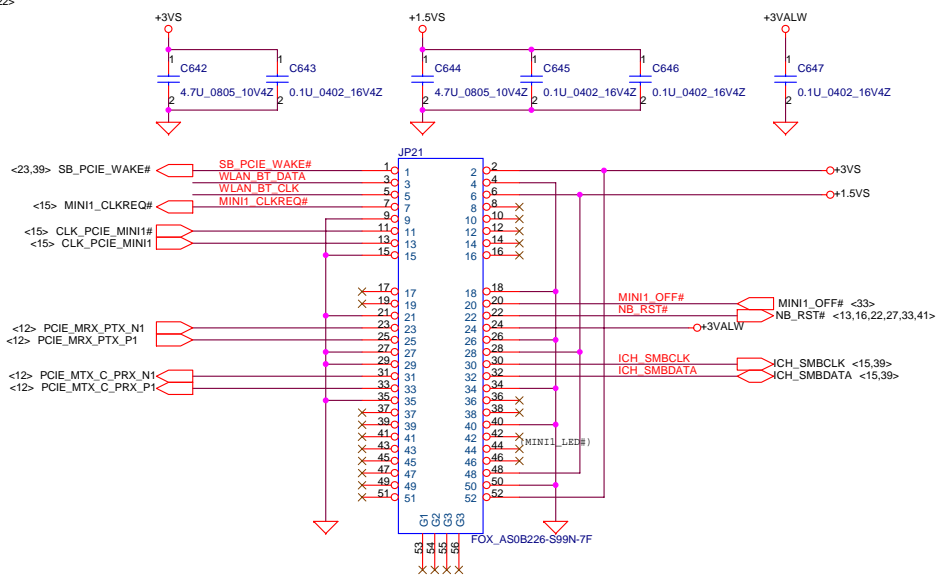
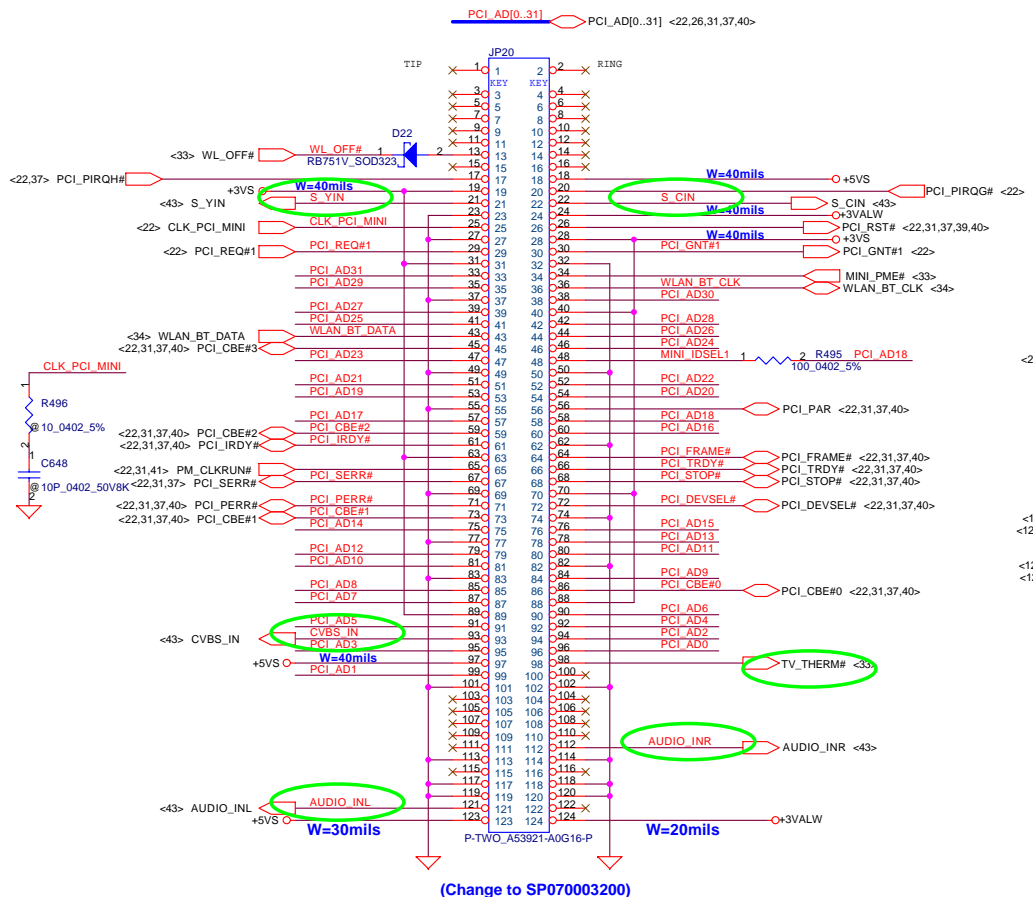
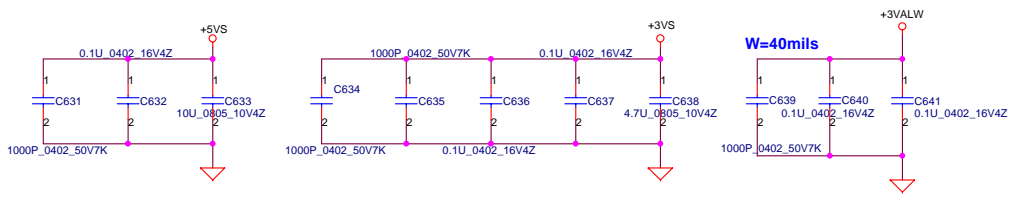
Right



Bluetooth Conn.



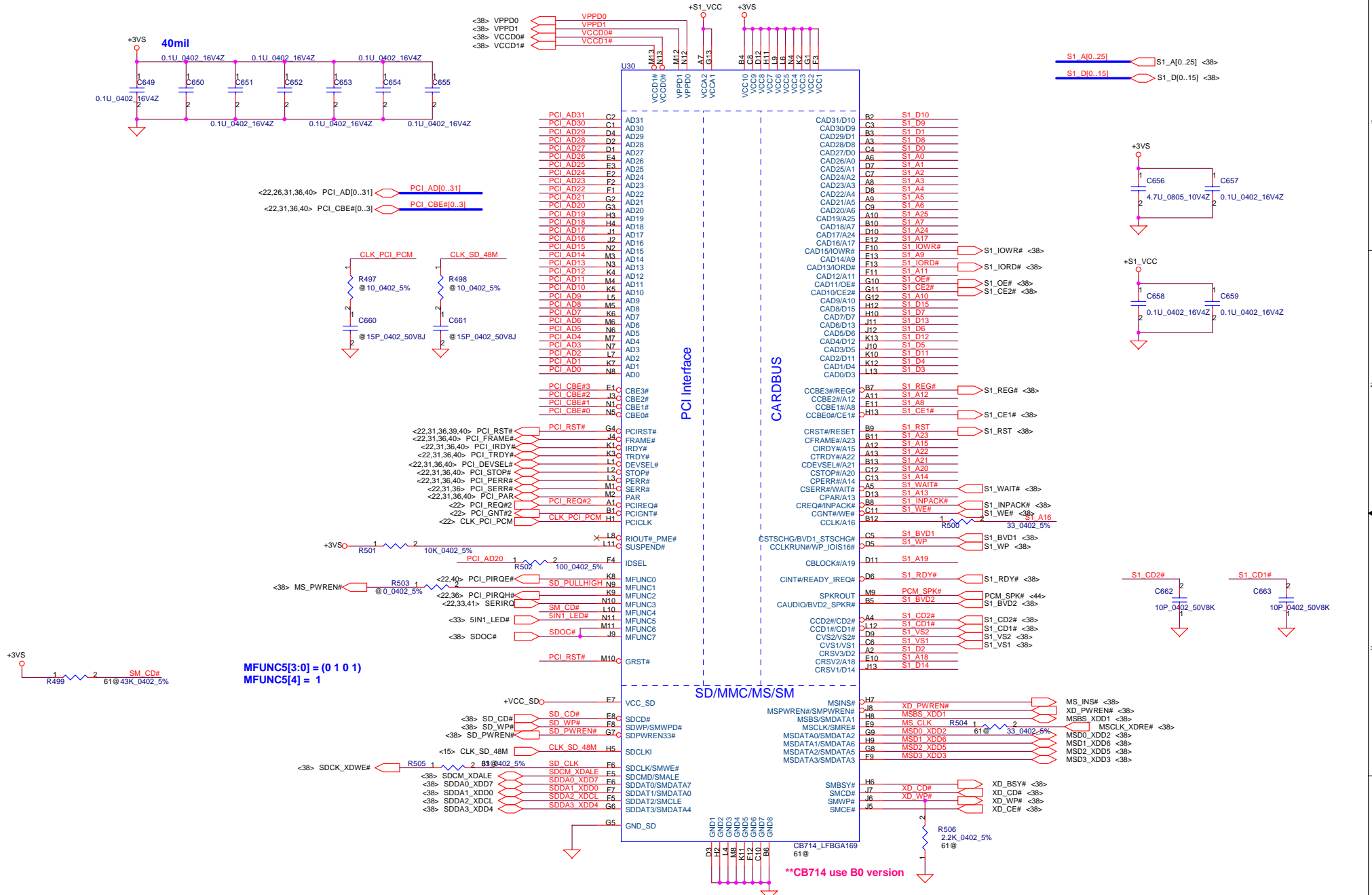
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(Change to SP070003200)

2006/02/20 modify

Mini Card Power Rating			
Power	Primary Power (mA)		Auxiliary Power (mA)
	Peak	Normal	Normal
+3VS	1000	750	Normal
+3VALW	330	250	250 (wake enable)
+1.5VS	500	375	5 (Not wake enable)

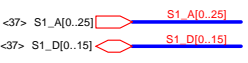
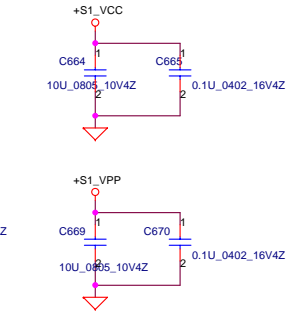
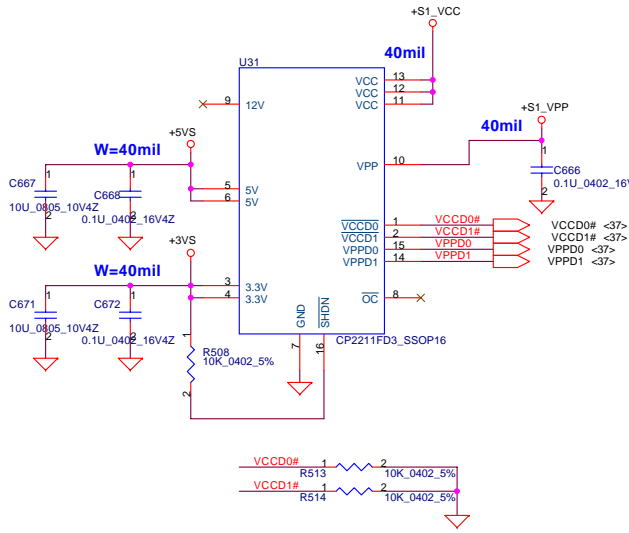


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		2006/06/20

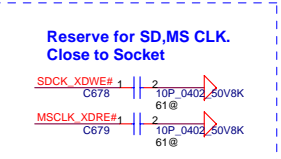
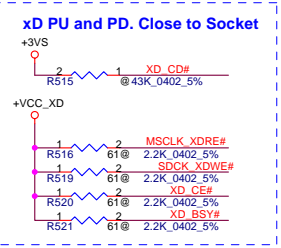
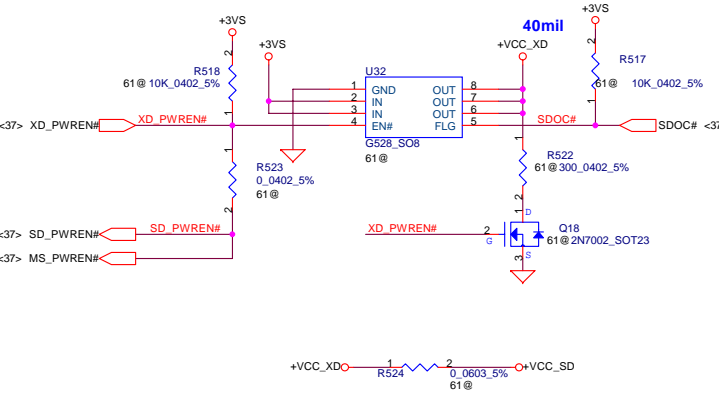
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Title SCHEMATIC, M/B LA-3151P		
Size	Document Number	Rev
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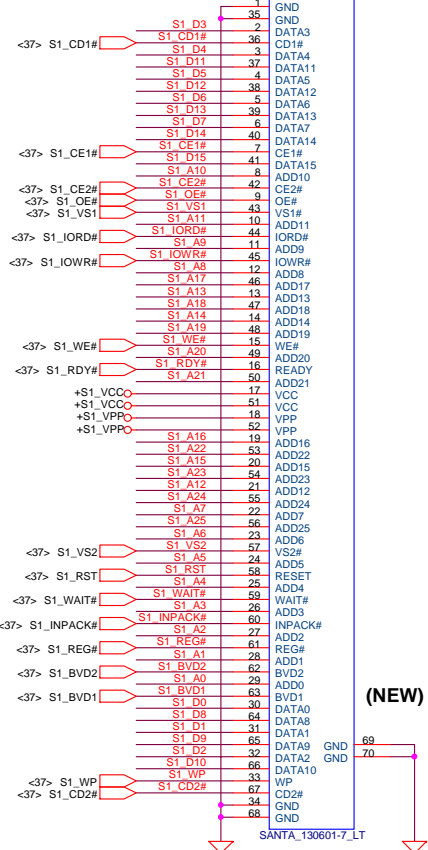
PCMCIA Power Control



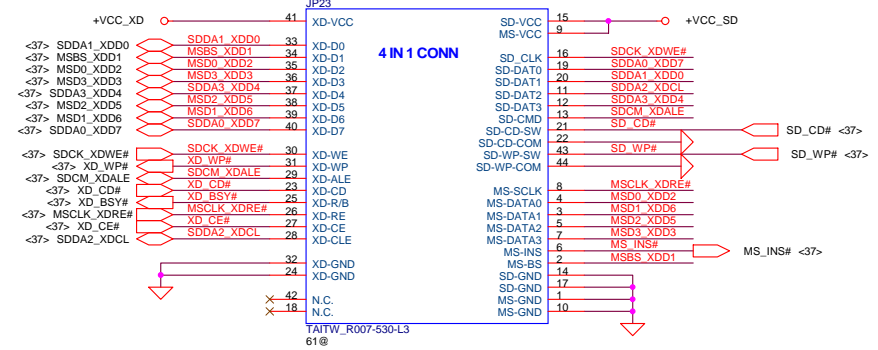
SD/MS Power Control



PCMCIA Socket

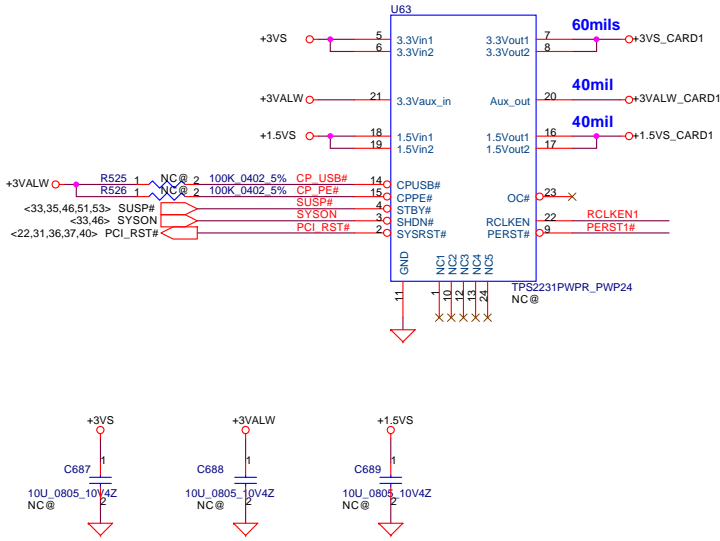


4 IN 1 Socket (HDQ70)

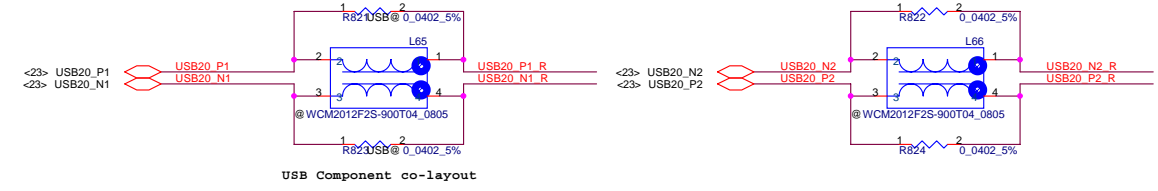
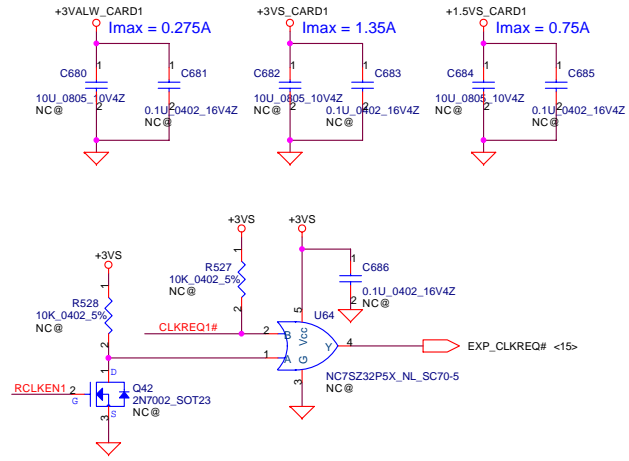
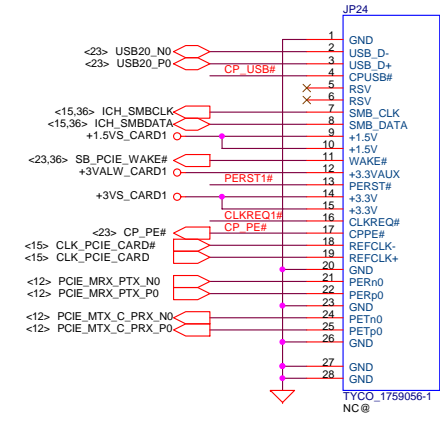


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Size	Document Number	Rev		Date		
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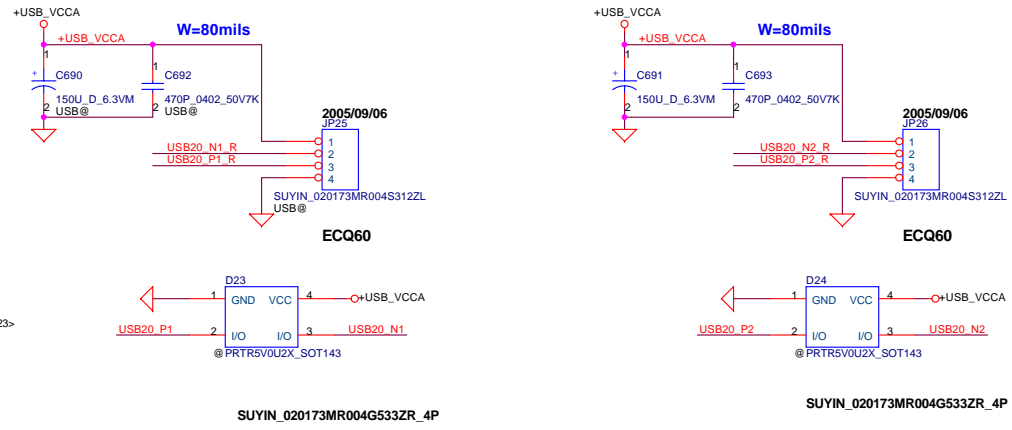
New Card Power Switch



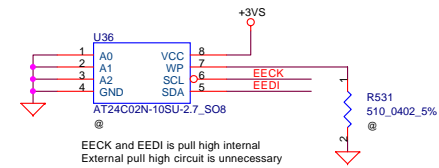
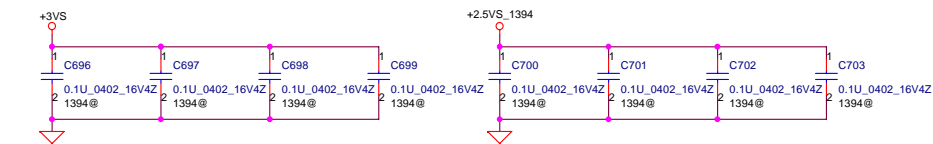
New Card Socket (Left)



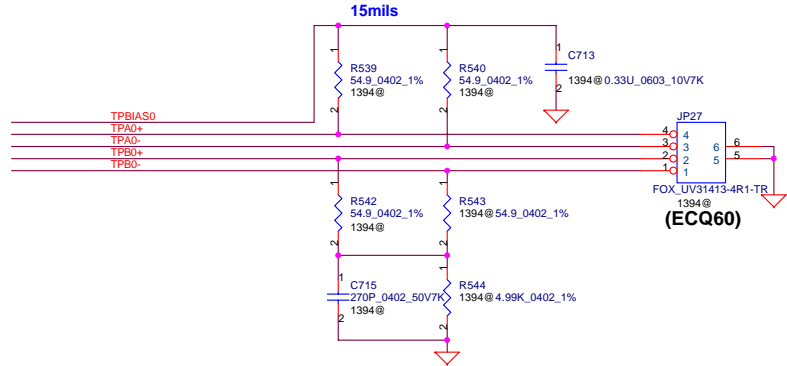
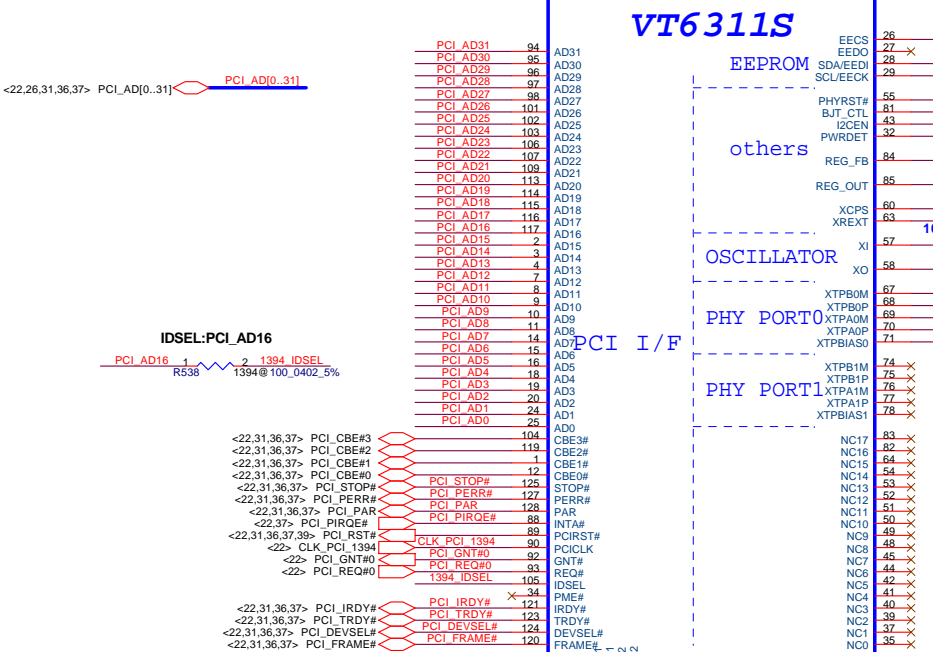
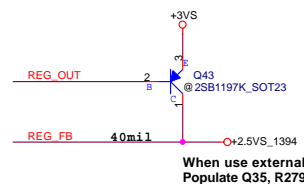
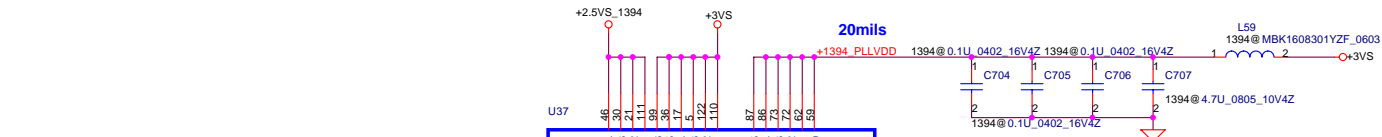
USB CONN. 1 & 2



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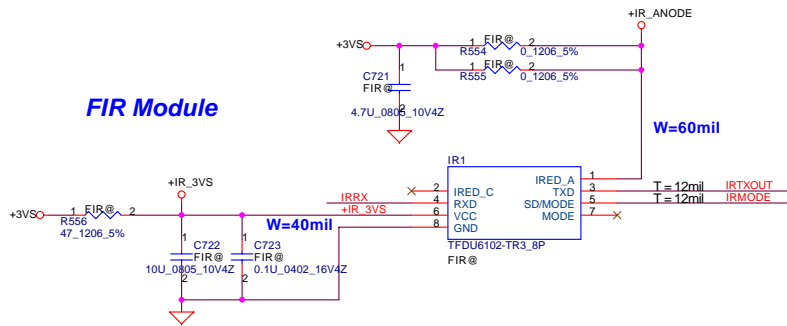
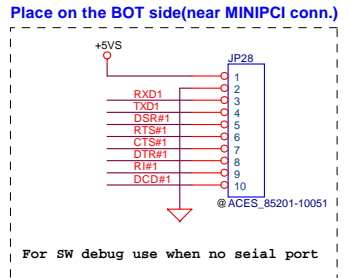
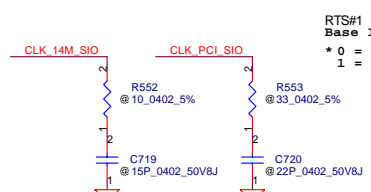
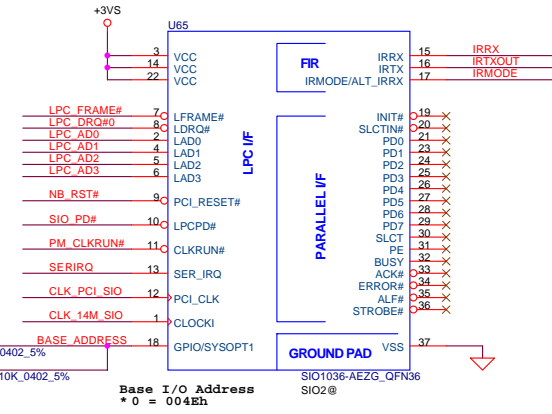
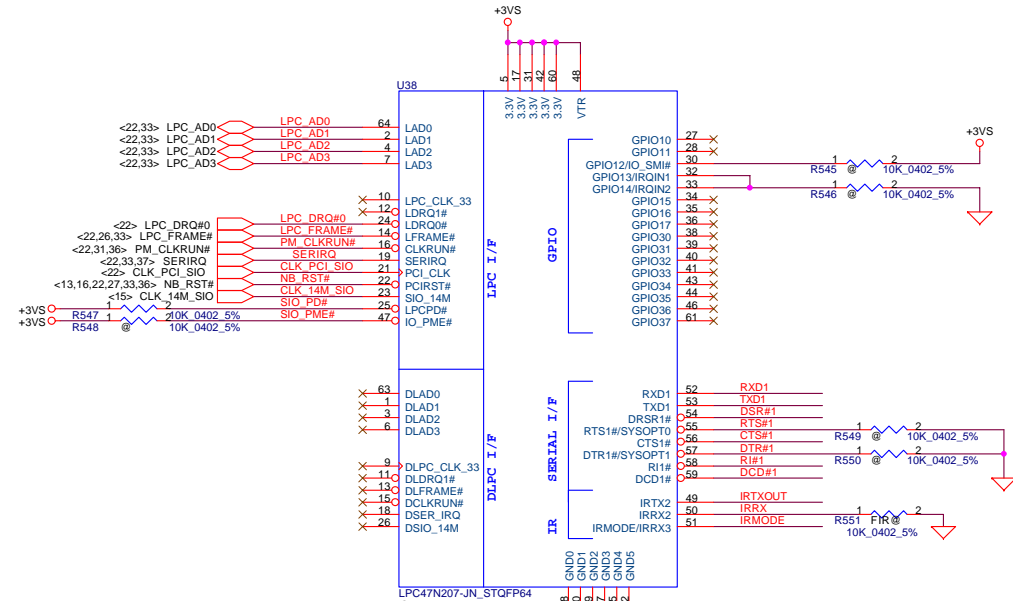
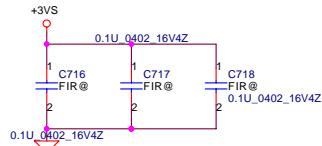


When use external EEPROM
Populate U14, R246, R253
Un-populate R261

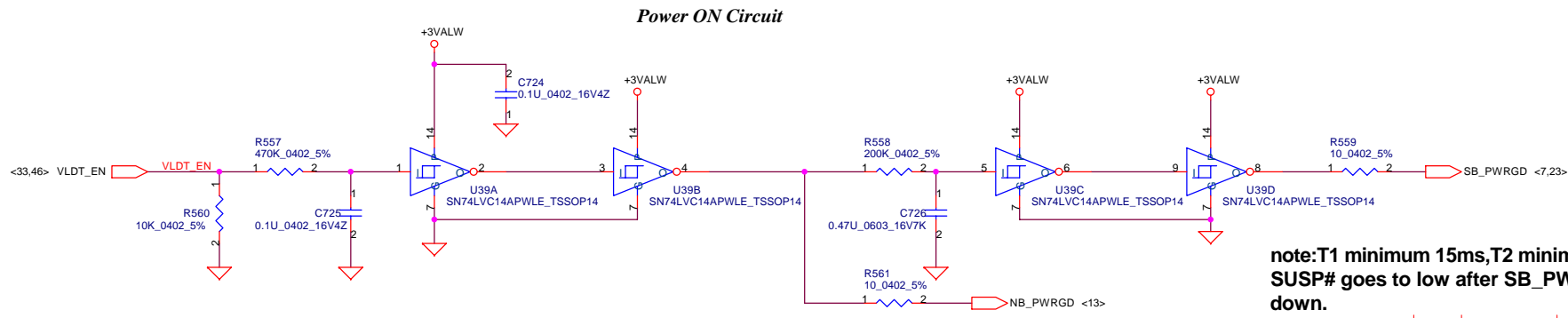


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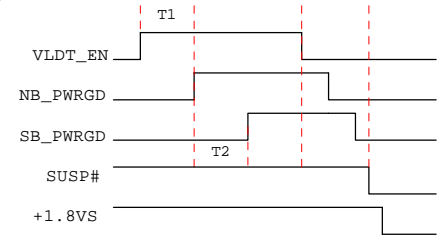
SUPER I/O SMsC LPC47N207



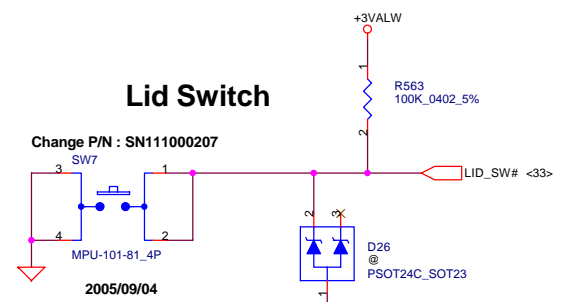
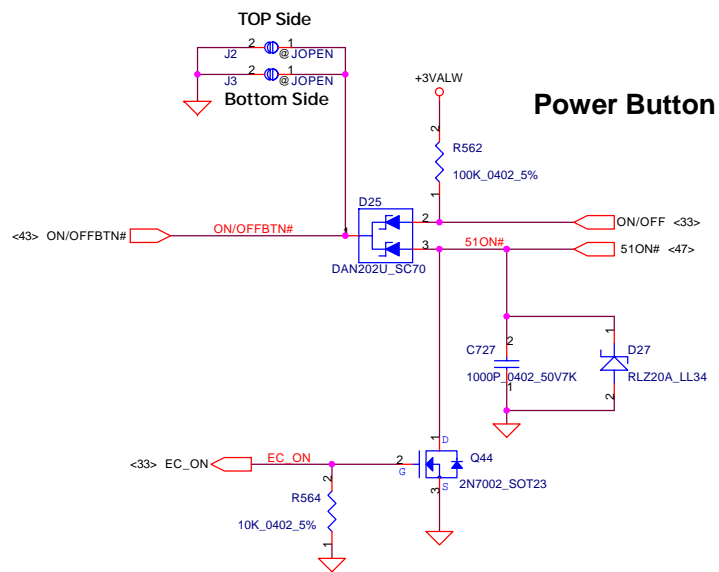
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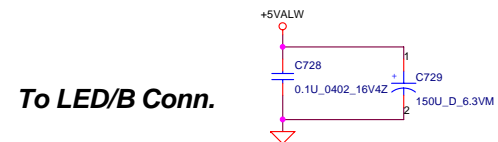
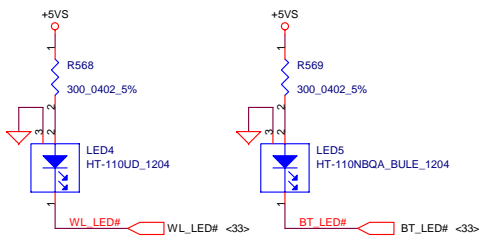
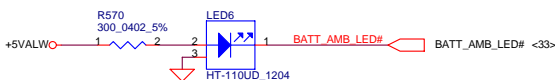
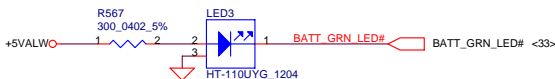
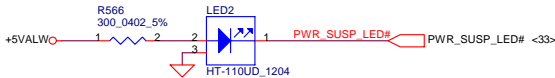
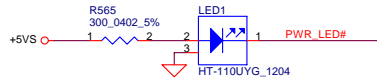
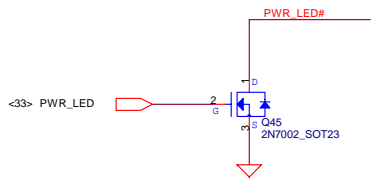
note:T1 minimum 15ms,T2 minimum 33ms/maximum 500ms, SUSP# goes to low after SB_PWRGD goes to low for power down.



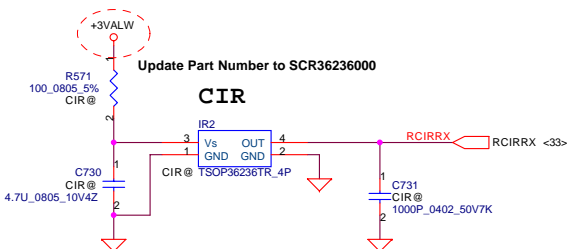
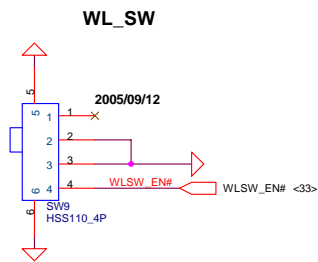
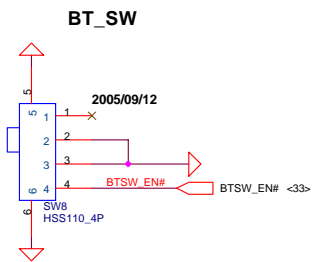
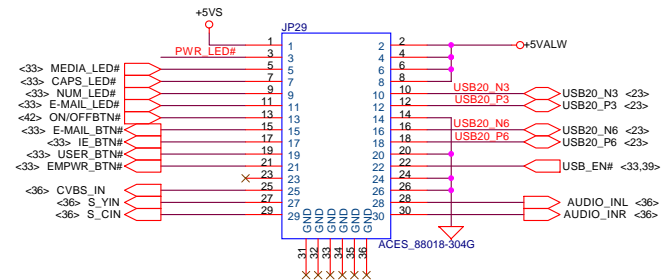
ON/OFF switch



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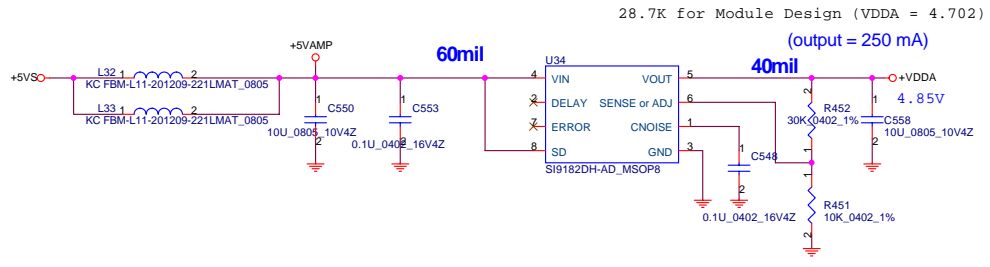
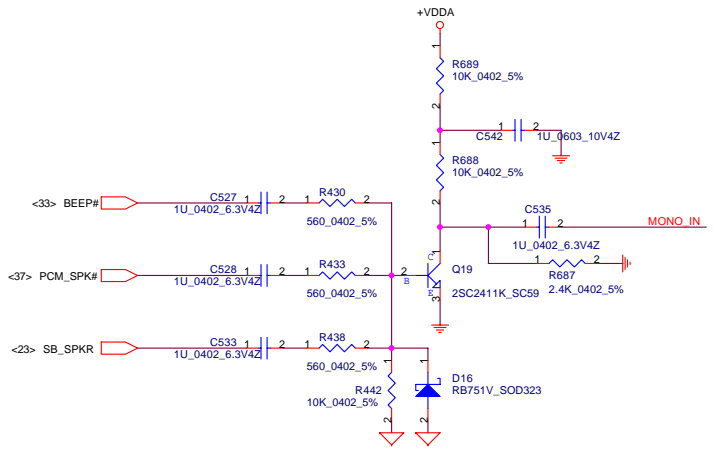


To LED/B Conn.

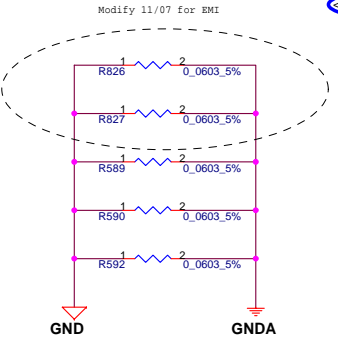
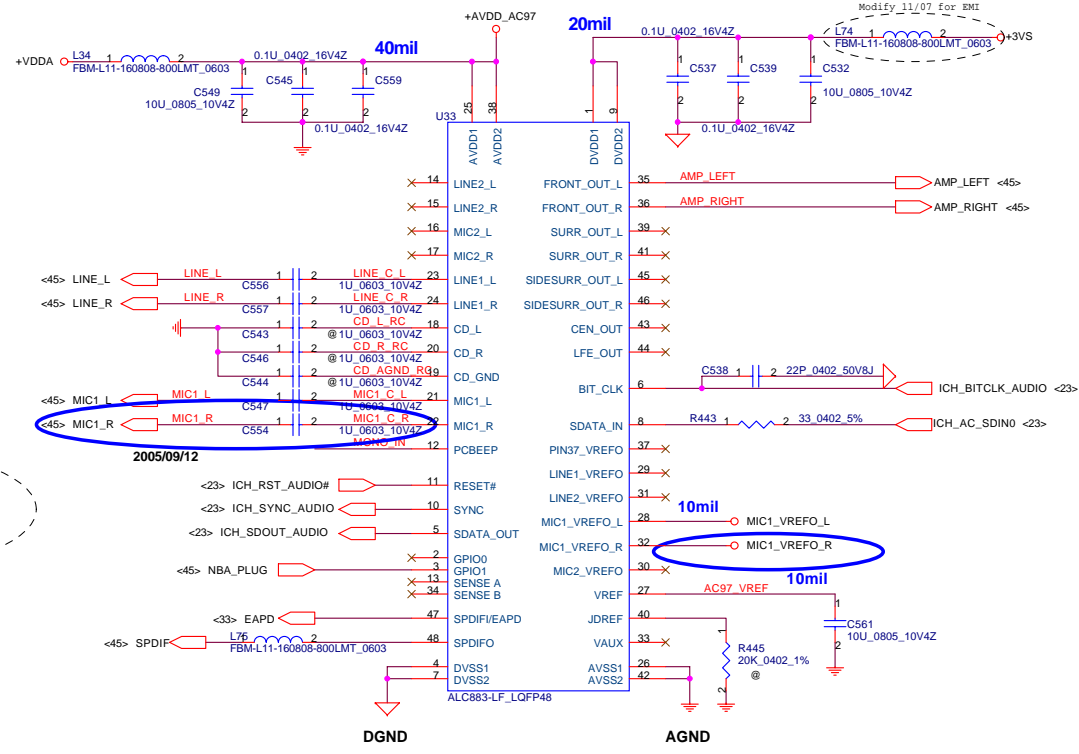


Geneva		2005/09/04		Grapevine	
	KSO16	KSO17		KSO16	KSO17
KSI0	VOL_UP	LEFT			
KSI1	RIGHT	VOL_DOWN			
KSI2	PLAY	ENTER		KSI2	PLAY
KSI3	STOP			KSI3	STOP
KSI4	NEXT			KSI4	NEXT
KSI5	REV			KSI5	REV
KSI6		RECORD			ARCADE_TV

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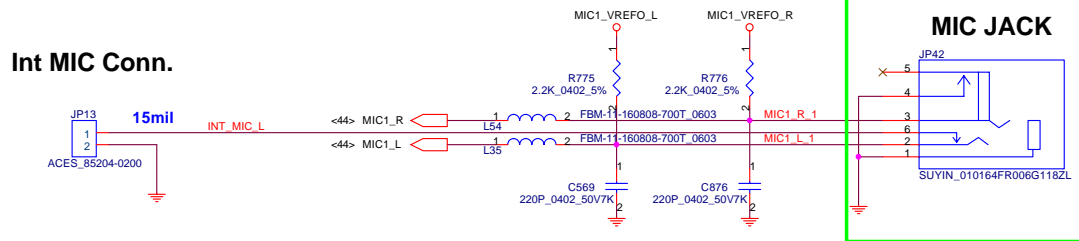
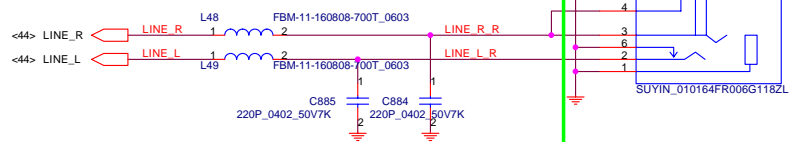
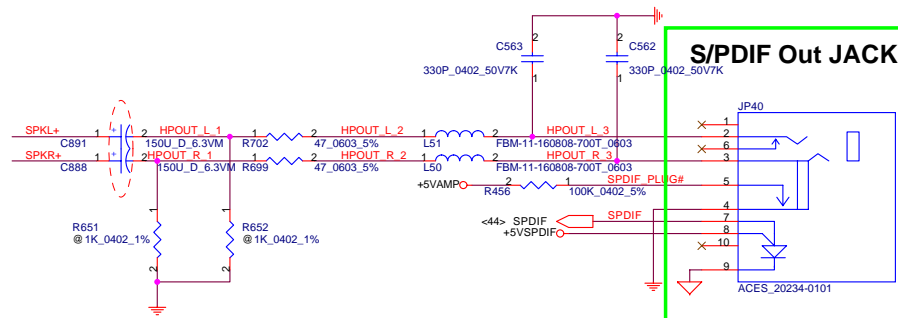
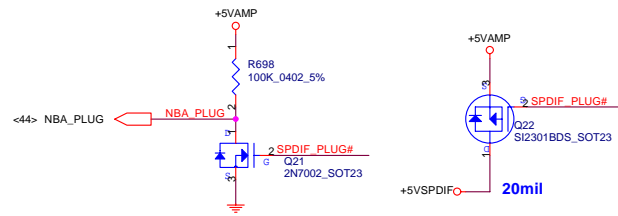
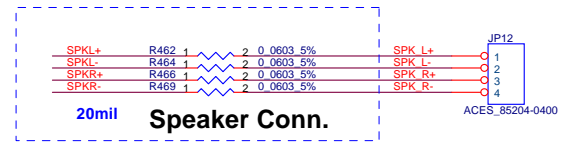
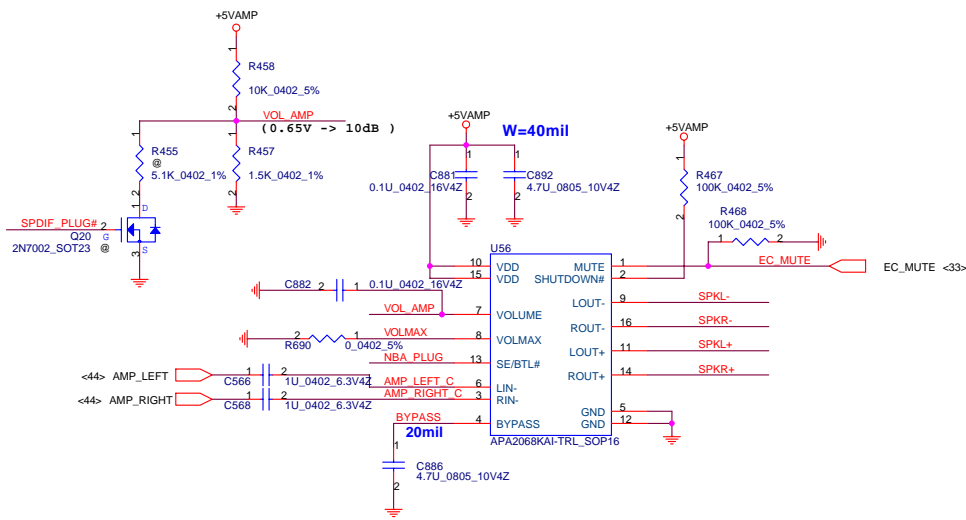


HD Audio Codec

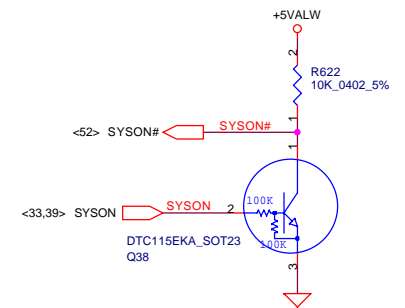
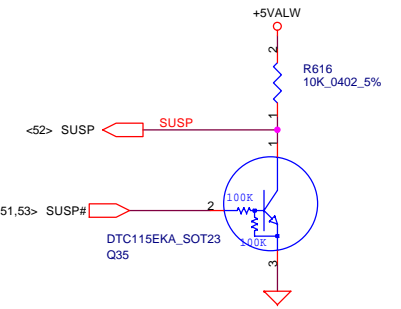
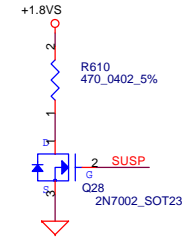
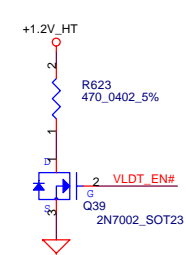
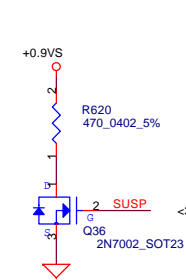
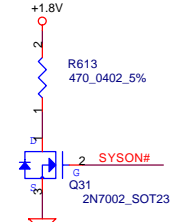
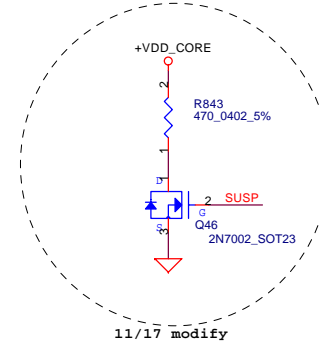
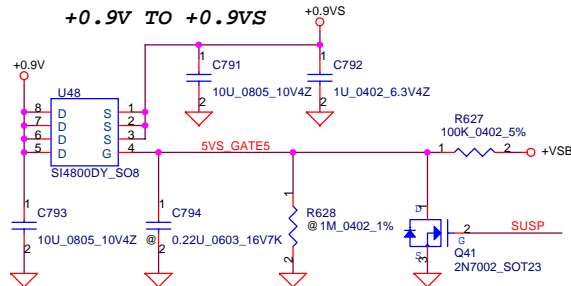
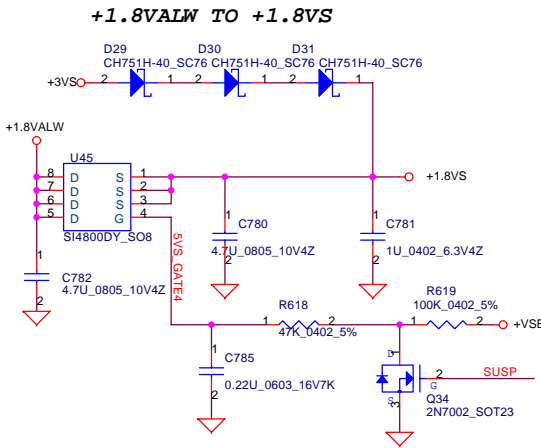
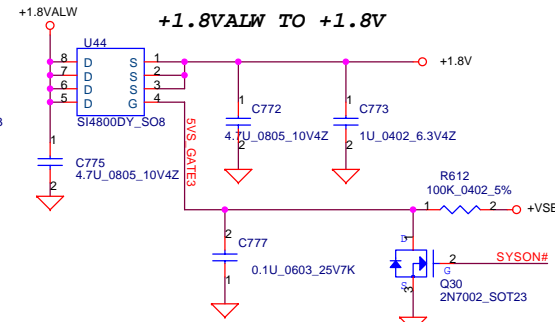
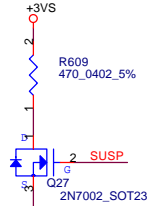
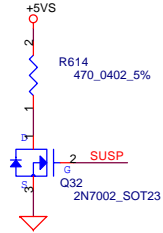
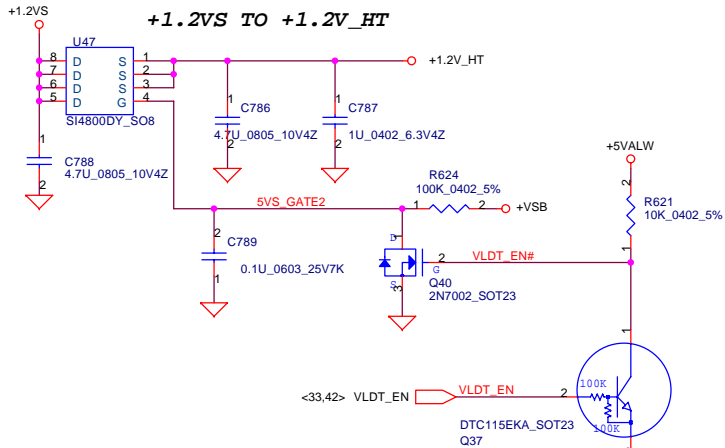
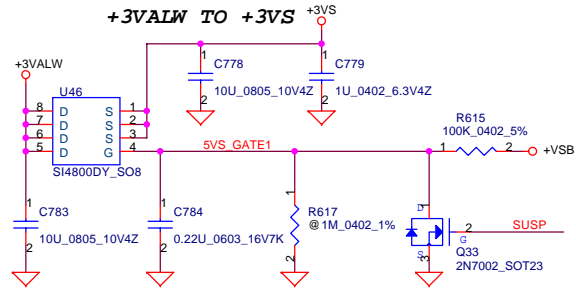
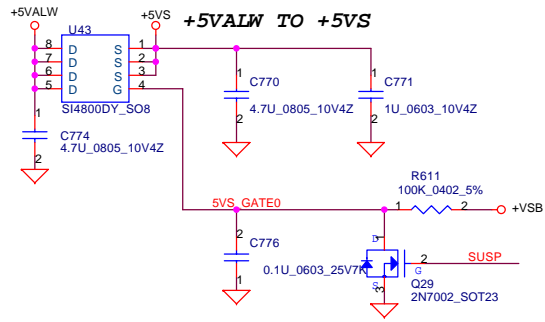


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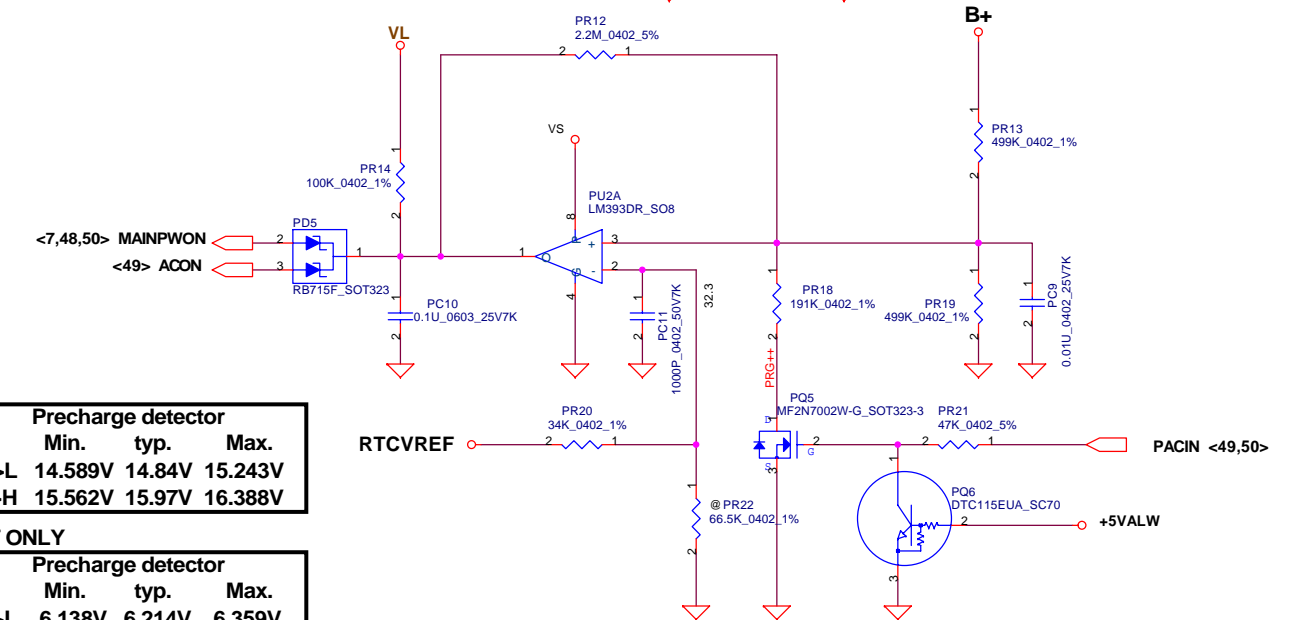
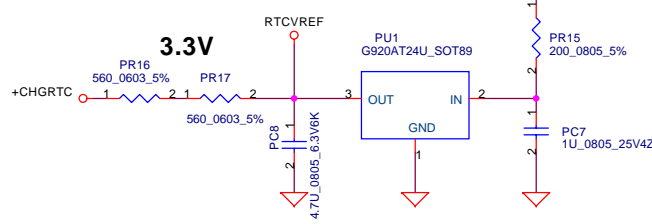
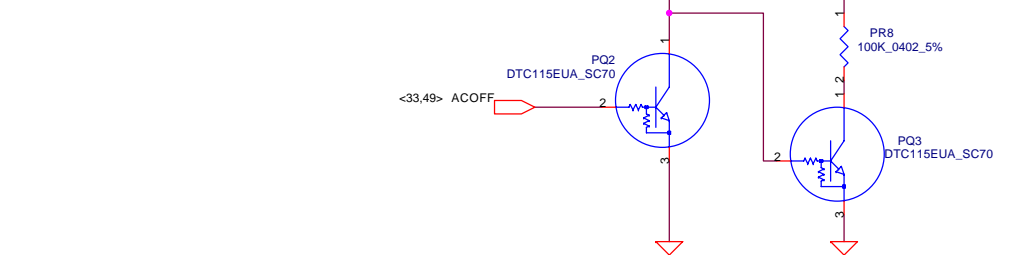
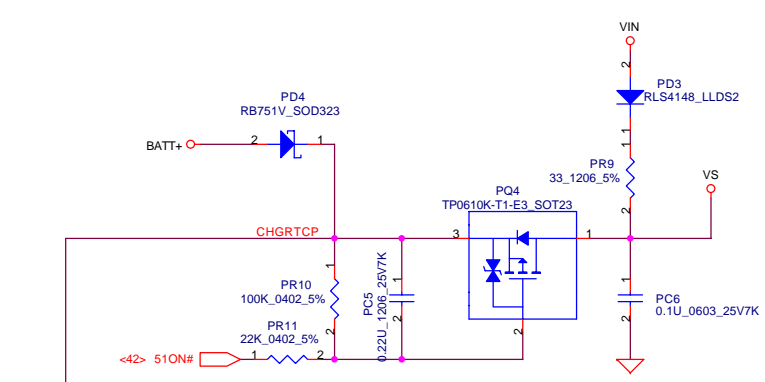
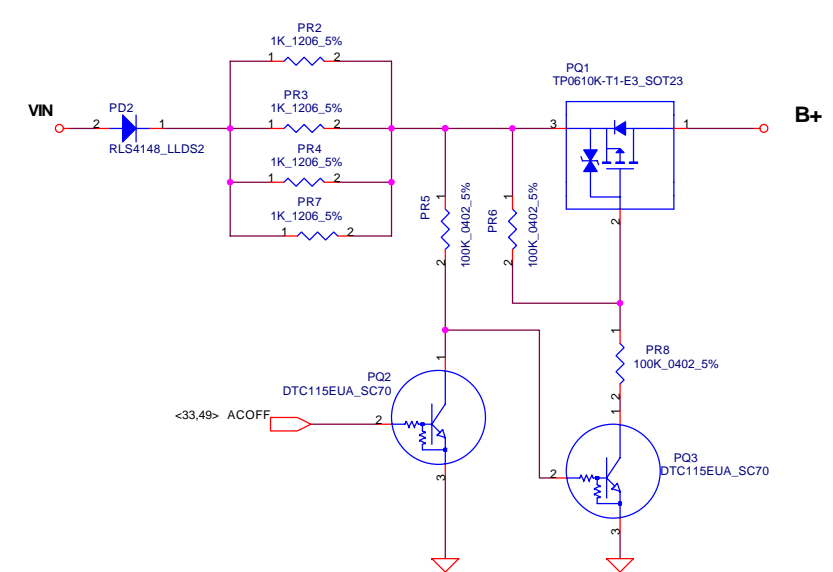
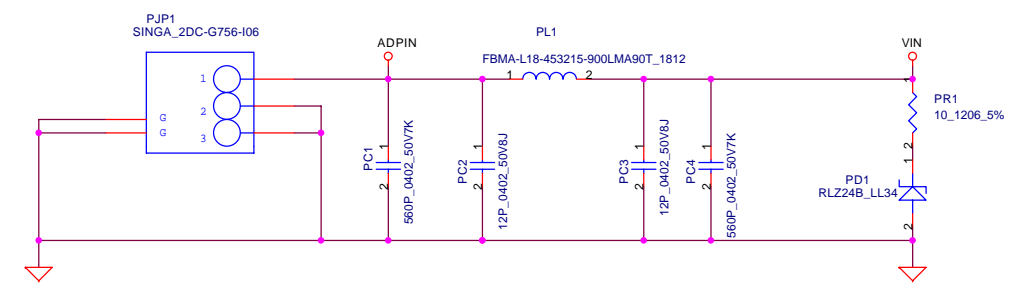
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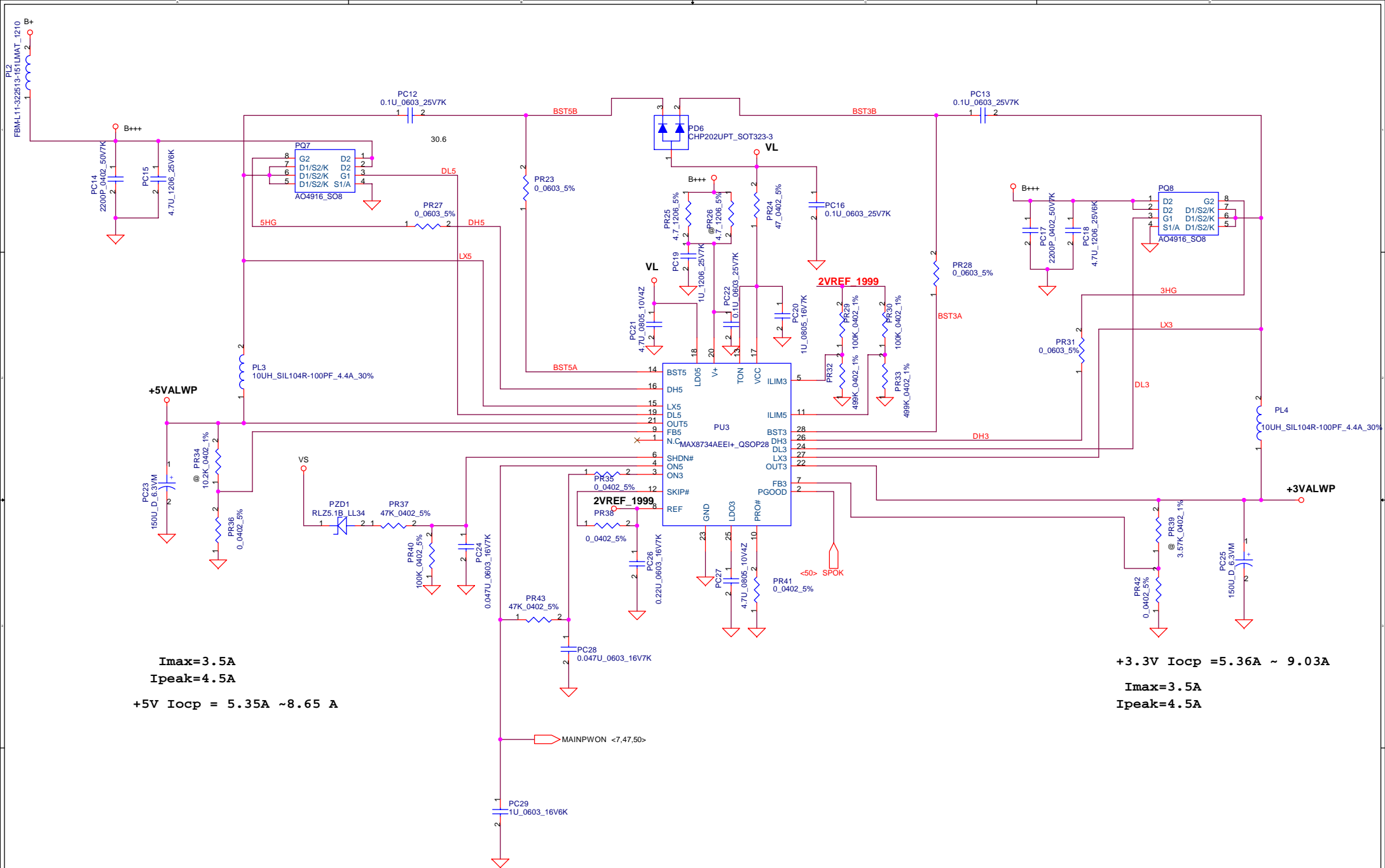
ACIN

Precharge detector			
	Min.	typ.	Max.
H->L	14.589V	14.84V	15.243V
L->H	15.562V	15.97V	16.388V

BATT ONLY

Precharge detector			
	Min.	typ.	Max.
H->L	6.138V	6.214V	6.359V
L->H	7.196V	7.349V	7.505V

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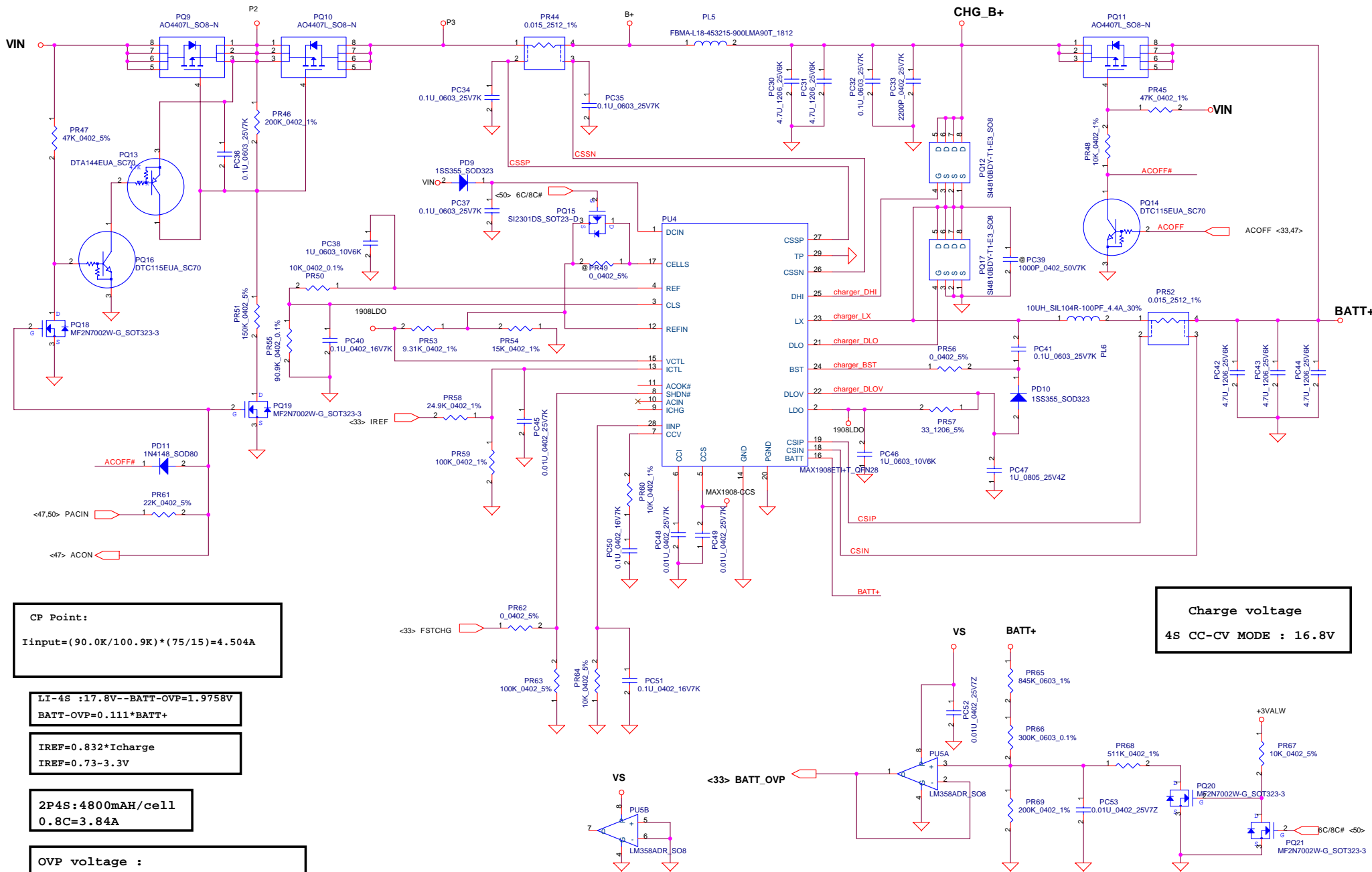


$I_{max} = 3.5A$
 $I_{peak} = 4.5A$
 $+5V I_{ocp} = 5.35A \sim 8.65A$

$+3.3V I_{ocp} = 5.36A \sim 9.03A$
 $I_{max} = 3.5A$
 $I_{peak} = 4.5A$

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I_{adp}=0~4.5A (90W)



CP Point:
 $I_{input} = (90.0K/100.9K) * (75/15) = 4.504A$

LI-4S : 17.8V--BATT-OVP=1.9758V
BATT-OVP=0.111*BATT+

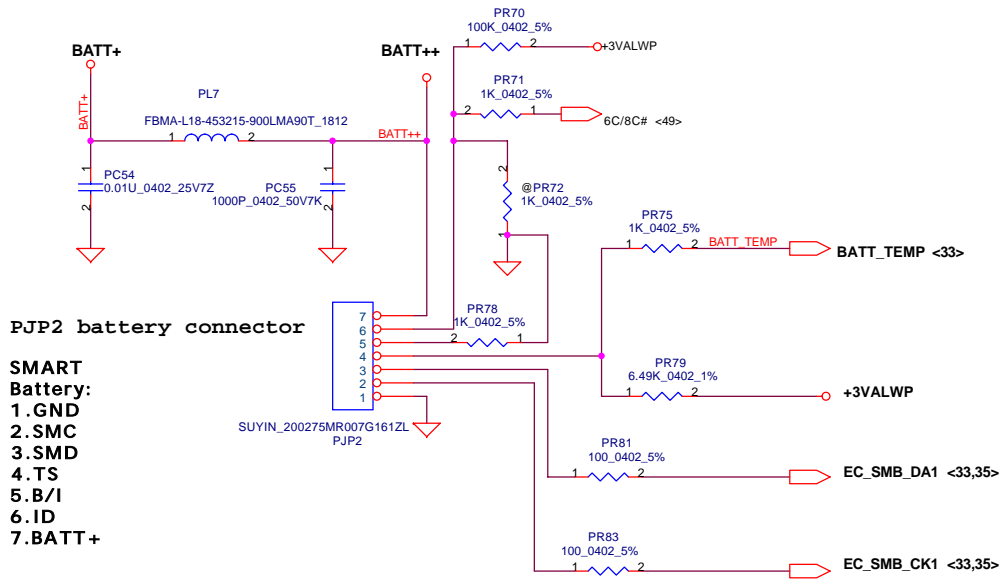
IREF=0.832*Icharge
IREF=0.73~3.3V

2P4S:4800mAh/cell
0.8C=3.84A

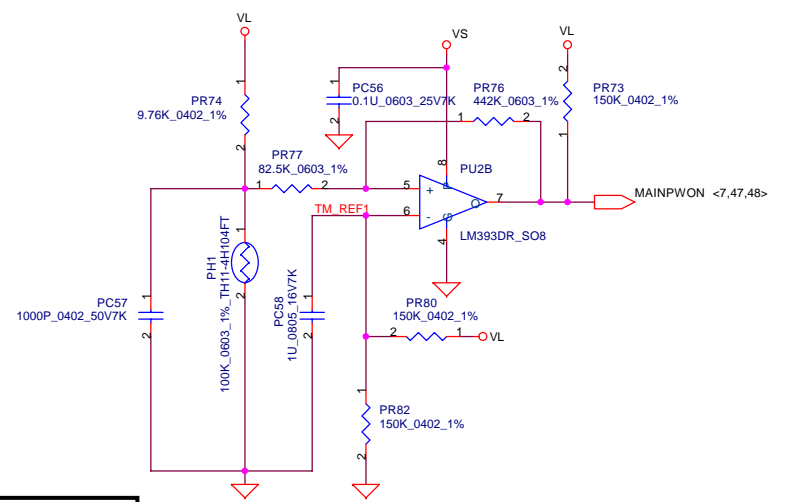
OVP voltage :
LI-3S : 17.8V---BATT-OVP=1.9758V
BATT-OVP=0.111*BATT+

Charge voltage
4S CC-CV MODE : 16.8V

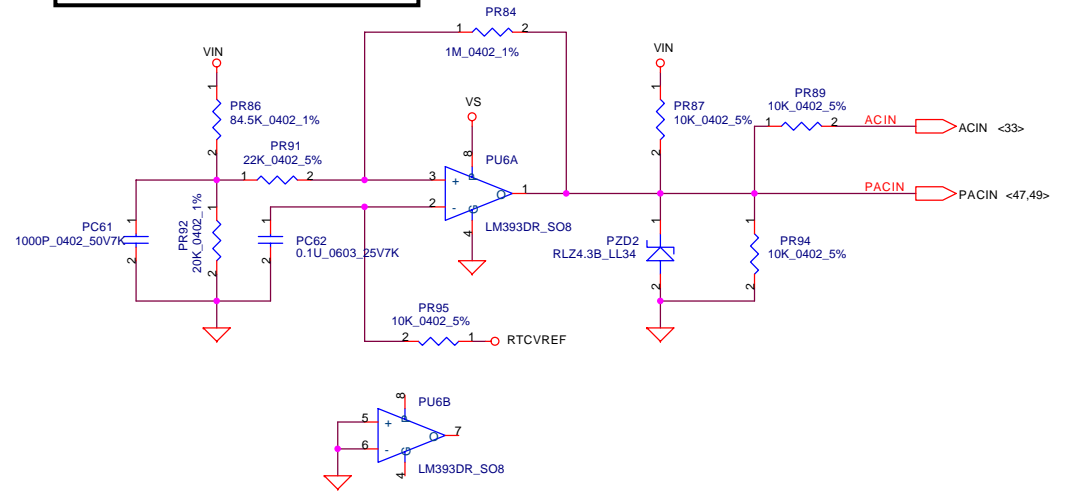
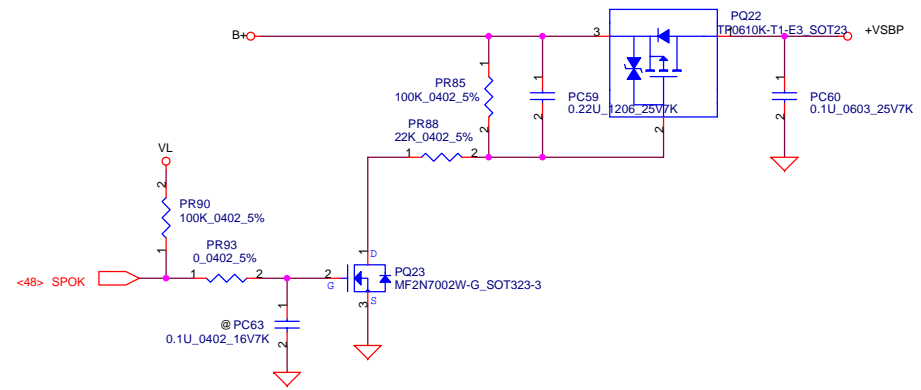
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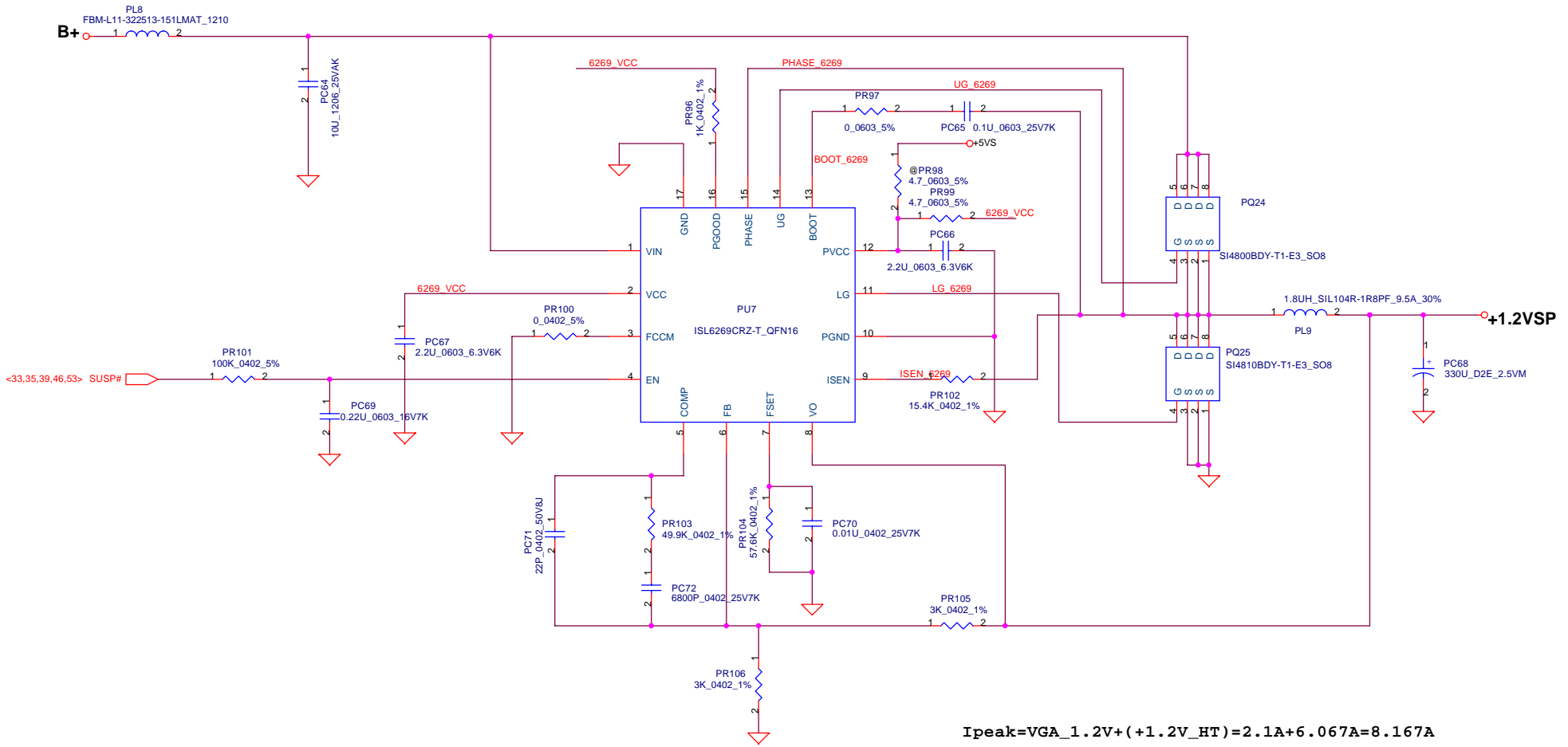
PH1 under CPU bottom side :
 CPU thermal protection at 90 degree C
 Recovery at 70 degree C



Vin Detector
 Min. typ. Max.
 H->L 16.976V 17.257V 17.728V
 L->H 17.430V 17.901V 18.384V

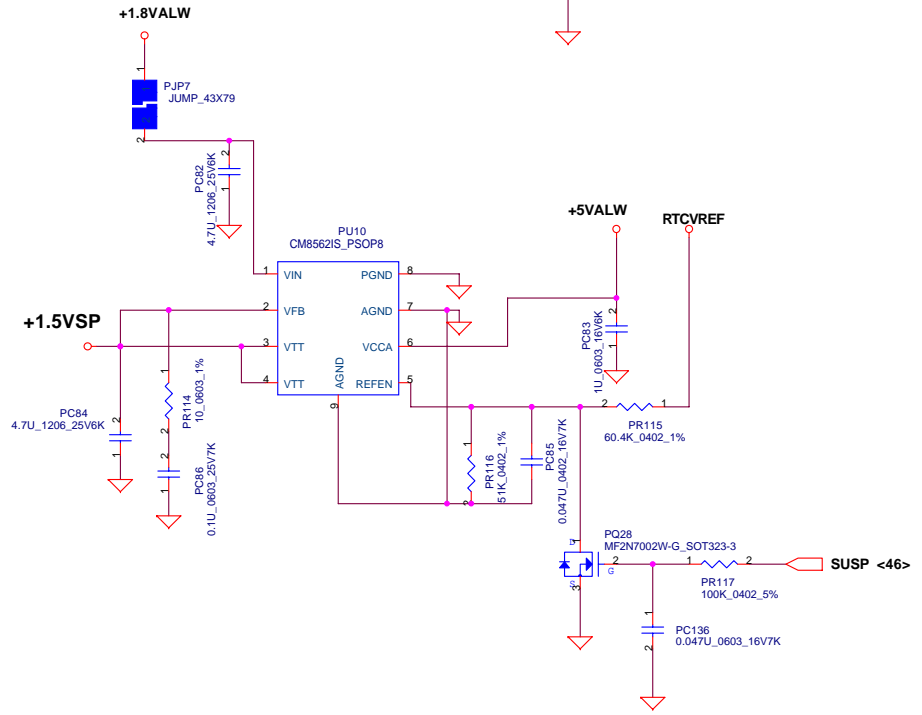
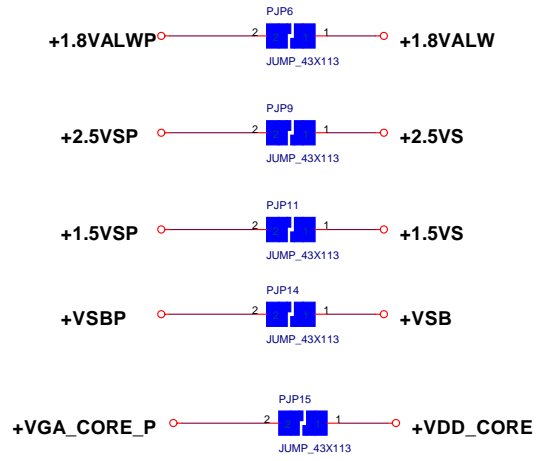
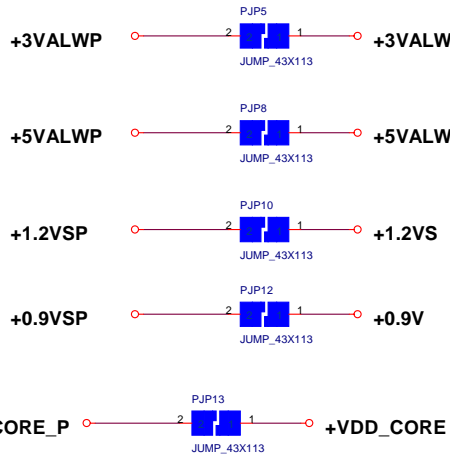
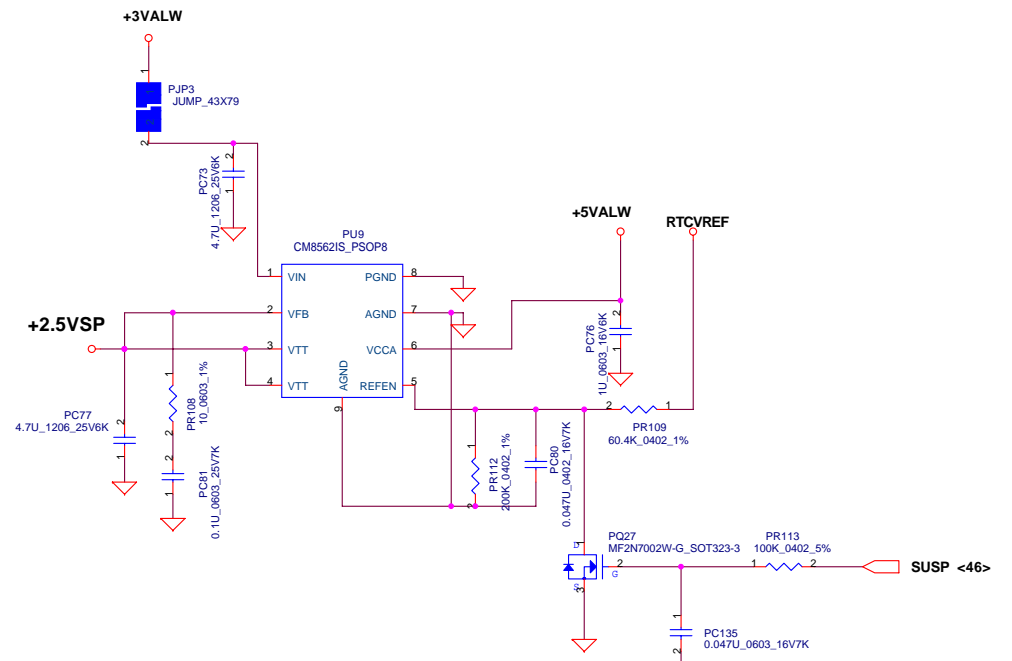
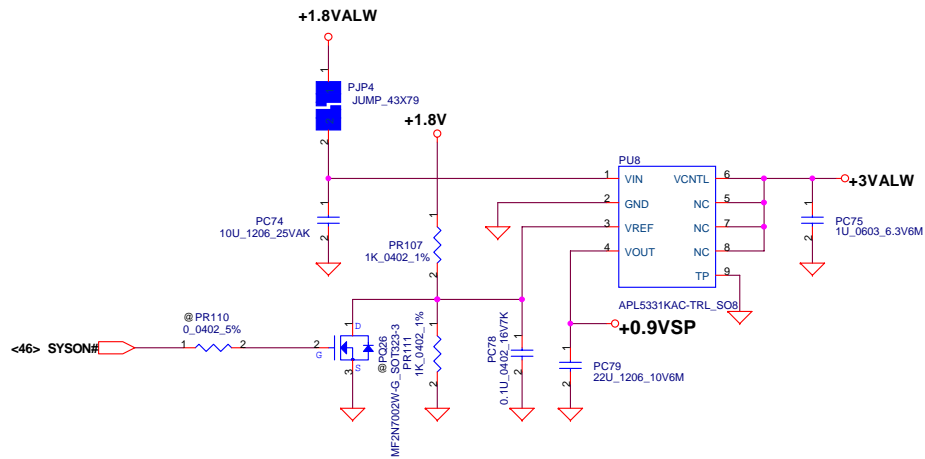


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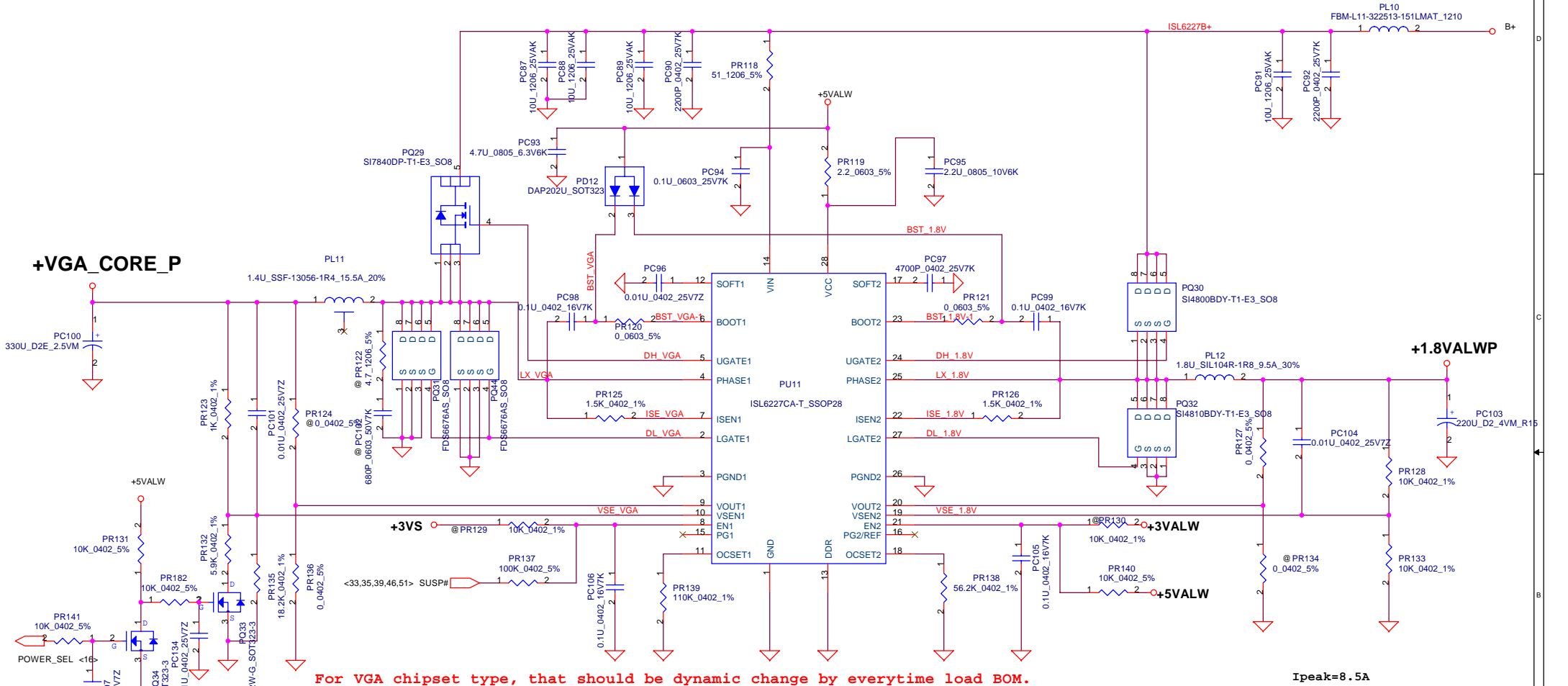
$I_{peak} = VGA_1.2V + (+1.2V_HT) = 2.1A + 6.067A = 8.167A$
 $I_{max} = 5.7A$
 $I_{ocmin} = 9.23A$
 $I_{ocmax} = 19.23A$

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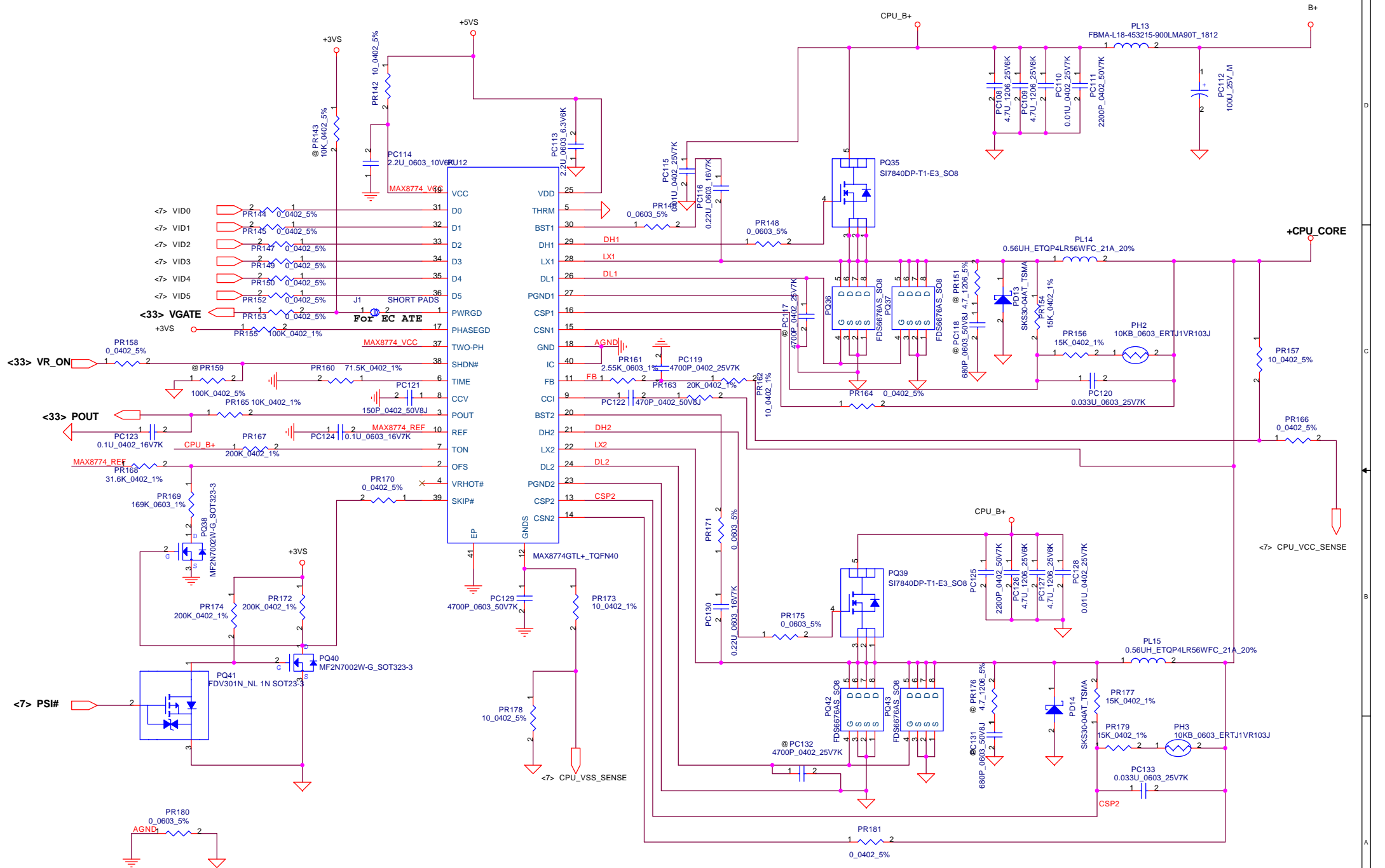


For VGA chipset type, that should be dynamic change by everytime load BOM.

Ipeak=16.40A
 Imax=12.25A
 Iocpmin=22.07A
 Iocpmax=38.67A

Ipeak=8.5A
 Imax=6A
 Iocpmin=8.76A
 Iocpmax=13.46A

	M52PG	M54P	M56P
	PR123=1K	PR123=1K	PR123=1K
	PR135=18.2K	PR135=8.87K	PR135=18.2K
	PR132=17.8K	PR132=8.87K	PR132=5.9K
	L=1.000V	L=1.102V	L=1.102V
	H=0.949V	H=1.001V	H=0.949V



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