

Compal confidential

Hamburg 10AD

NALAE LA-6053P Schematics Document

Mobile AMD S1G4/ RS880M / SB820M

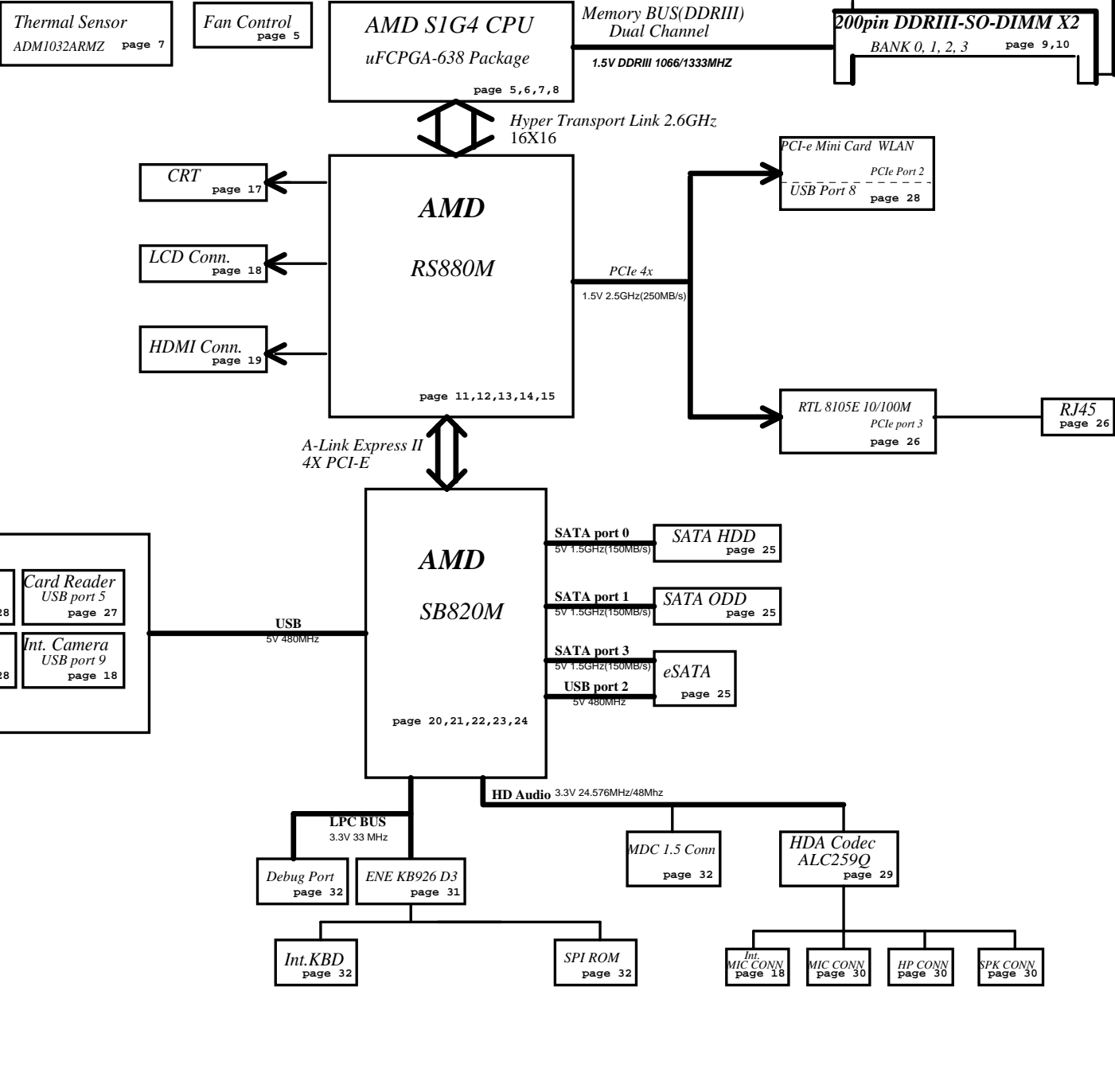
2009-02-04 Rev. 0.2

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				Date:	Wednesday, May 19, 2010
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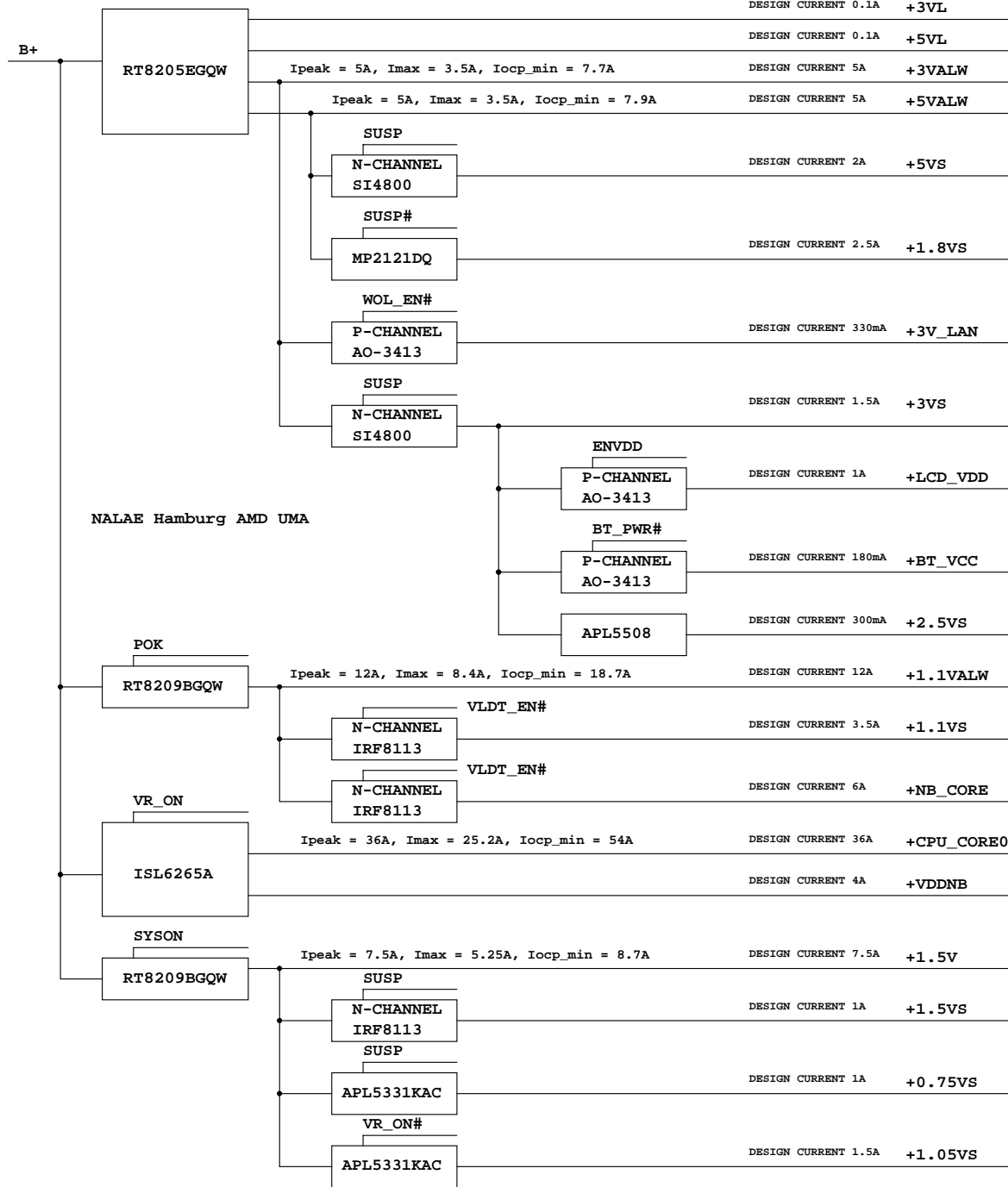
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Model Name : NALAE

File Name : LA-6053P



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NALAE Hamburg AMD UMA

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Voltage Rails

O : ON
X : OFF

power plane State	B+ +3VL +5VL +RTCVCC	+5VALW +3VALW +1.1VALW	+1.5V	+5VS +3VS +2.5VS +1.8VS +1.5VS +1.1VS +1.05VS +0.75VS +VDDNB +CPU_CORE +NB_CORE
S0	O	O	O	O
S1	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X

I2C / SMBUS ADDRESSING

DEVICE	HEX	ADDRESS
DDR SO-DIMM 0	A0	1 0 1 0 0 0 0 0
DDR SO-DIMM 1	A2	1 0 1 0 0 0 1 0
CLOCK GENERATOR (EXT.)	D2	1 1 0 1 0 0 1 0

EC SM Bus1 address

Device	HEX	Address
Smart Battery	16H	0001 011X b
HDMI-CEC	34H	0011 010X b
EC KB926D3		

EC SM Bus2 address

Device	HEX	Address
ADH1032-1 CPU	98H	1001 100X b
ADH1032-2 VGA	9AH	1001 101X b
EC KB926D3		

Platform	CPU	NB	VGA	SB	Comment
Danube	S1G4	RS880M	NA	SB820M	

@ : just reserve , no build

BTO (Build-To-Order) Option Table

Function	BLUE TOOTH	HDMI			
Description	(B)	(Y)			
Explain					
BTO	BT@	H@			

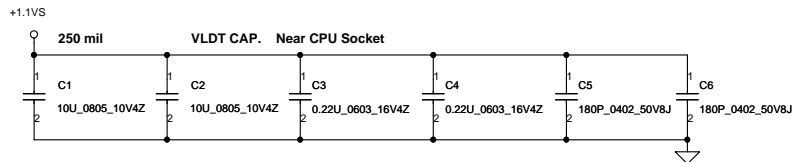
SMBUS Control Table

	SOURCE	BATT	CPU THERMAL SENSOR	SODIMM I / II	CLK GEN	WLAN	LCD DDC ROM	HDMI DDC ROM
EC_SMB_CK1 EC_SMB_DA1	KB926	V						
EC_SMB_CK2 EC_SMB_DA2	KB926		V					
I2C_CLK I2C_DATA	RS880M						V	
DDC_CLK0 DDC_DATA0	RS880M							V
SCL0 SDA0	SB820			V	V			
SCL1 SDA1	SB820					V		

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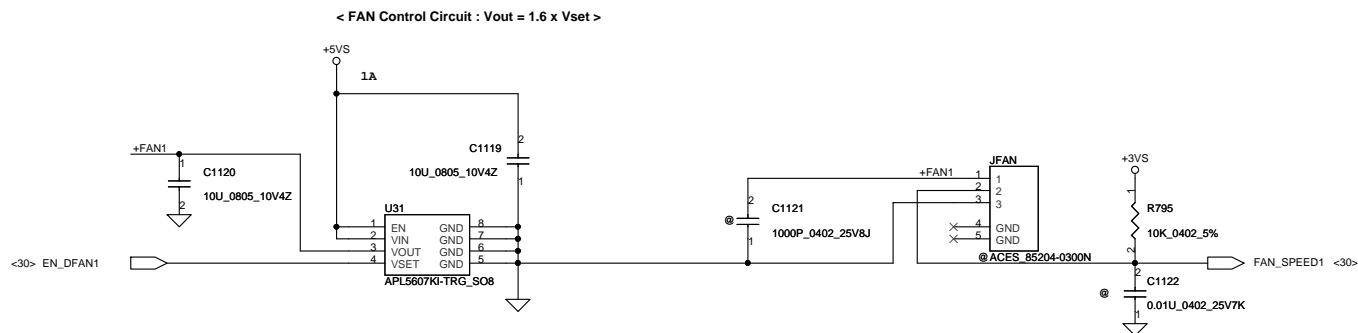
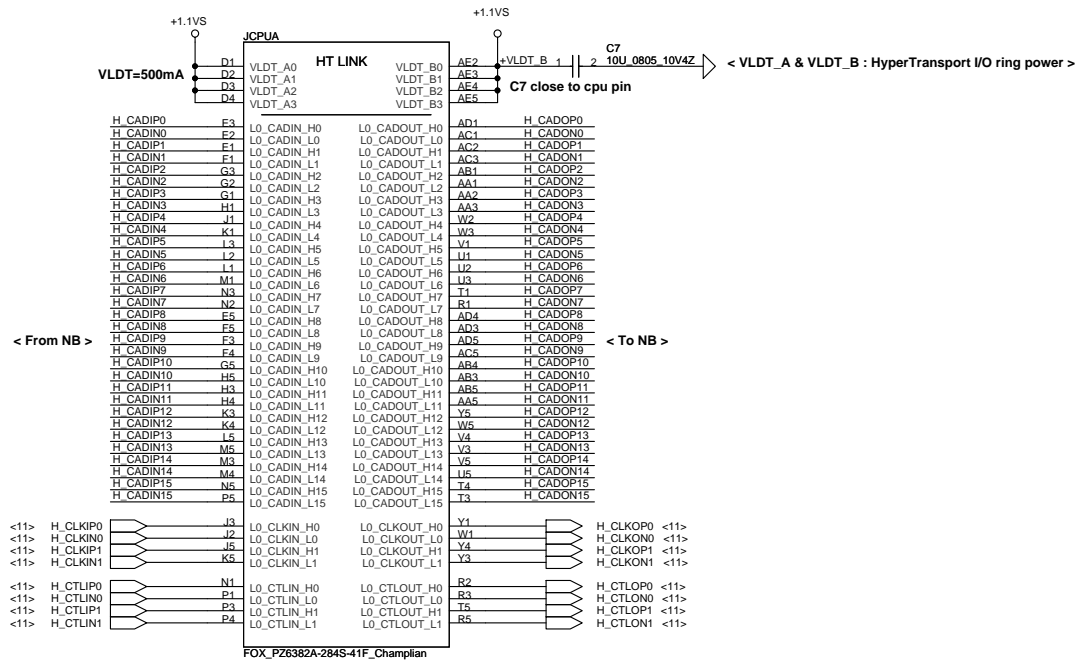


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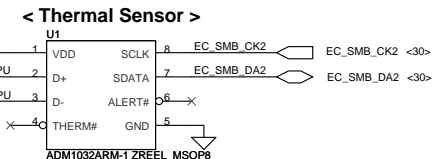
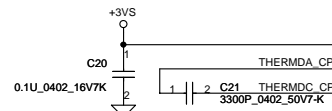
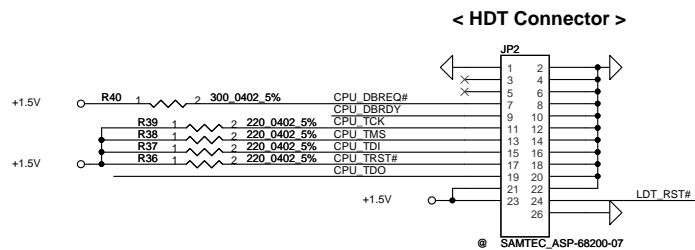
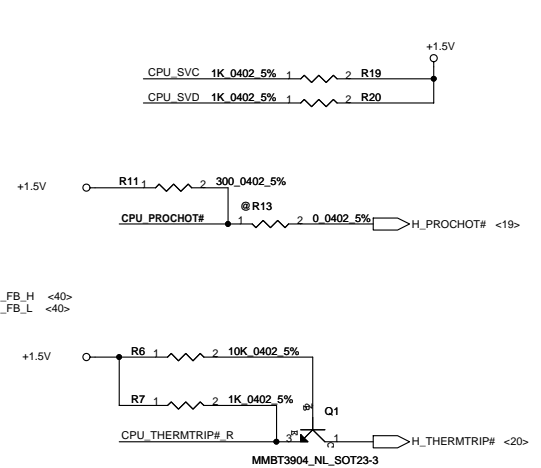
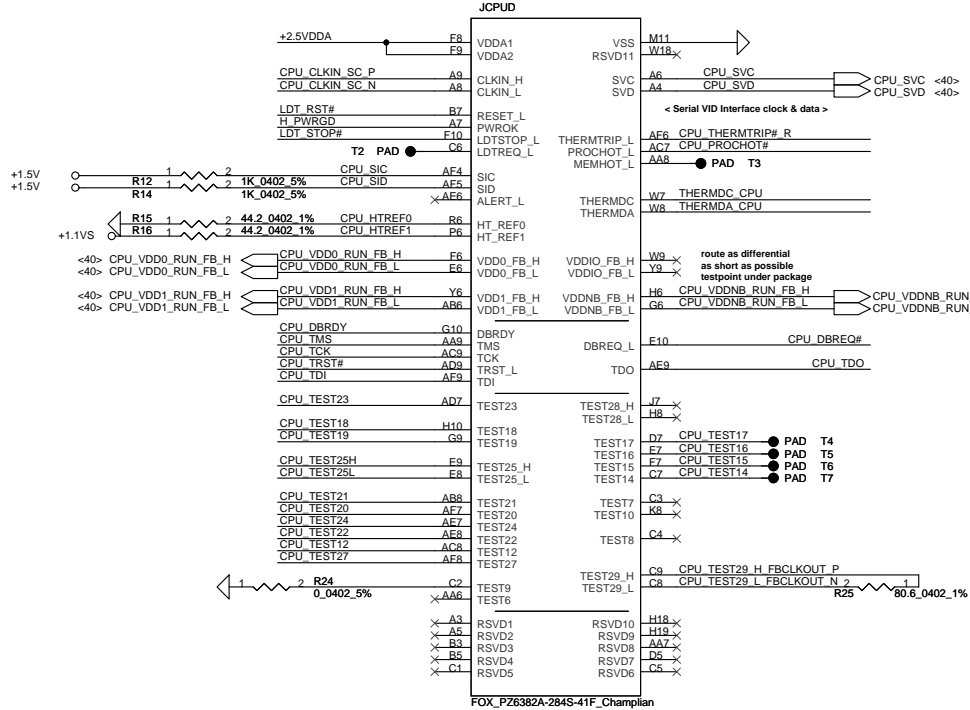
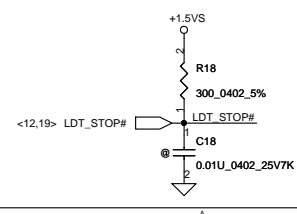
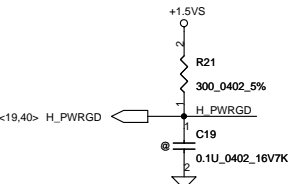
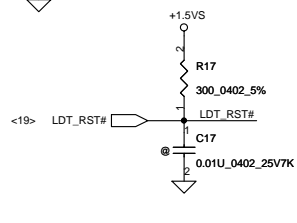
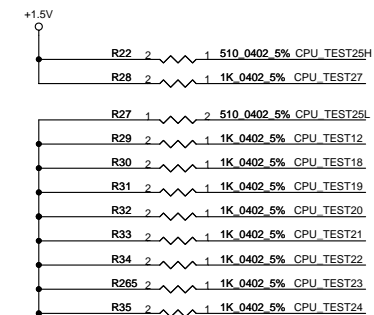
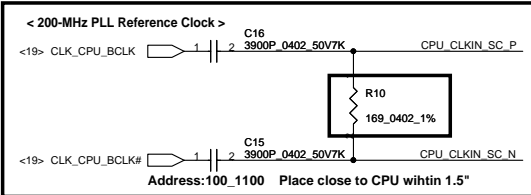
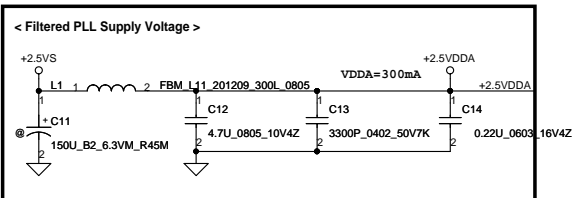
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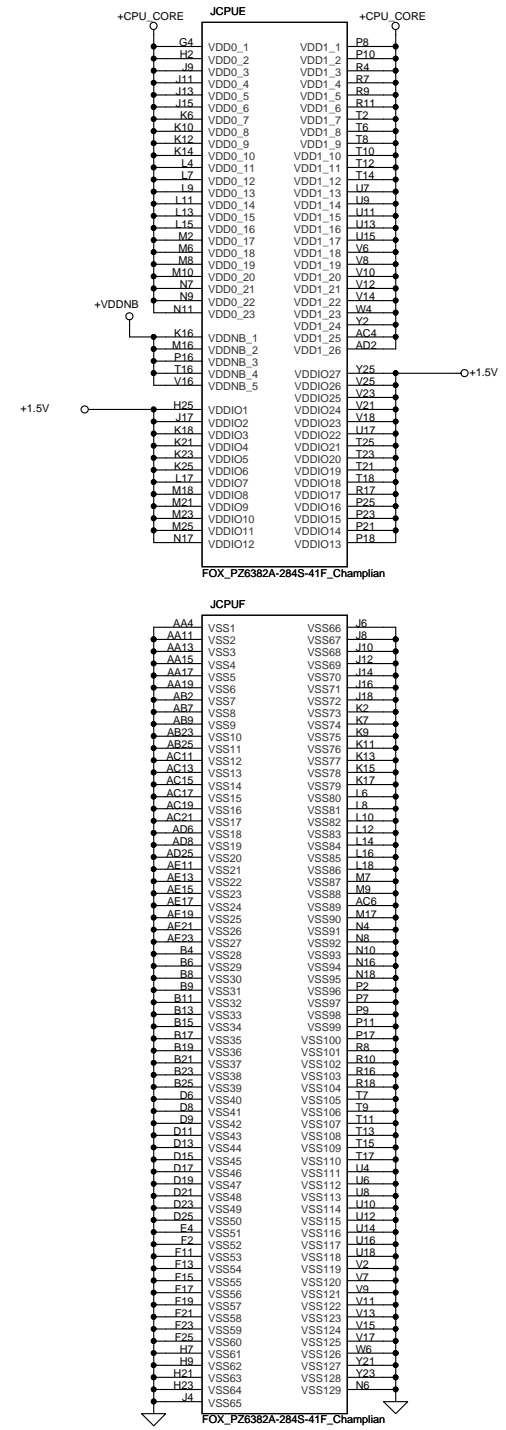
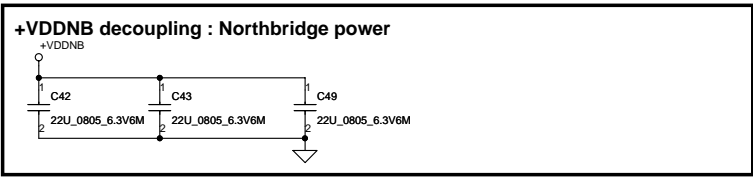
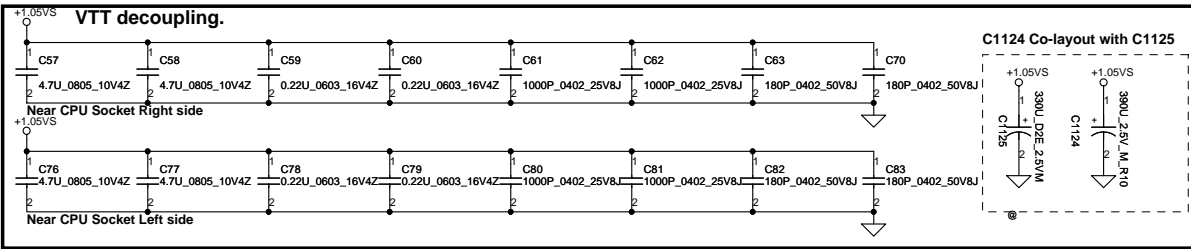
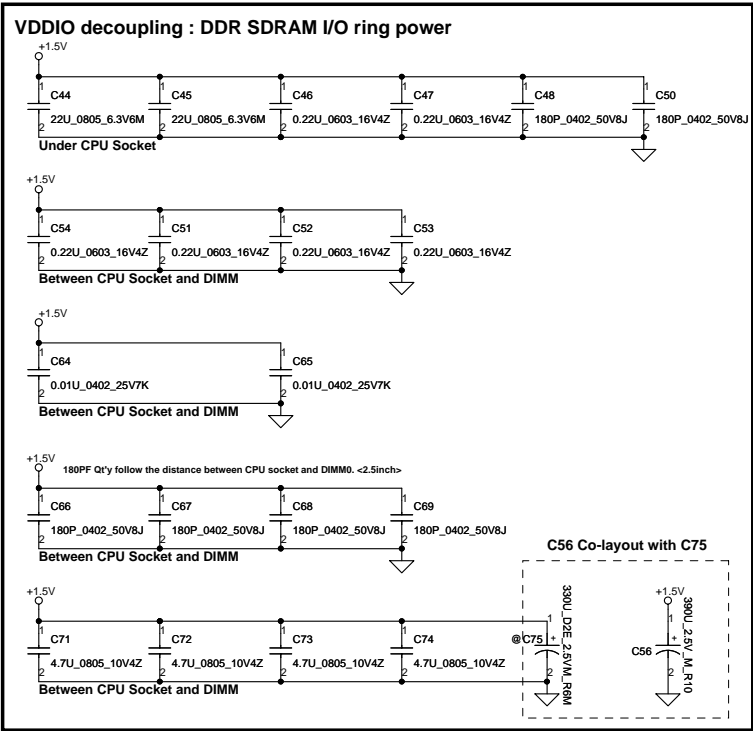
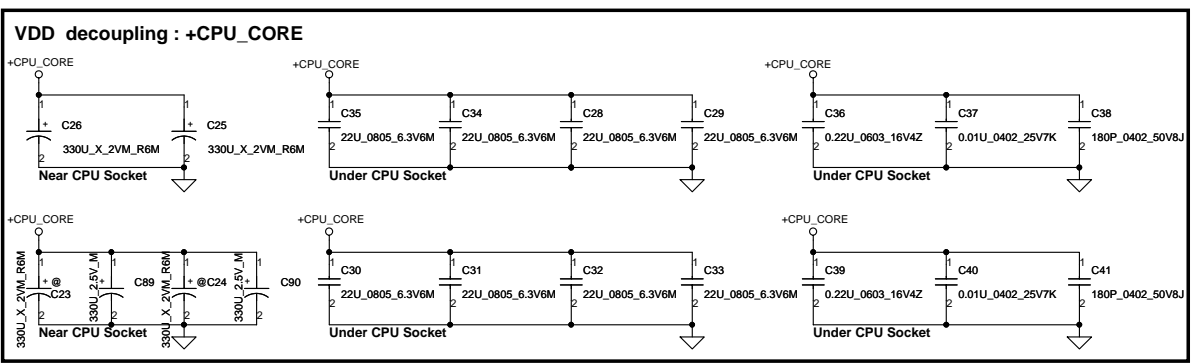
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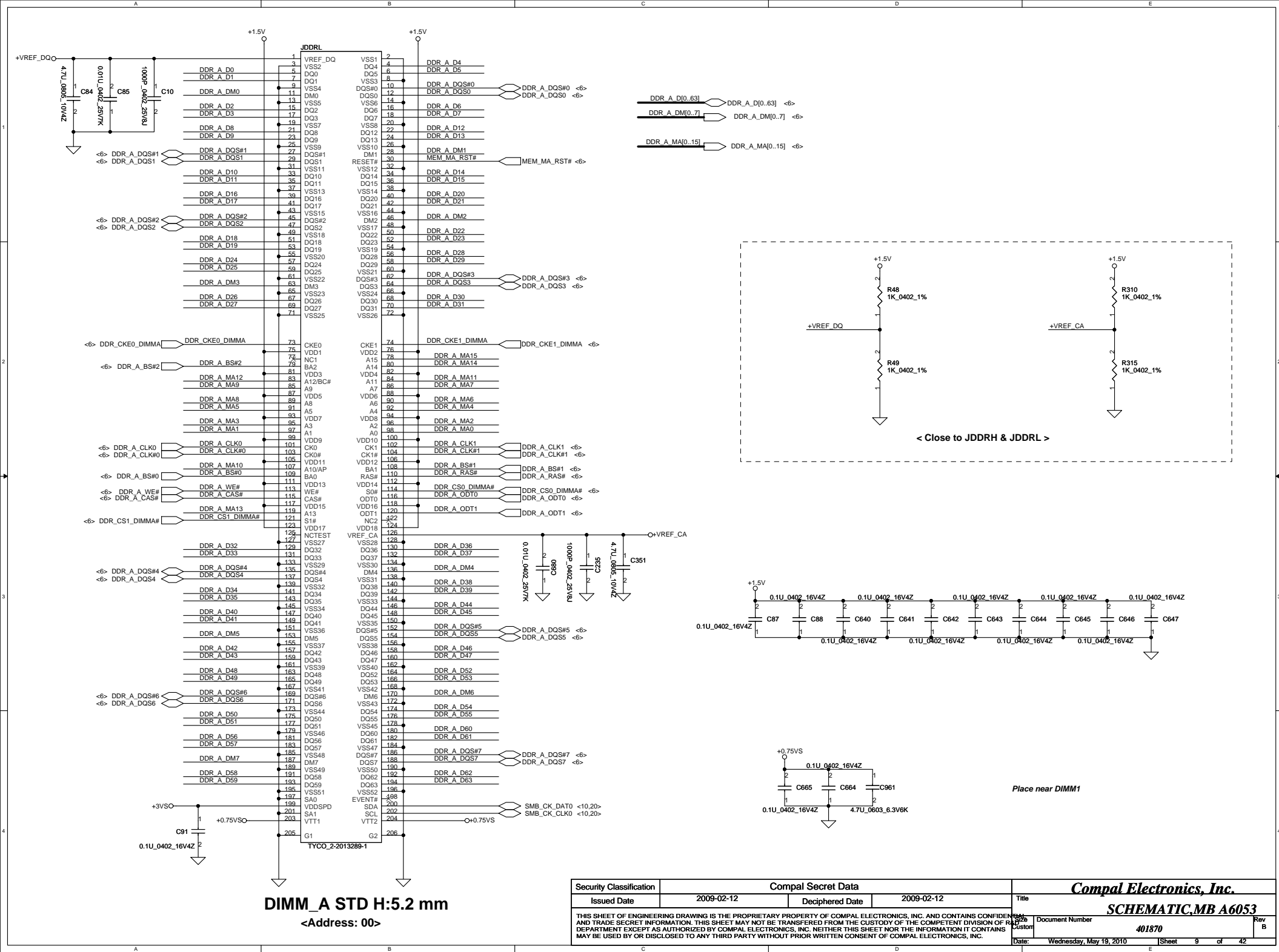
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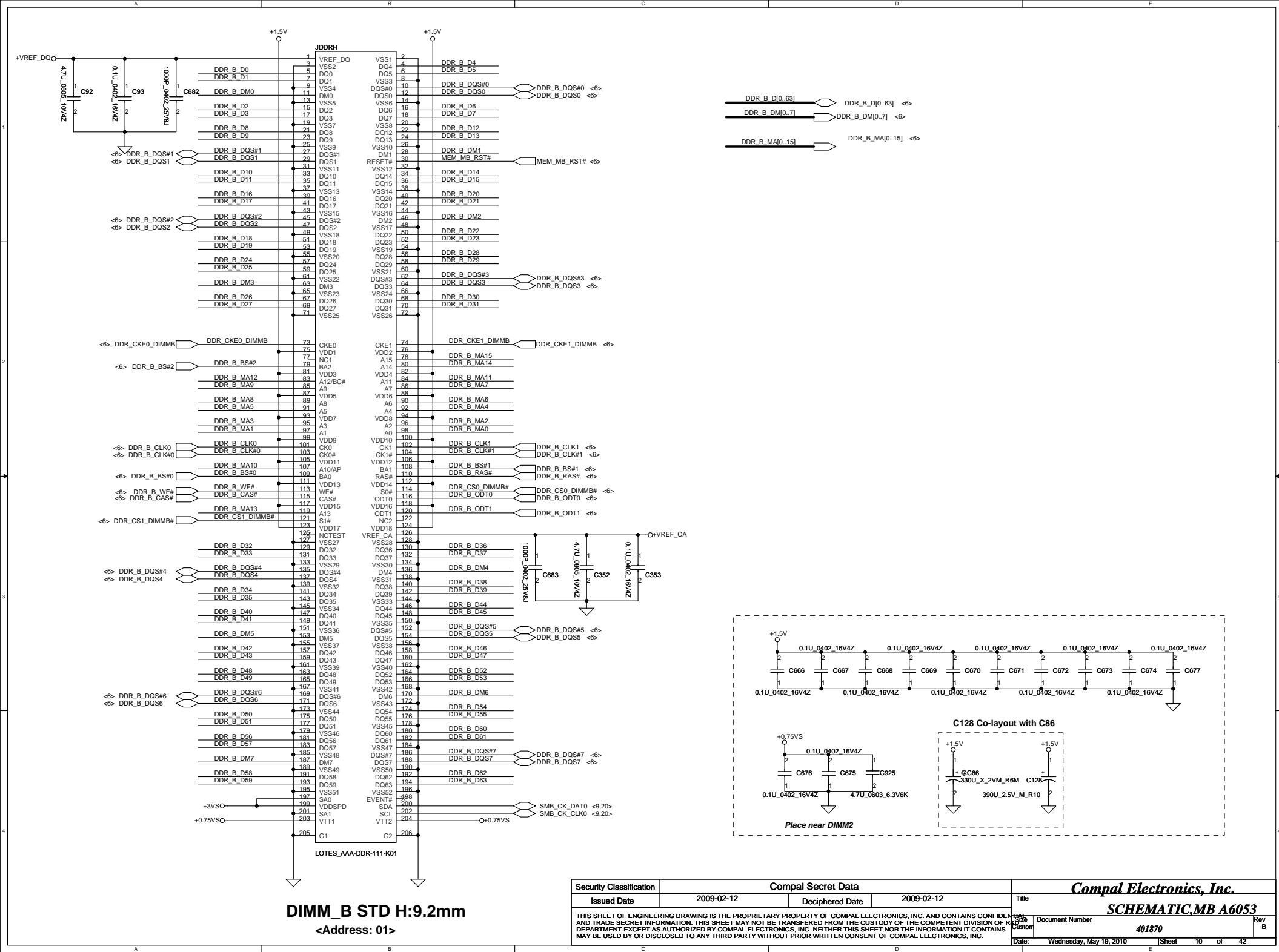


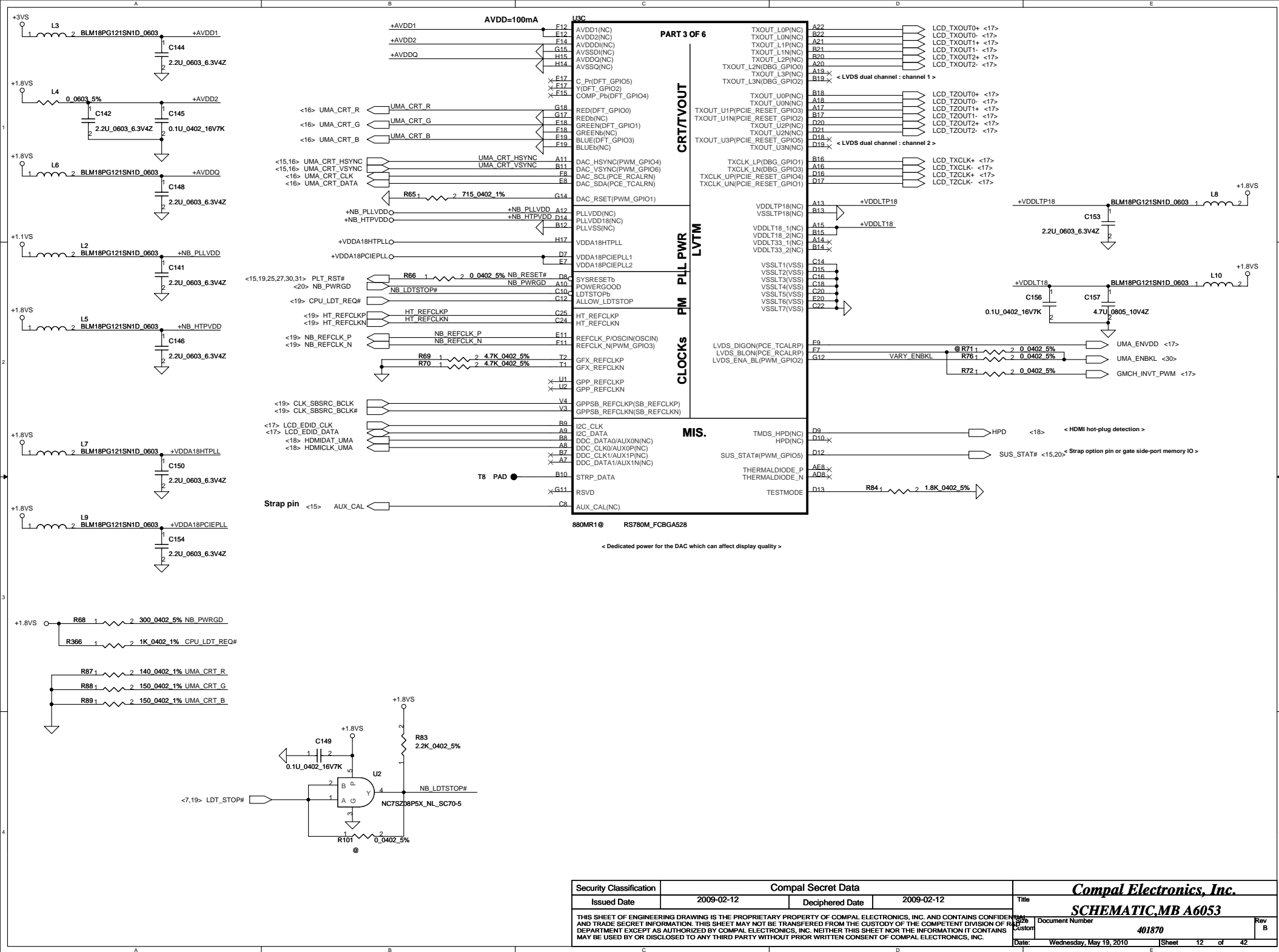
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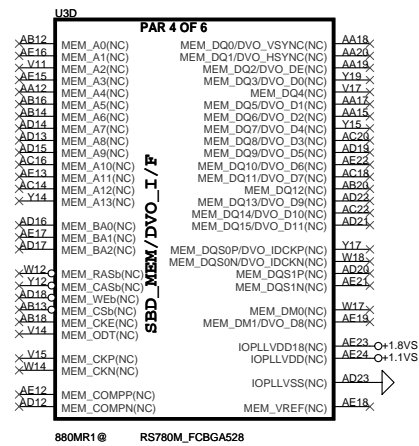
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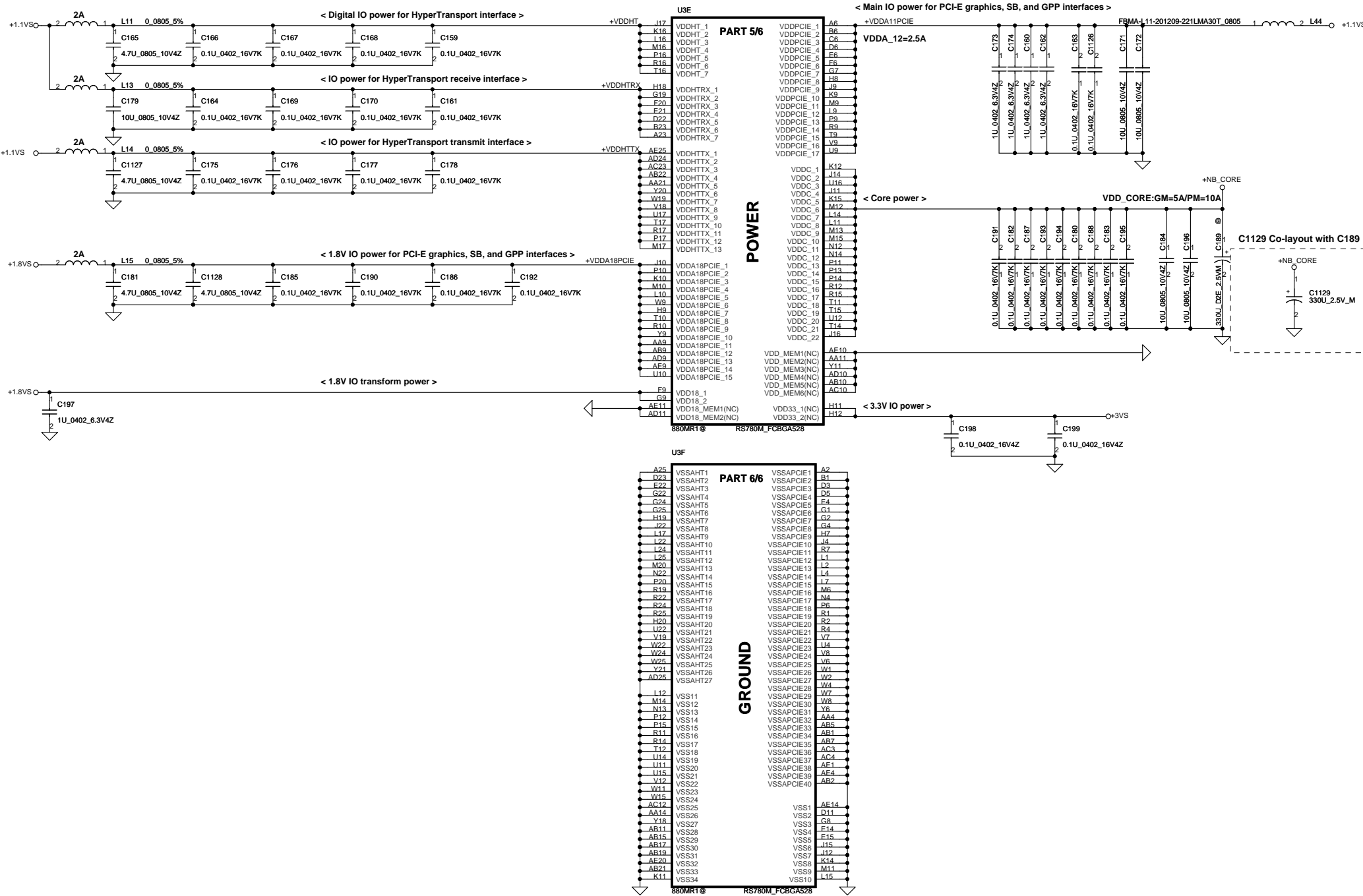




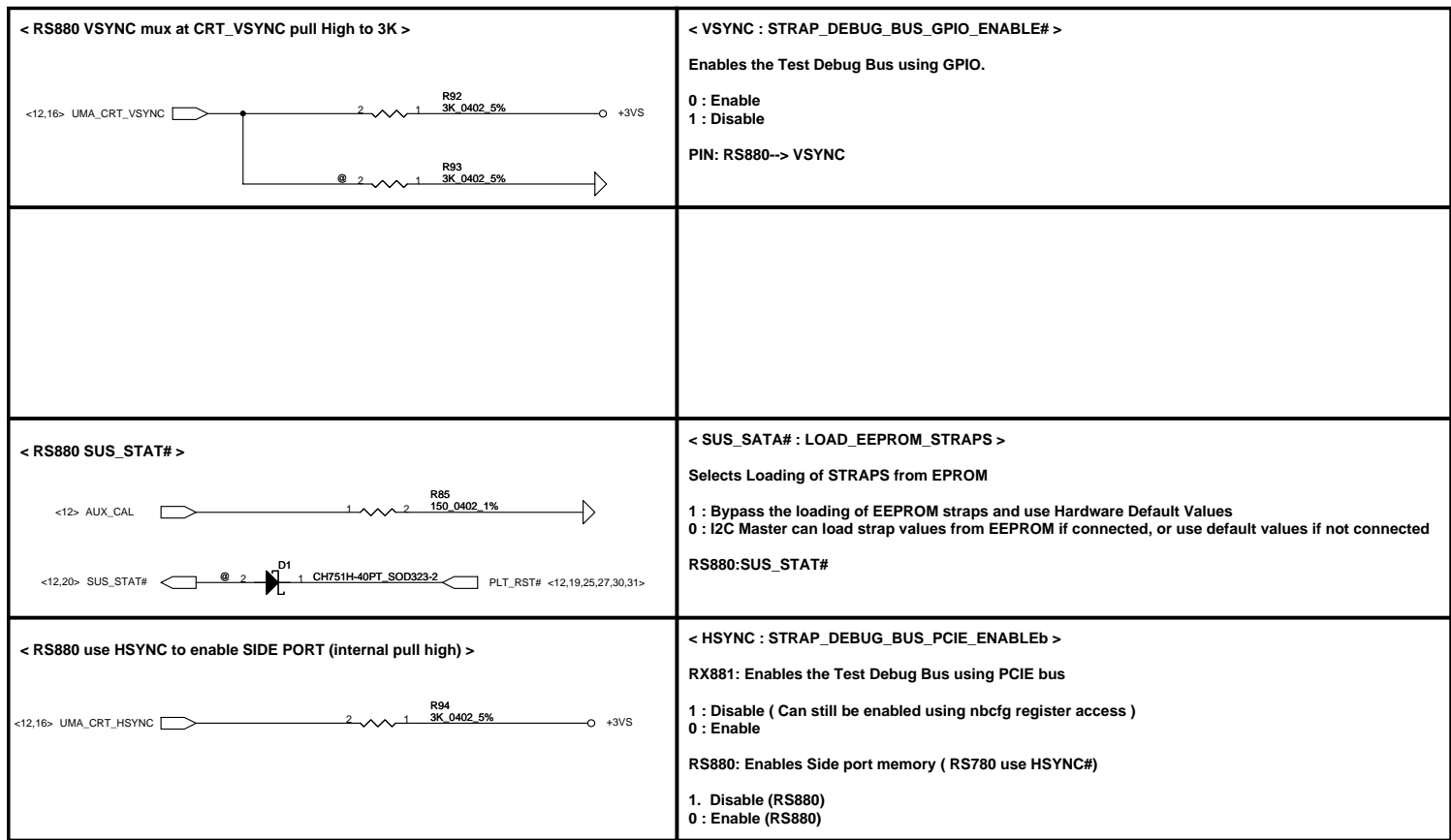
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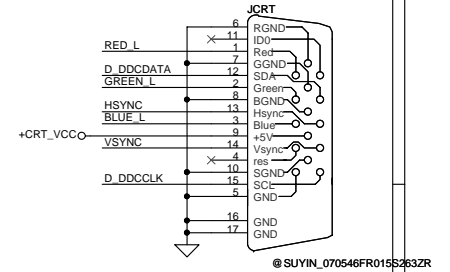
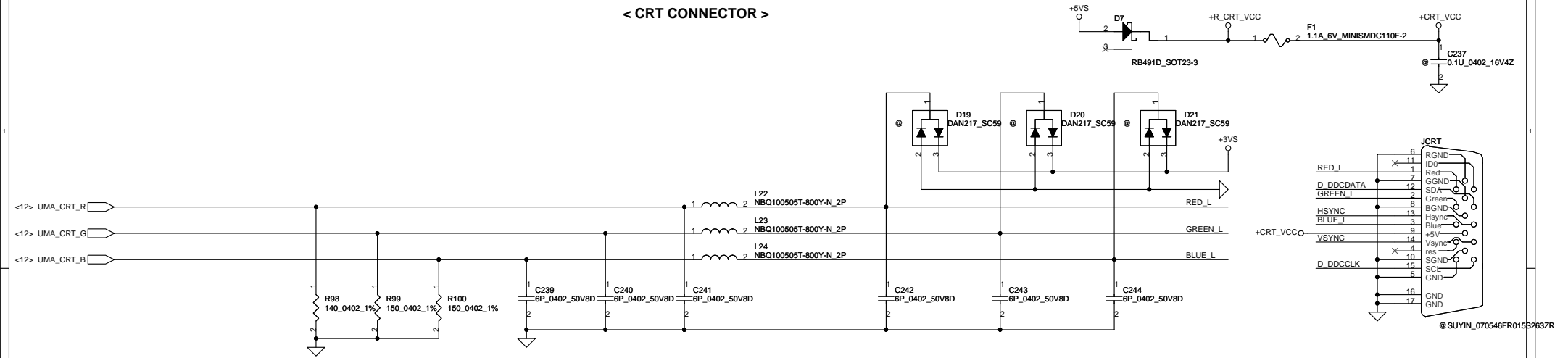
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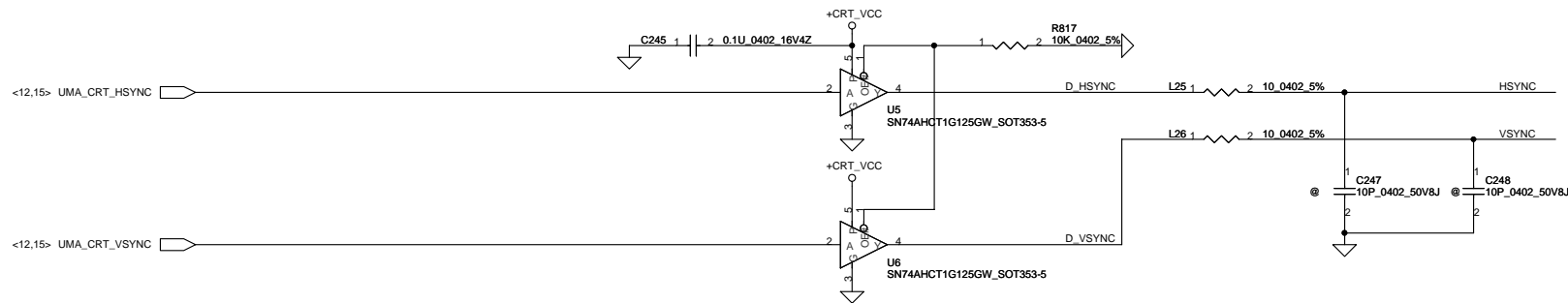
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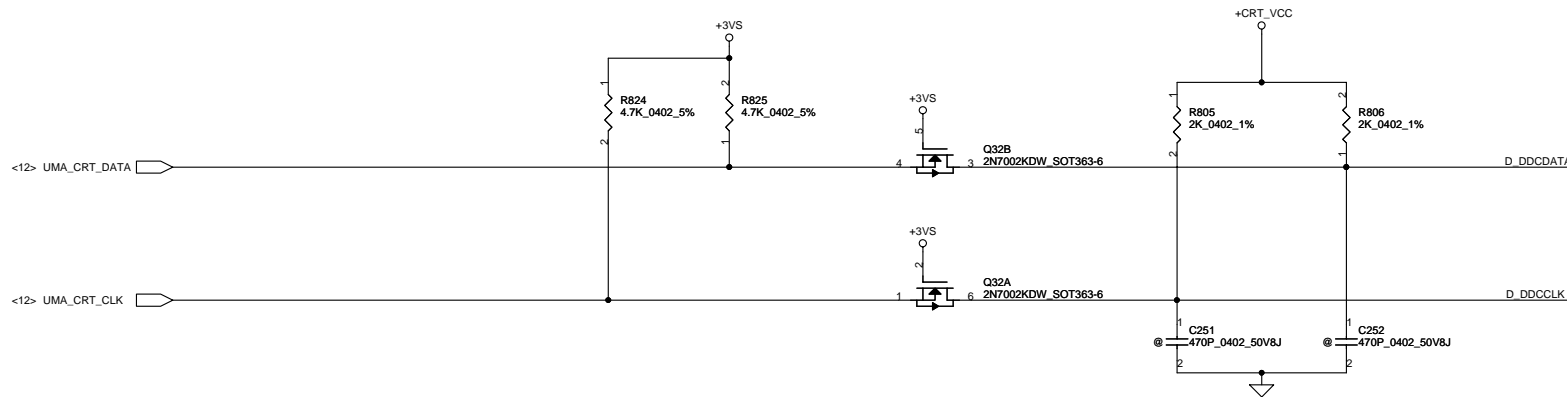
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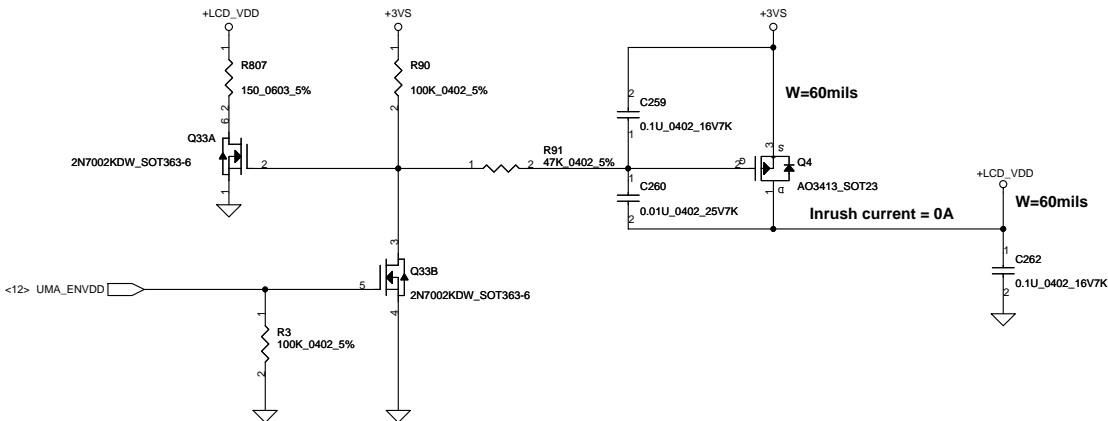
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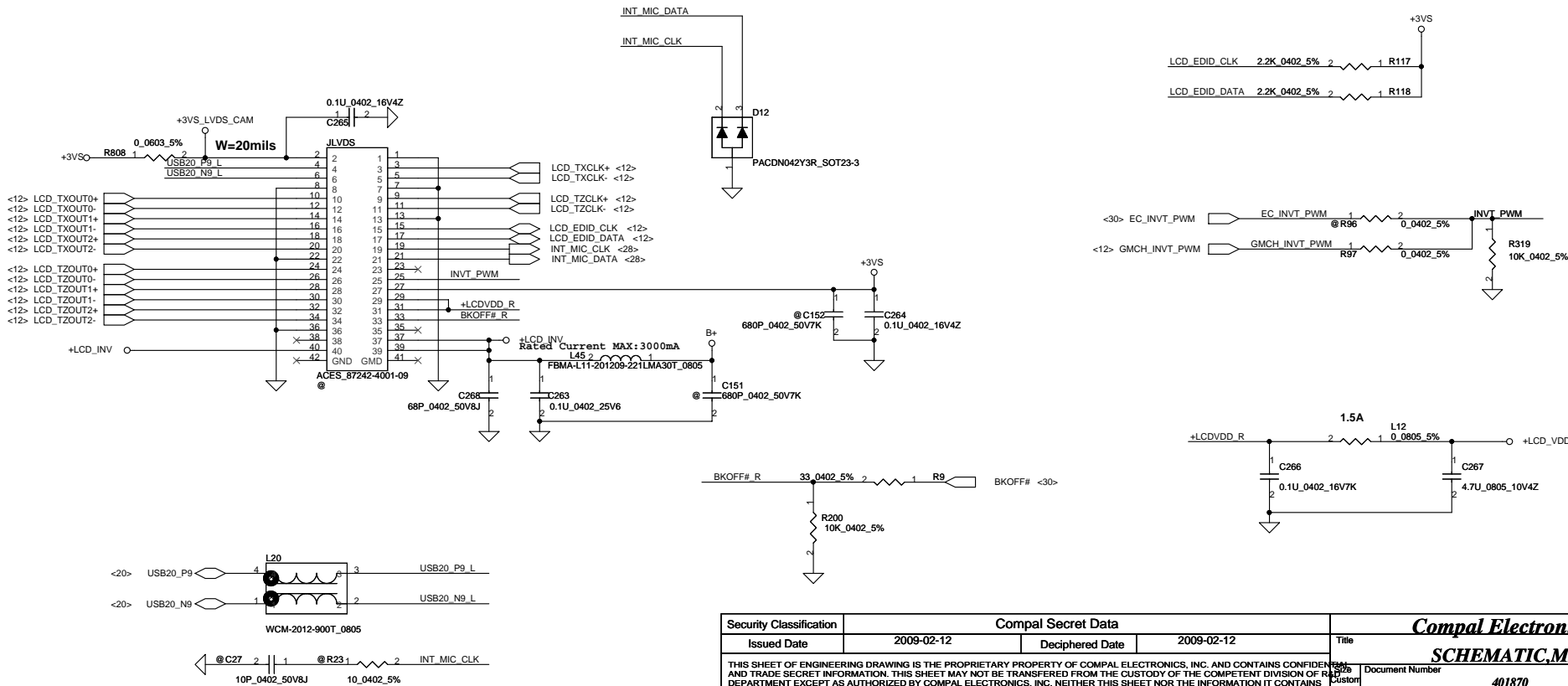
SCHEMATIC, MB A6053

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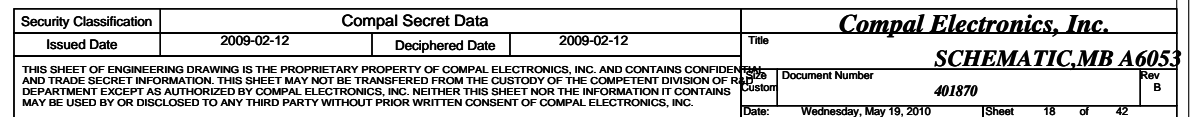
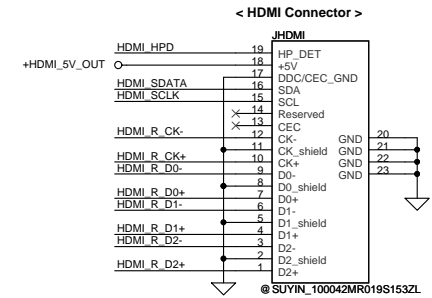
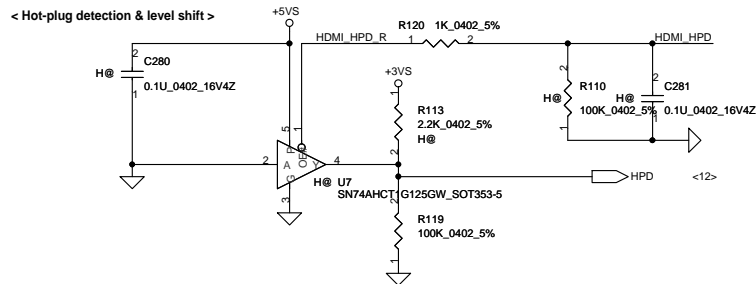
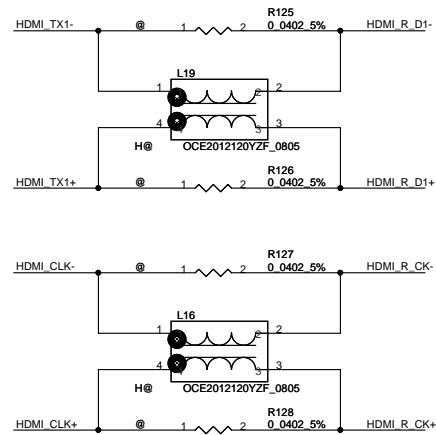
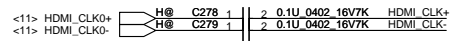
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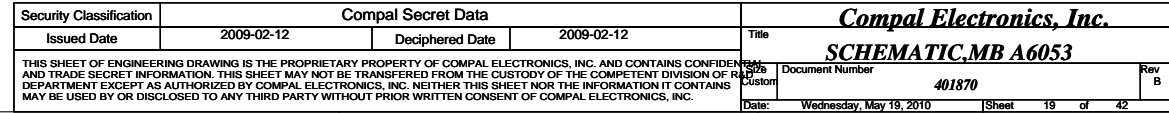
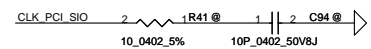
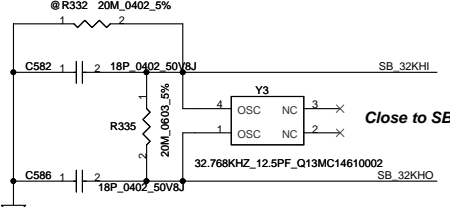
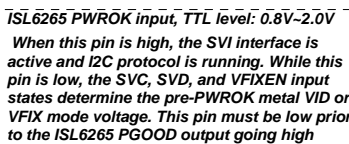
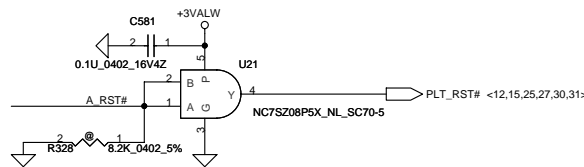


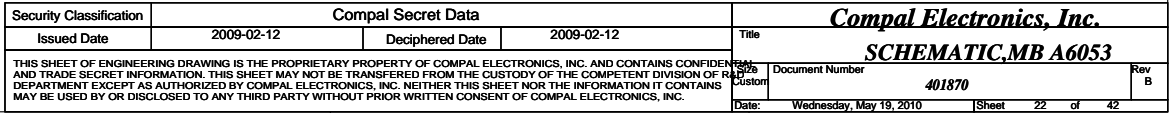
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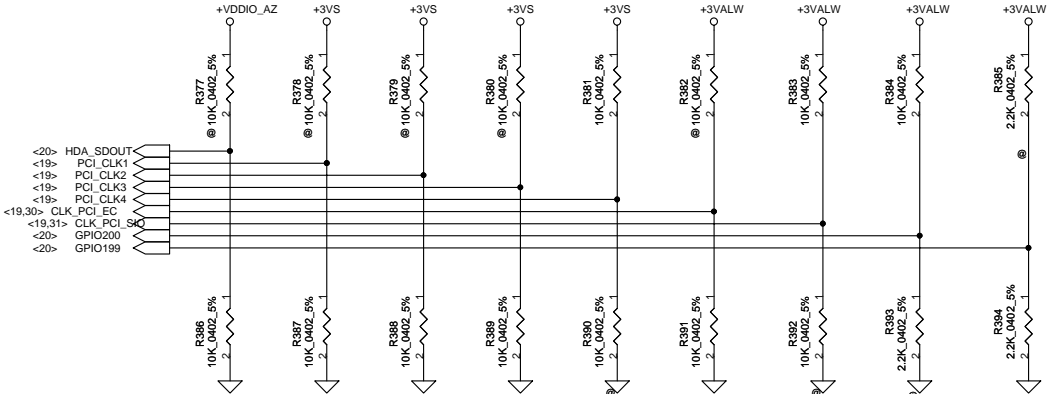




REQUIRED STRAPS

Check Internal PU/PD

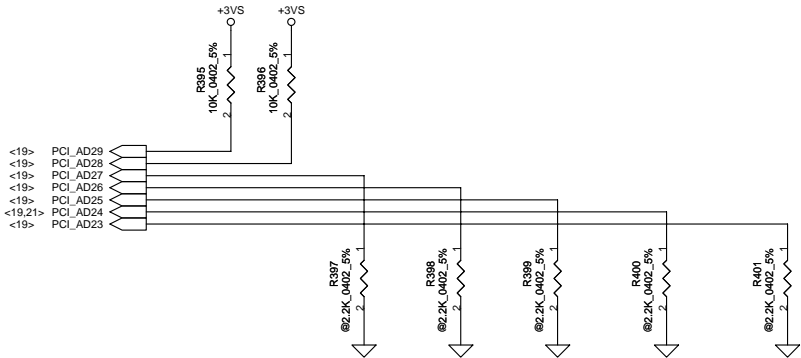
	AZ_SDOUT	PCI_CLK1	PCI_CLK2	PCI_CLK3	PCI_CLK4	LPC_CLK0	LCP_CLK1		GPIO200	GPIO199
PULL HIGH	LOW POWER MODE	ALLOW PCIE GEN2	WATCHDOG TIMER ENABLE	USE DEBUG STRAP	Inter CLK Gen Mode Enable	EC ENABLE	CLOCKGEN ENABLE		H,H = Reserved	
					DEFAULT		DEFAULT		H,L = SPI ROM (Default)	
PULL LOW	Performance MODE	FORCE PCIE GEN1	WATCHDOG TIMER DISABLE	IGNORE DEBUG STRAP	Inter CLK Gen Mode Disable	EC DISABLE	CLOCKGEN DISABLE		L,H = LPC ROM	L,L = FWH ROM
	DEFAULT	DEFAULT	DEFAULT	DEFAULT		DEFAULT				



DEBUG STRAPS

SB800 HAS 15K INTERNAL PU FOR PCI_AD[27:23]

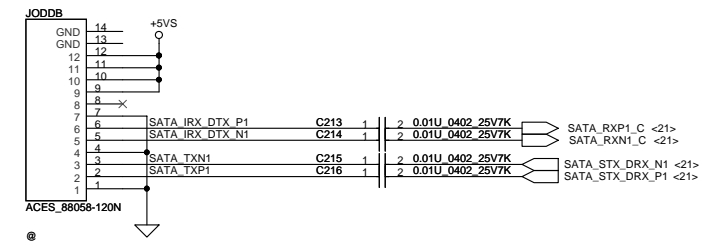
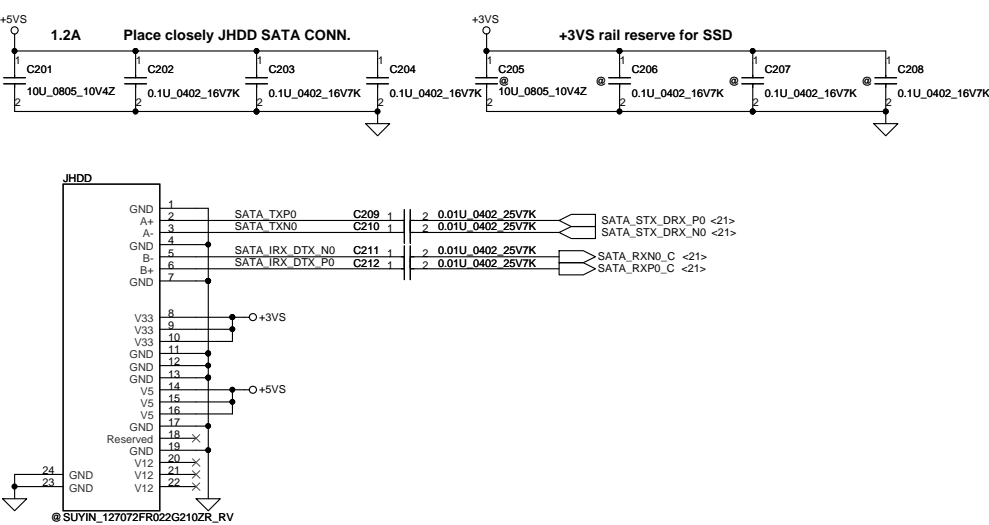
		PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE PCI PLL	DISABLE ILA AUTORUN	USE FC PLL	USE DEFAULT PCIE STRAPS	DISABLE PCI MEM BOOT	
	DEFAULT	DEFAULT	DEFAULT	DEFAULT	DEFAULT	
PULL LOW	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS FC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM BOOT	



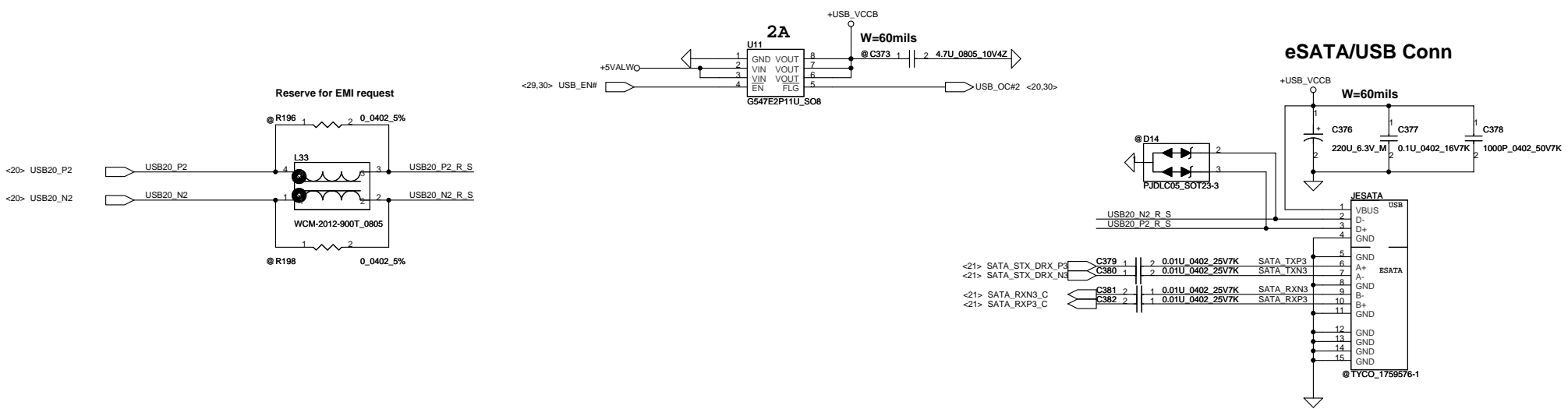
Check AD29,AD28 strap function

check default

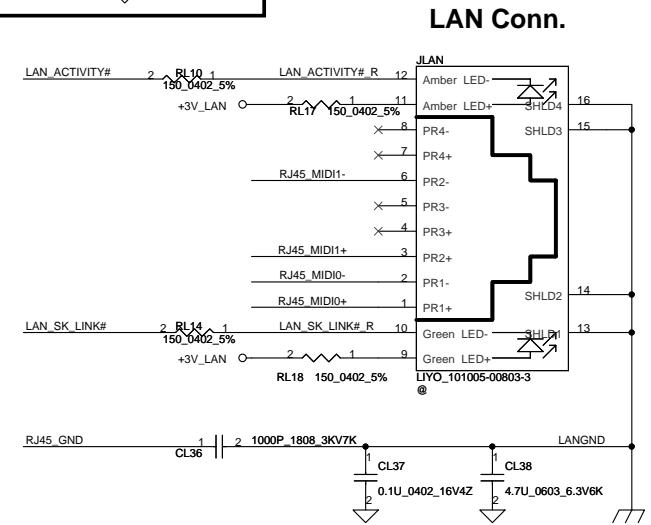
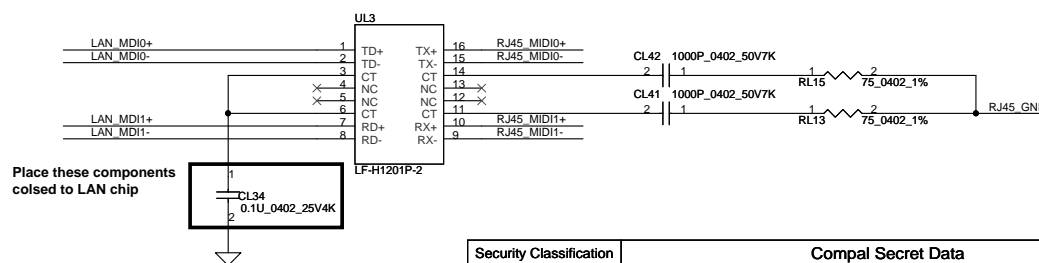
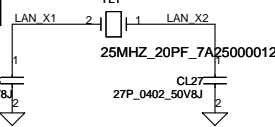
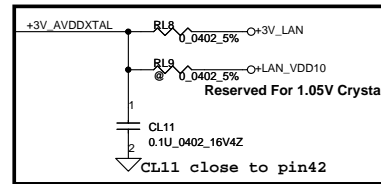
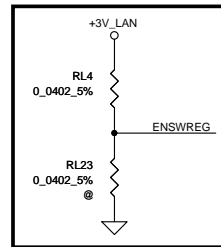
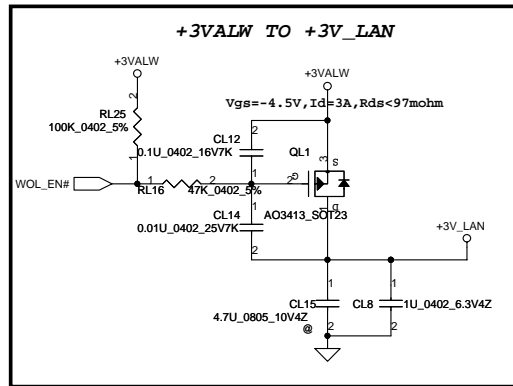
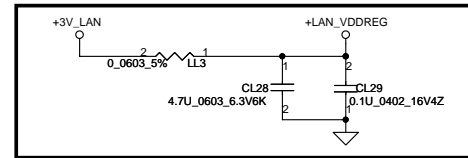
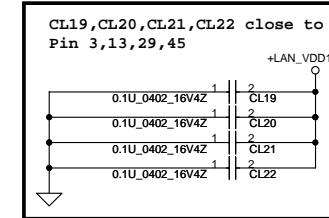
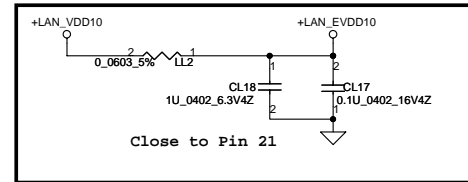
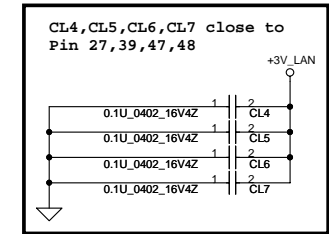
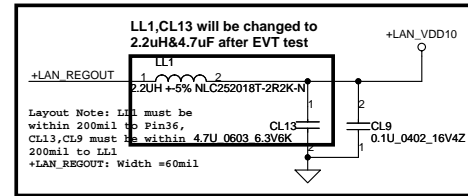
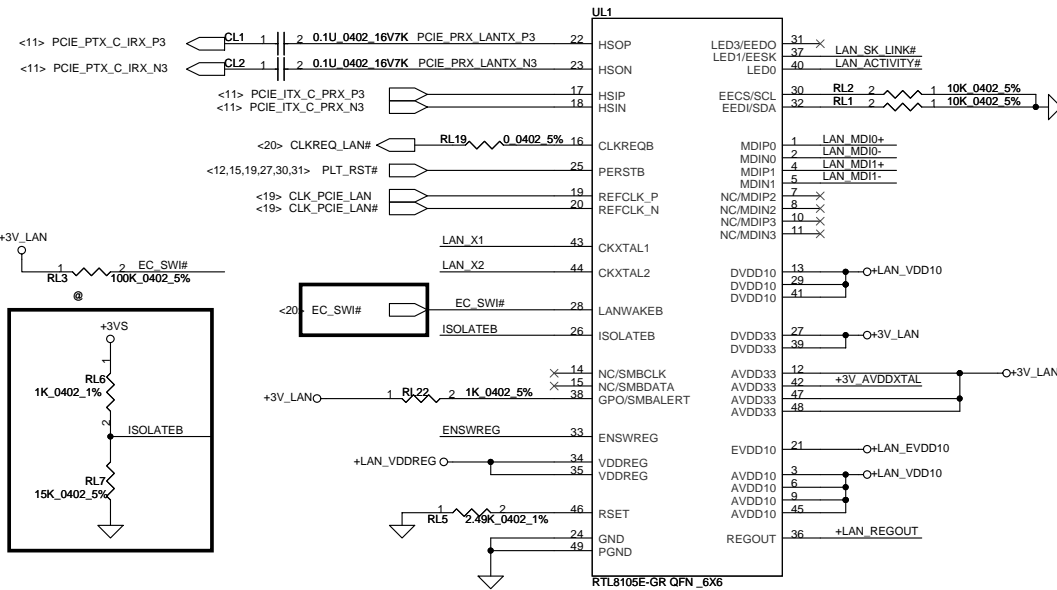
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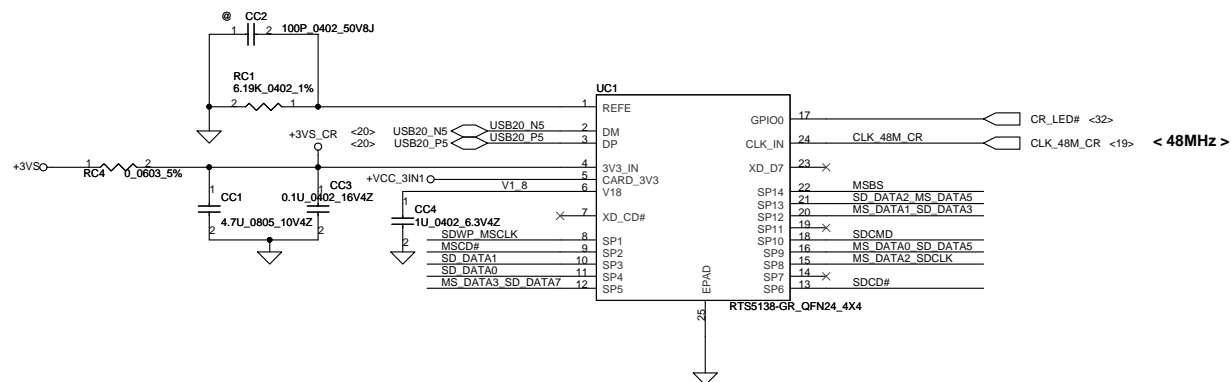
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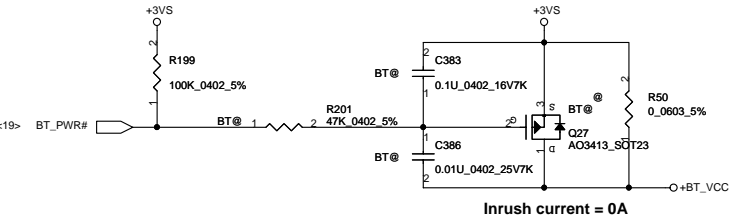


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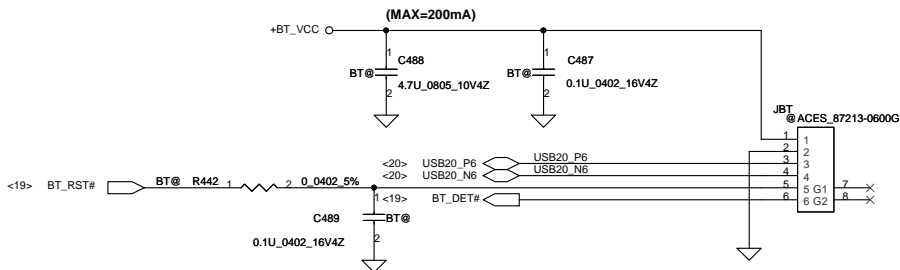


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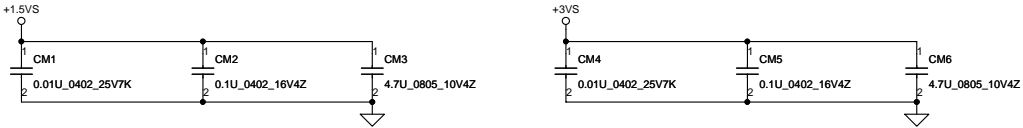
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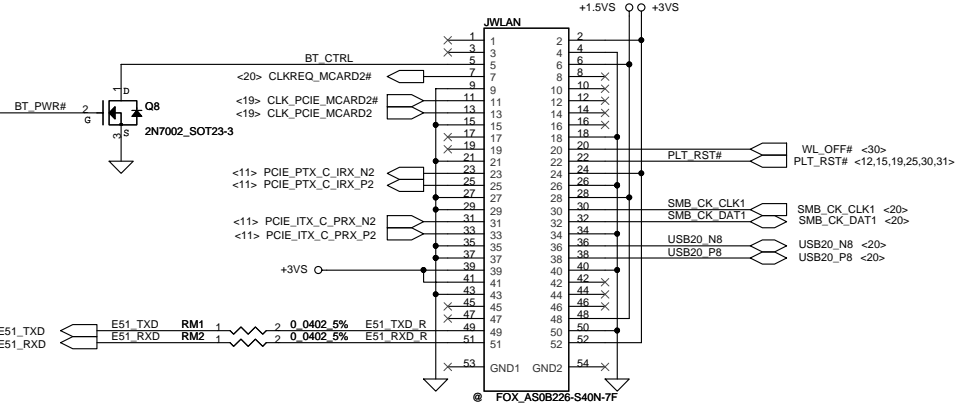
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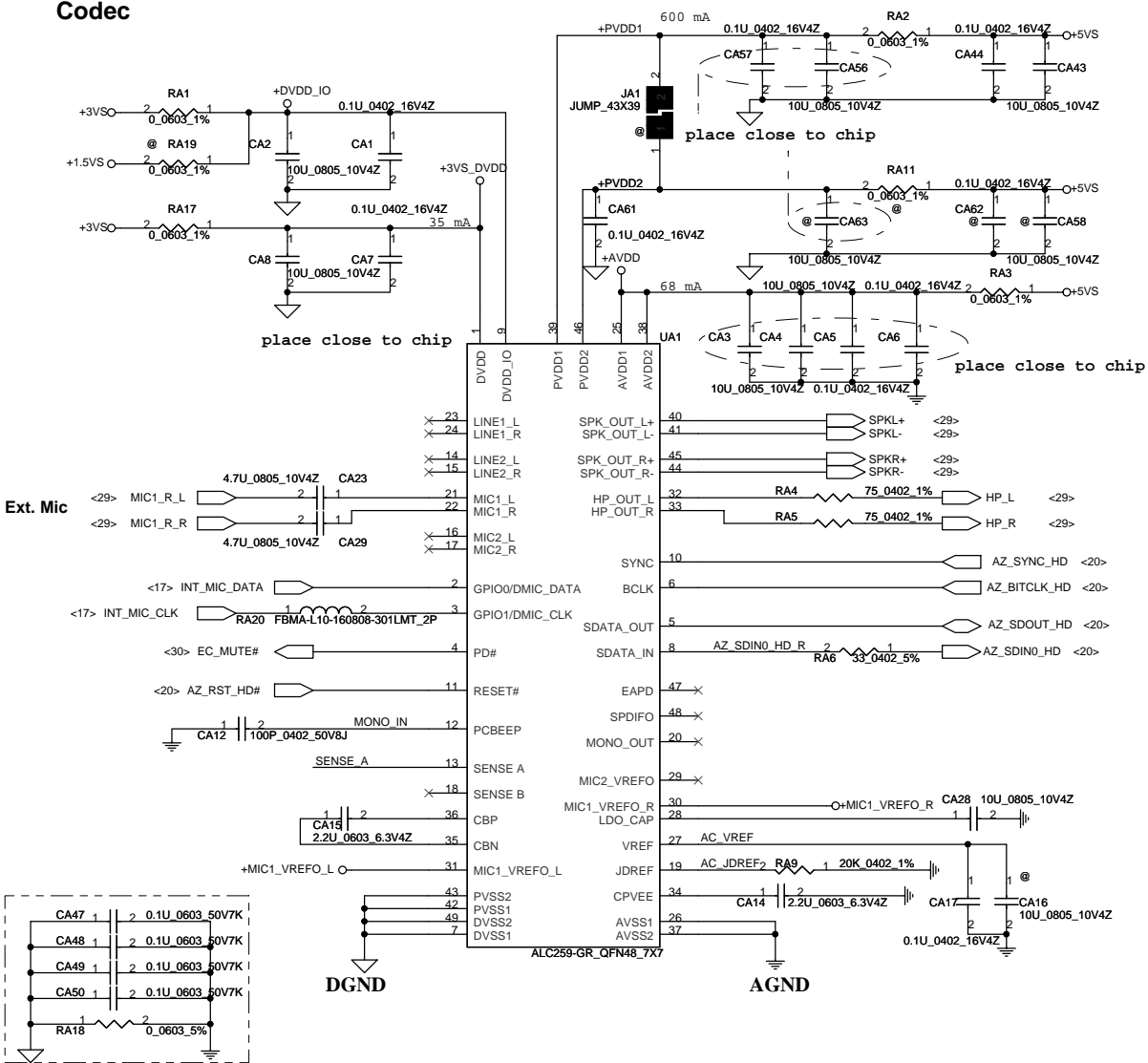
< PCIe Mini Card for WLAN >



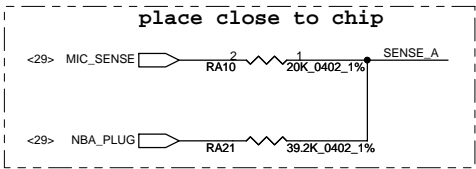
	BT on module Enable	BT on module Disable
BT_CTRL	HI	LO
BT_PWR#	LO	HI



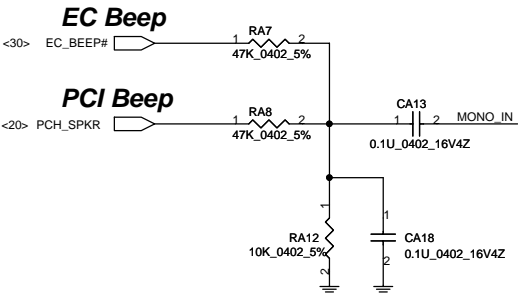
Codec



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)	

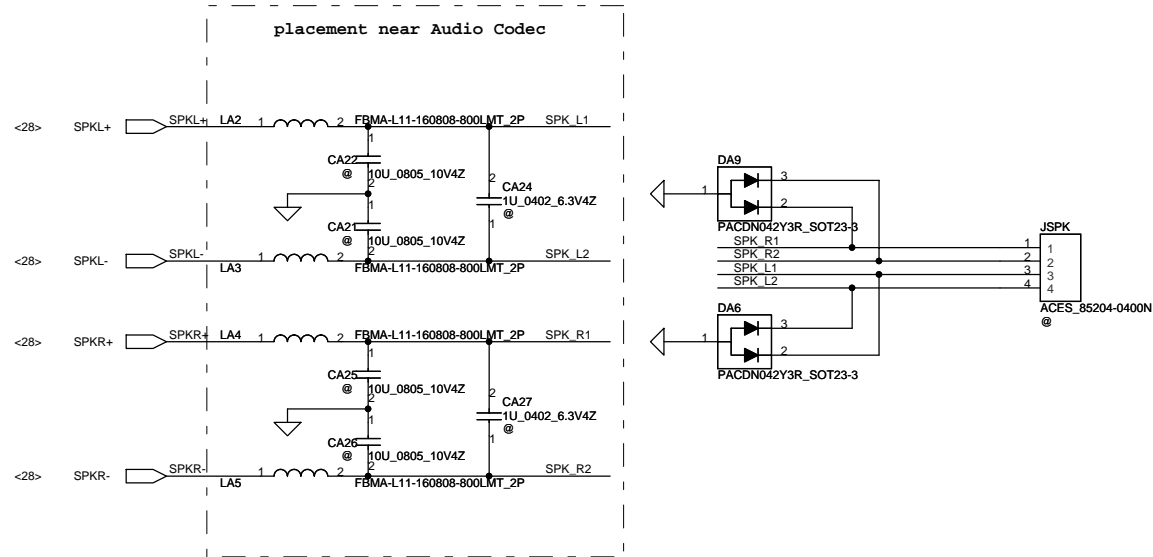


Beep sound



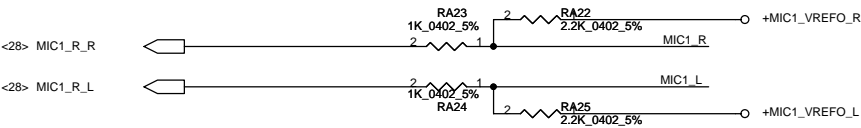
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Speaker Connector

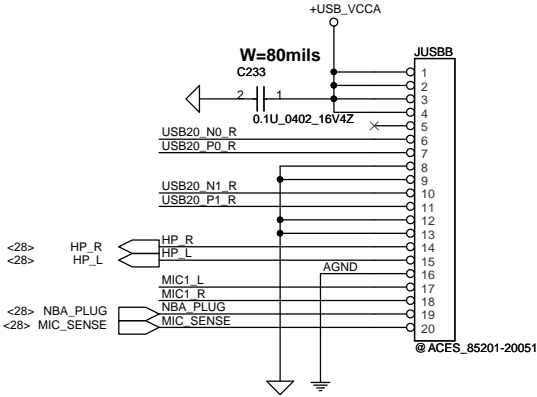
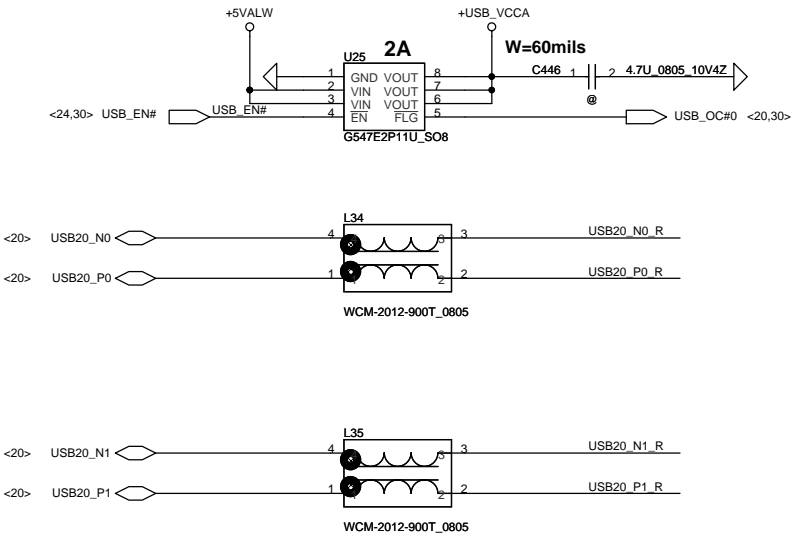


HeadPhone/LINE Out JACK

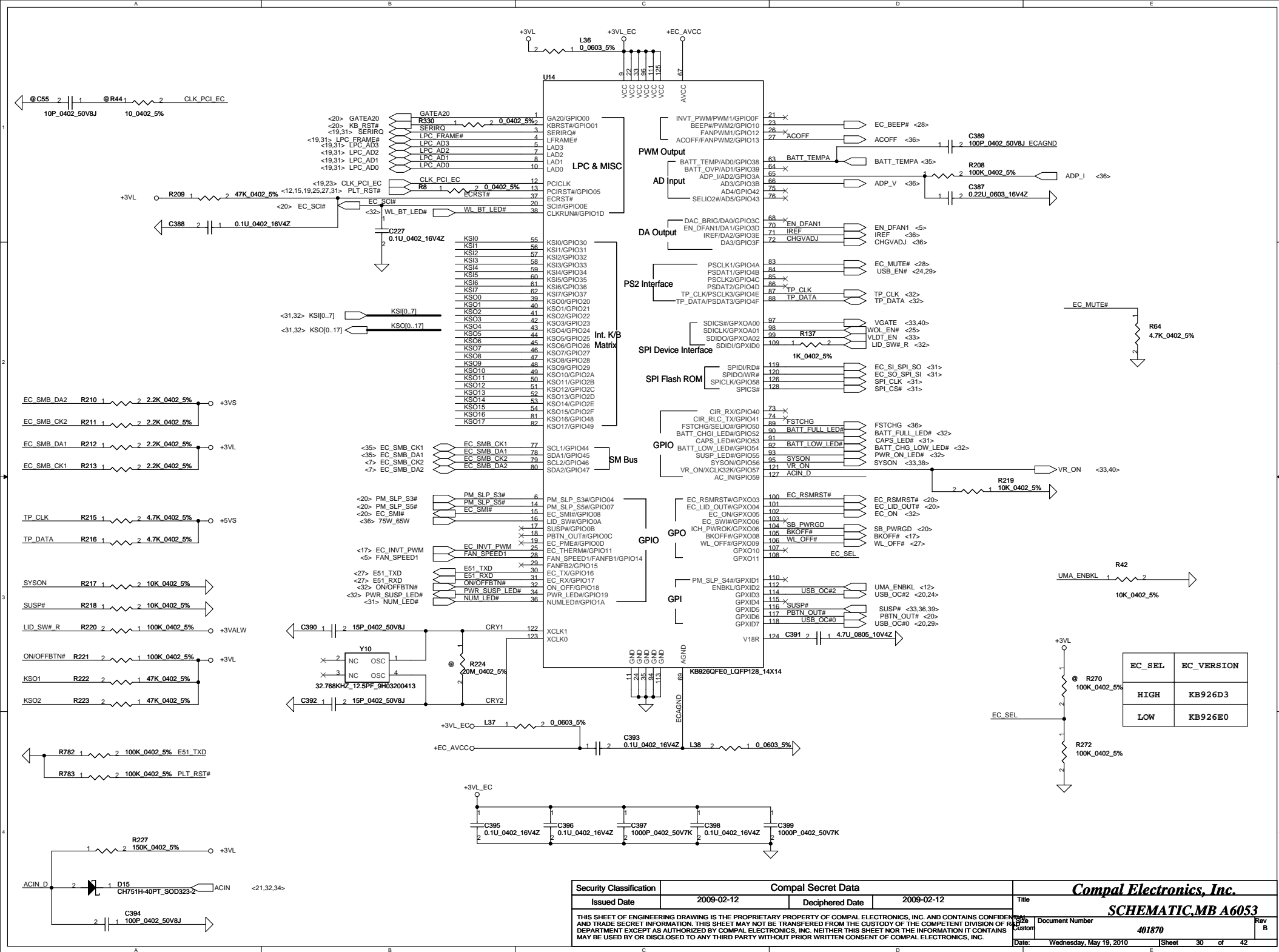
Ext.MIC/LINE IN JACK



Audio & USB Sub-Board Conn.

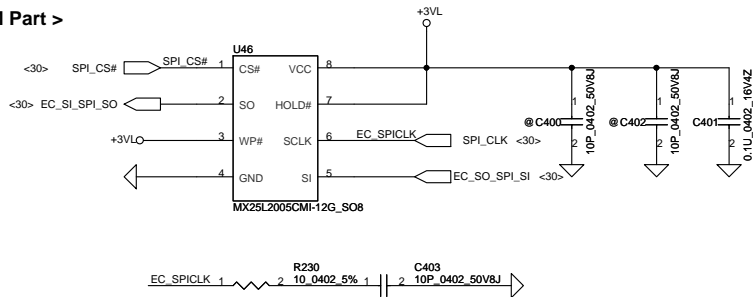


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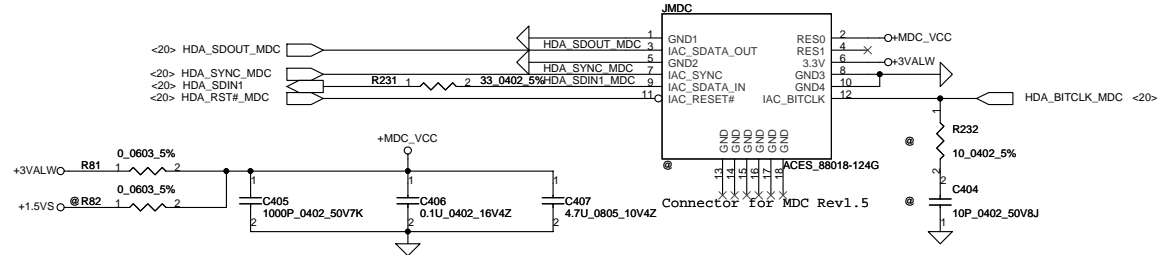


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< ROM Part >

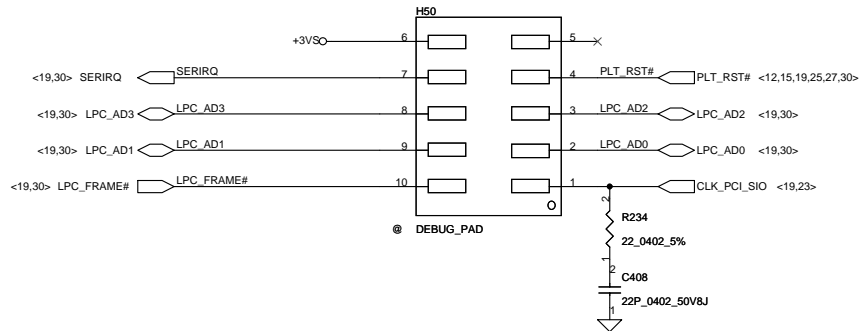


< MDC 1.5 Conn >



< LPC Debug Port >

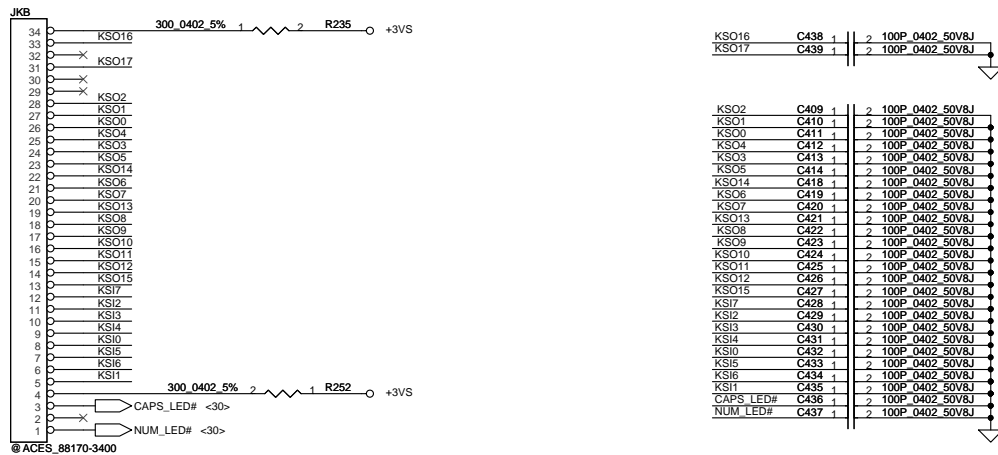
Please place the PAD under DDR DIMM.



< KEYBOARD Conn >

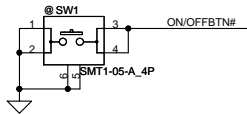


< For EMI >

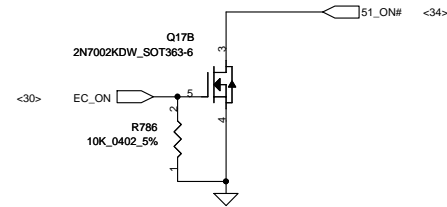


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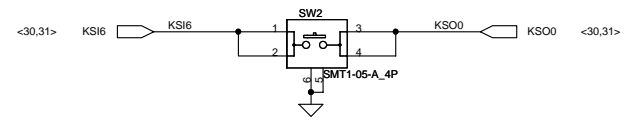
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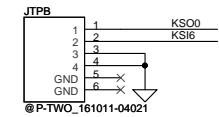
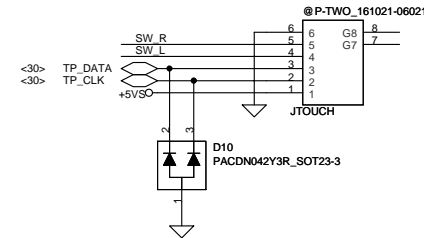
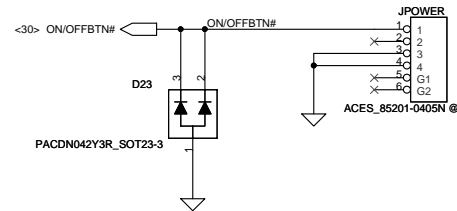
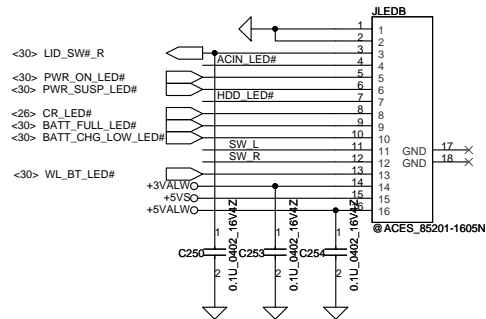
< Power Button Circuit >



< TP on & off BTN on M/B>

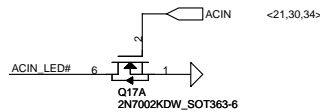


Sub-B Connector

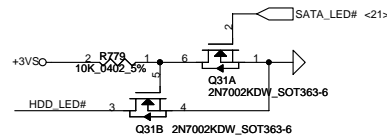


LED Circuit

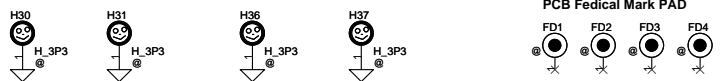
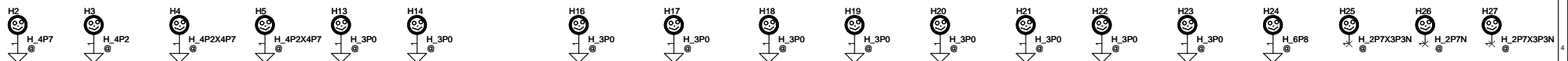
DC-IN LED



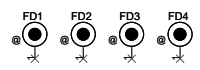
HDD LED



SCREW

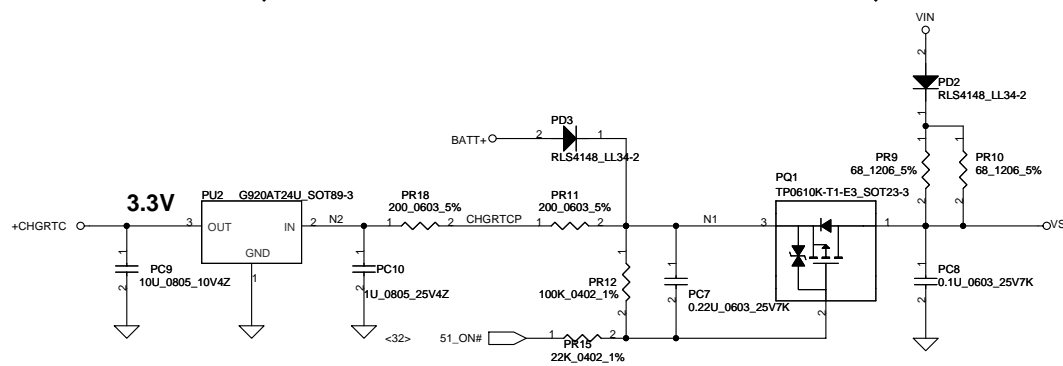
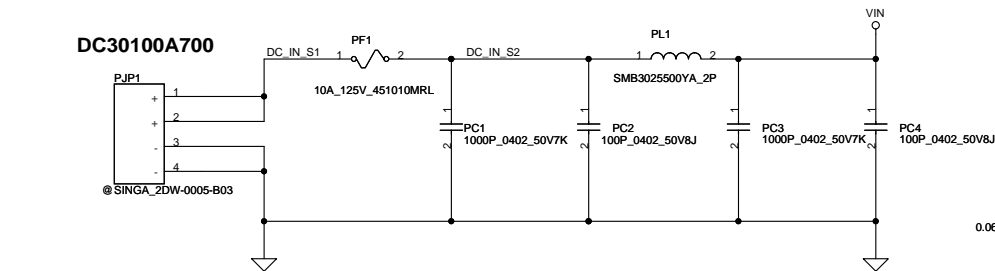


PCB Federal Mark PAD

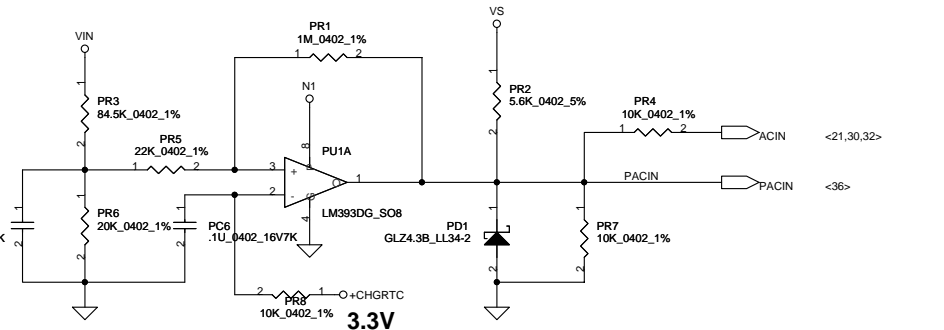
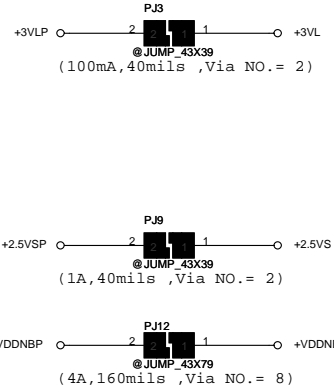
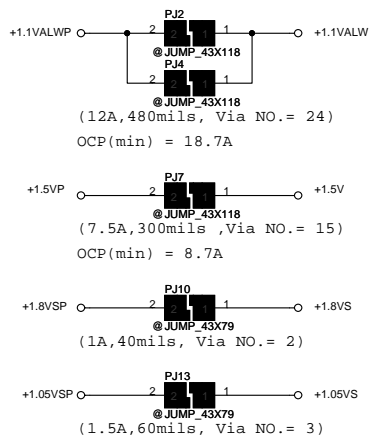
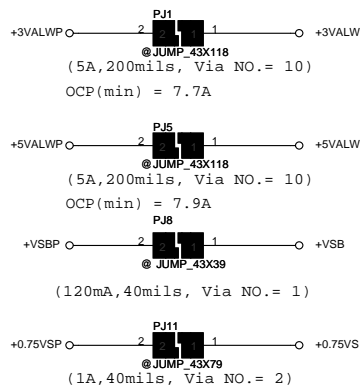
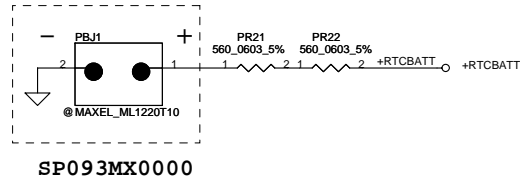


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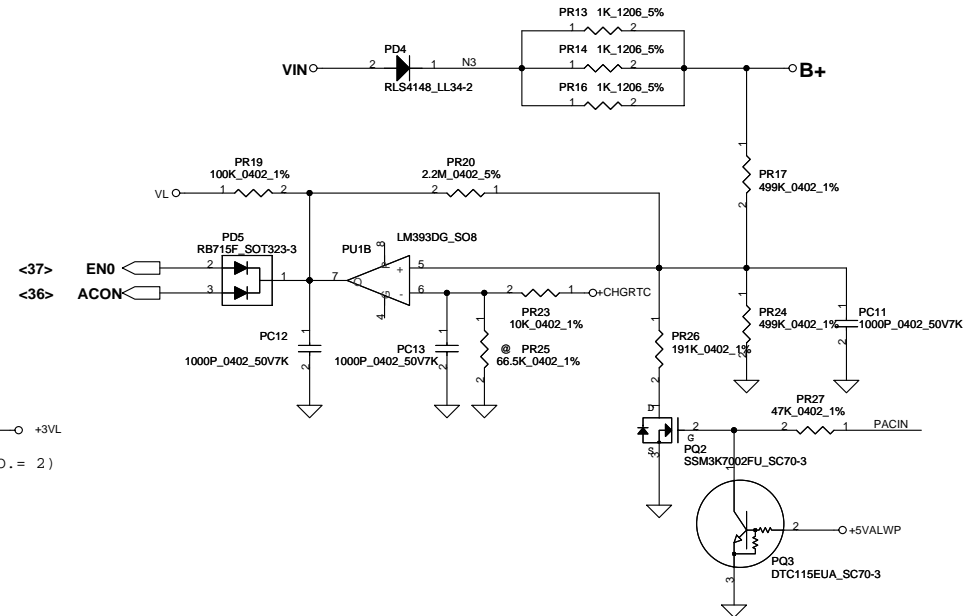
DC30100A700



RTC Battery

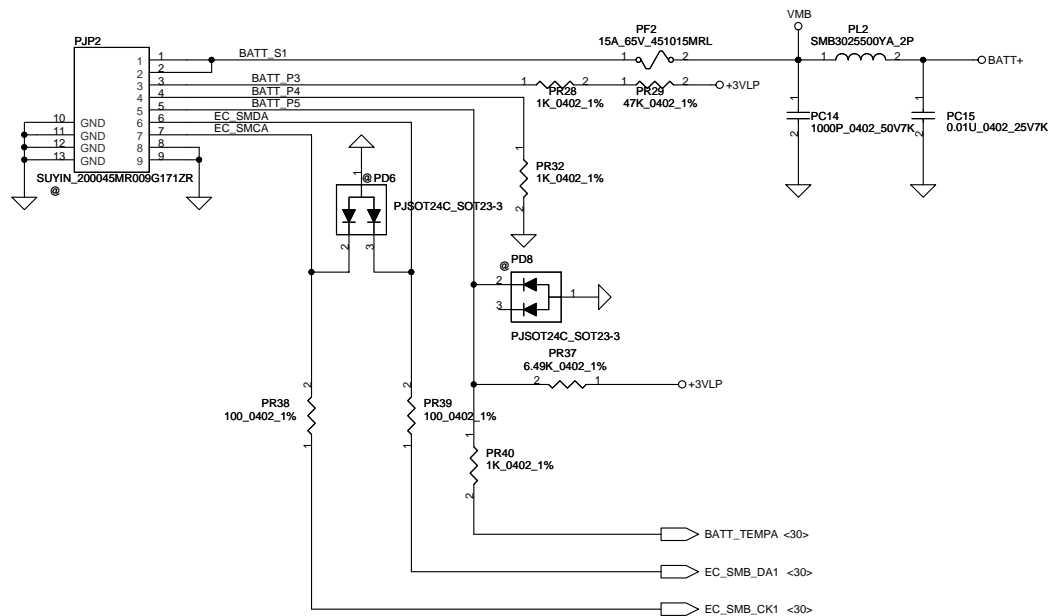


Vin Detector			
High	18.384	17.901	17.430
Low	17.728	17.257	16.976



**Precharge detector
15.97V/14.84V FOR
ADAPTOR**

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PH1 under CPU bottom side :

CPU thermal protection at 90 degree C

Recovery at 56 degree C

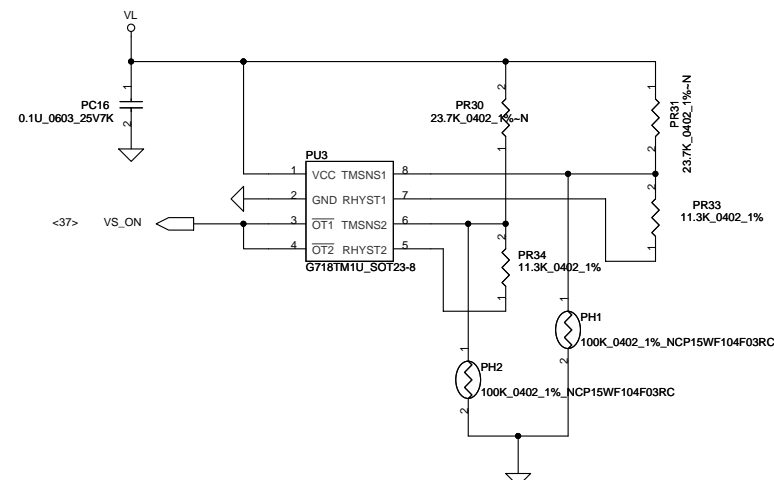
$$R_{set} = 3 * R_{tmh}$$

$$R_{hyst} = (R_{set} * R_{tml}) / (3 * R_{tml} - R_{set})$$

$$R_{tmh} \text{ at } 90C = 7.87K, R_{tml} \text{ at } 56C = 26.1K$$

$$R_{set} = 3 * 7.87K = 23.61K \Rightarrow 23.7K$$

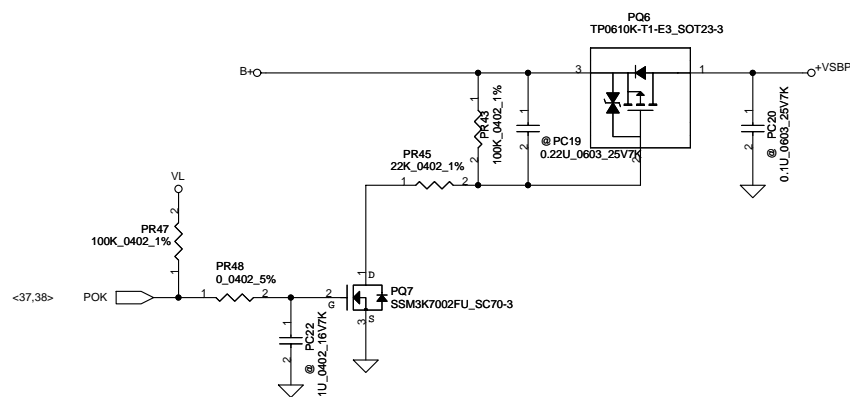
$$R_{hyst} = (23.7K * 26.1K) / (3 * 26.1K - 23.7K) = 11.33K \Rightarrow 11.3K$$

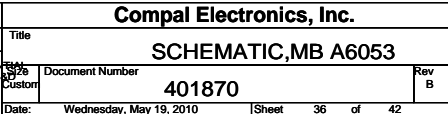


PH2 near main Battery CONN :

BAT. thermal protection at 90 degree C

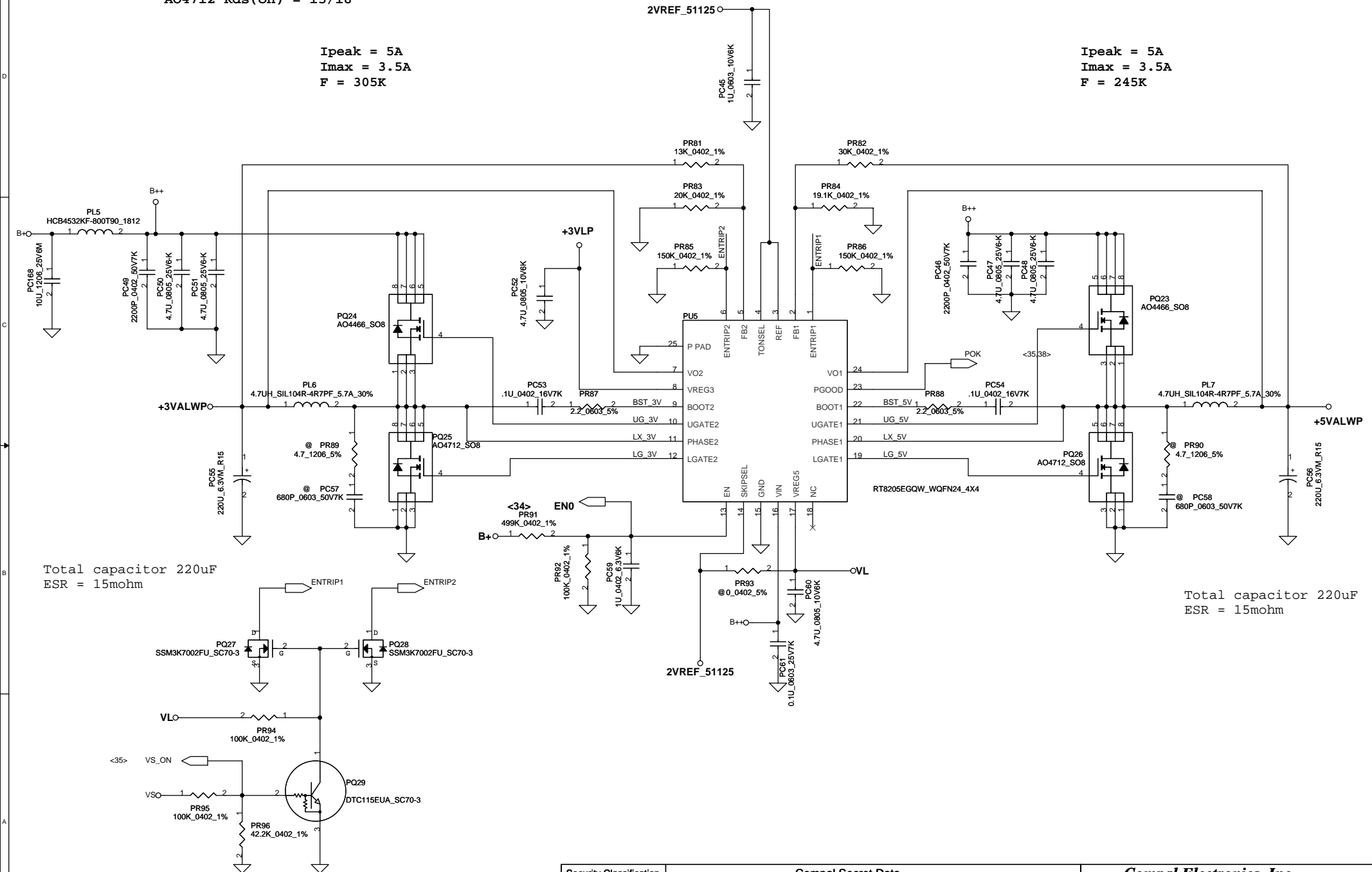
Recovery at 56 degree C



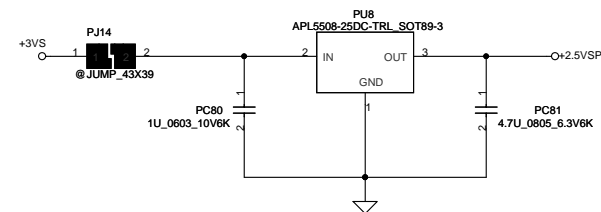
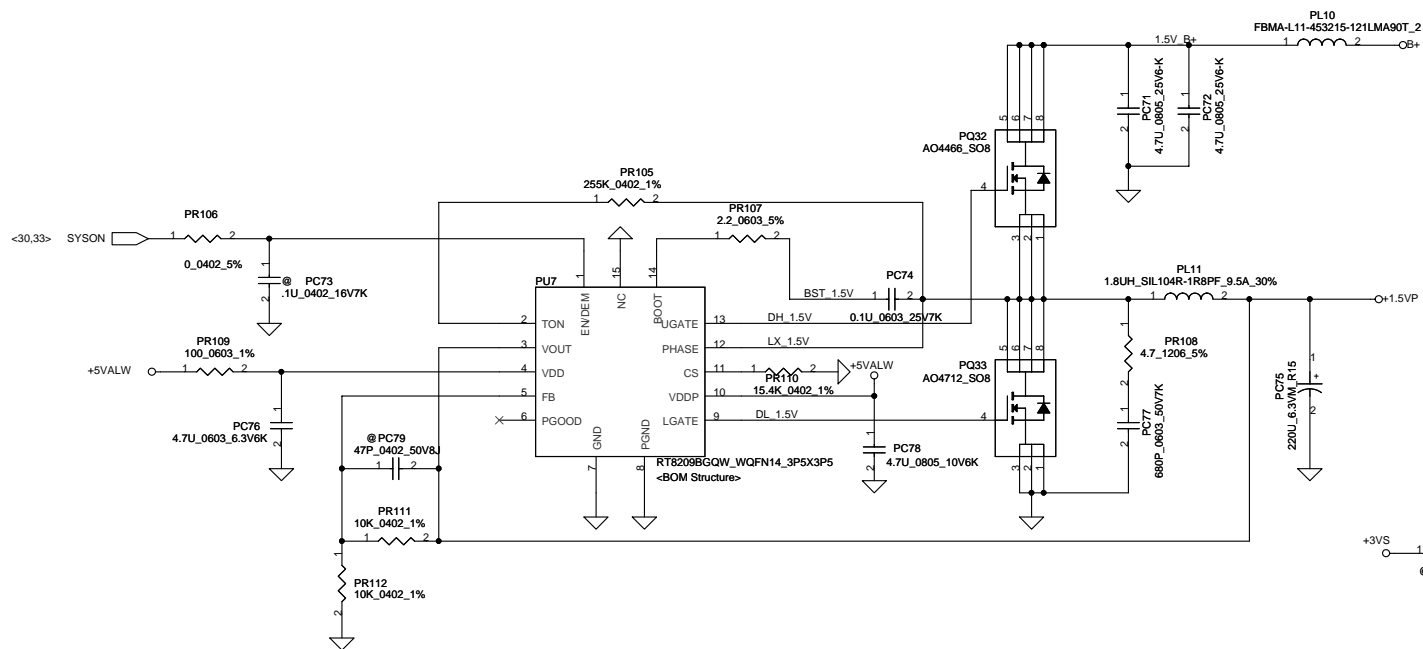
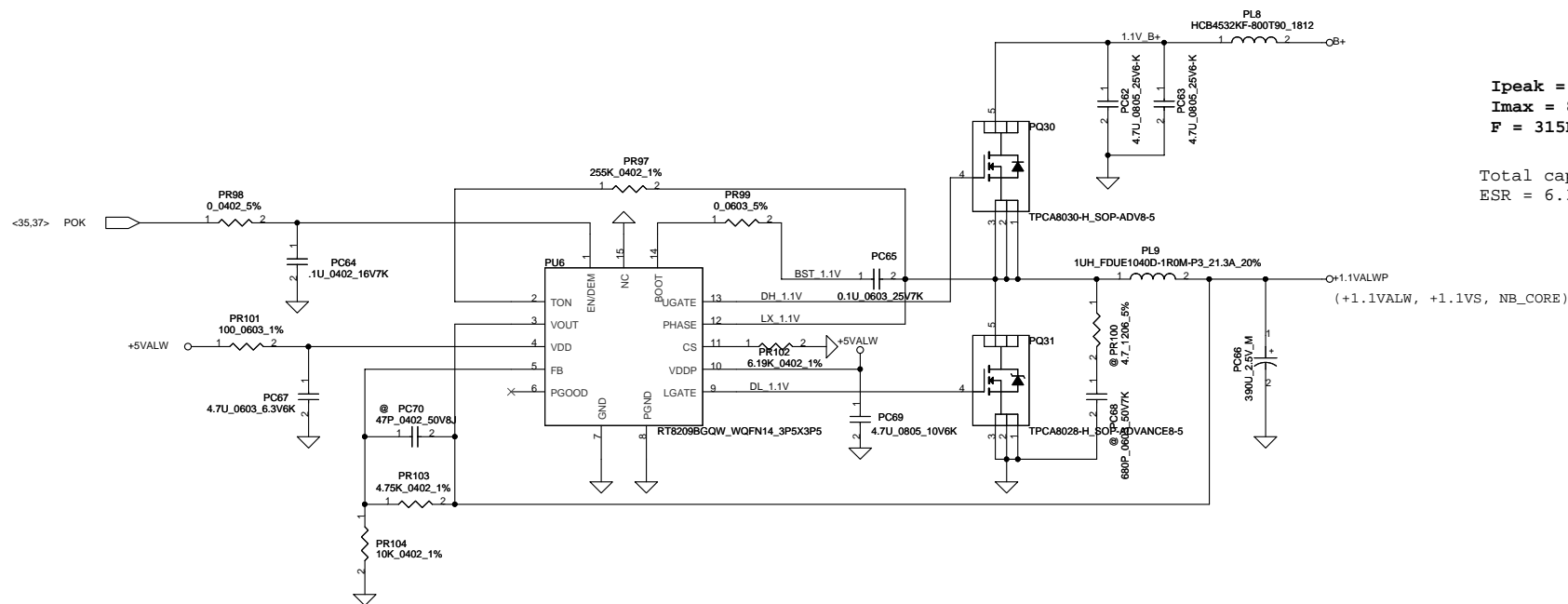


I_{peak} = 5A
I_{max} = 3.5A
F = 305K

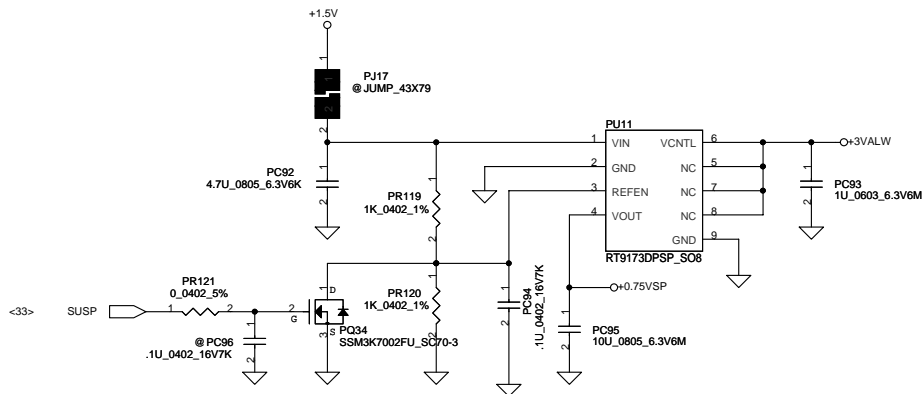
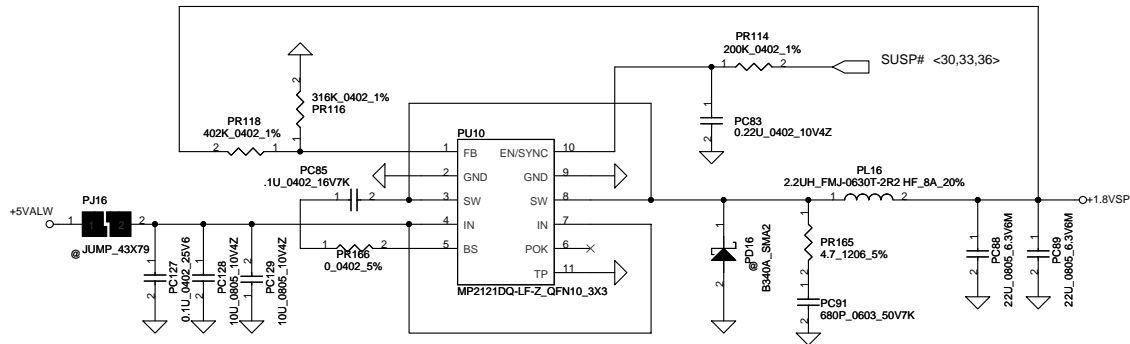
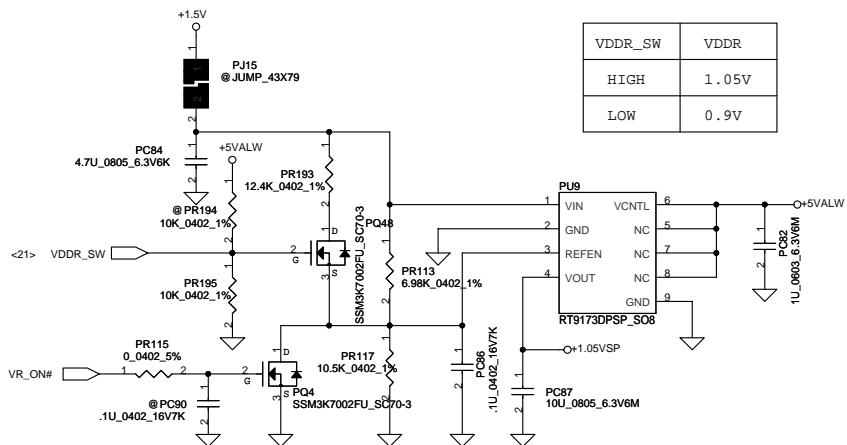
I_{peak} = 5A
I_{max} = 3.5A
F = 245K

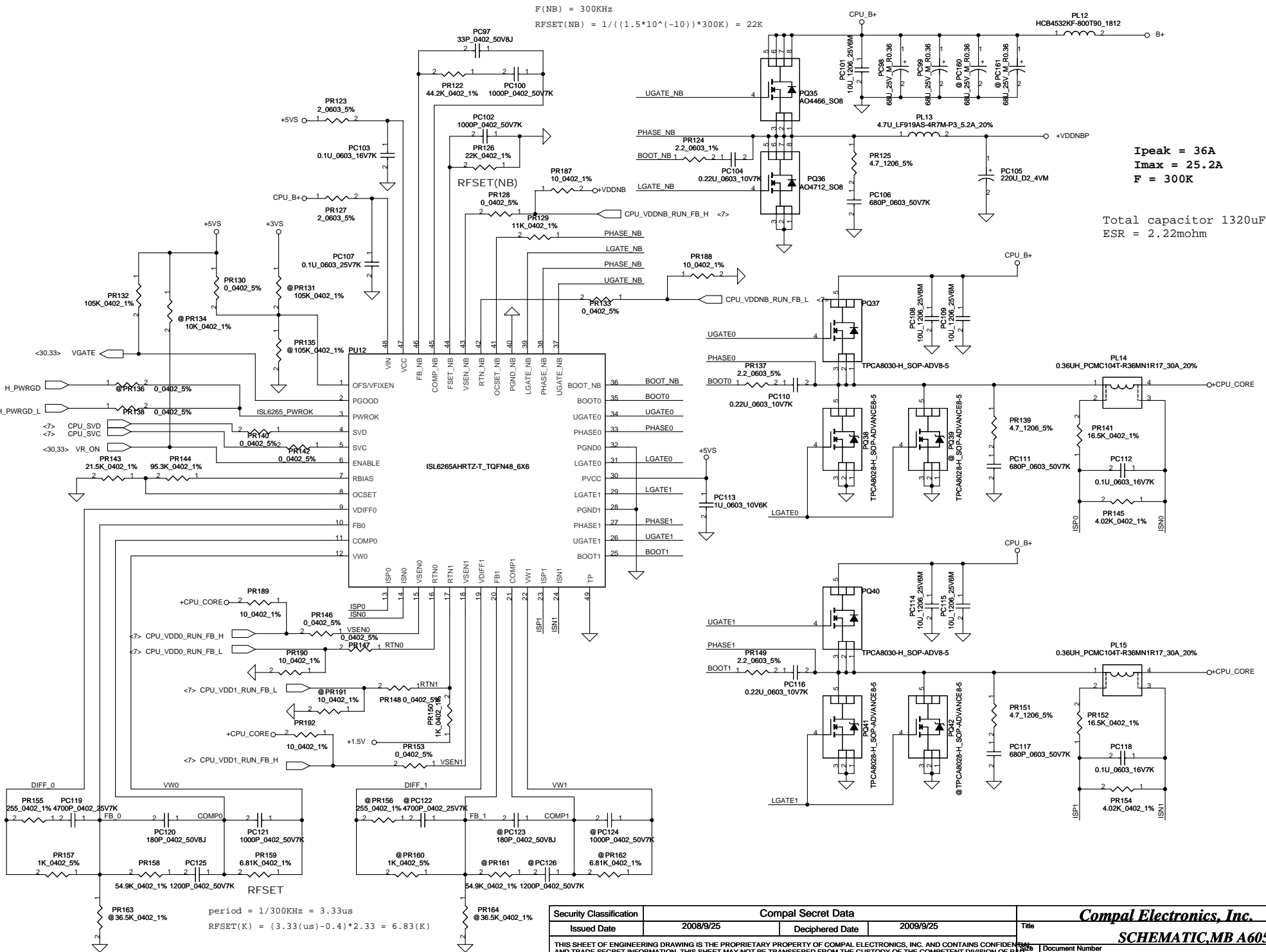


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PIR (Product Improve Record)
NALAE LA-6053P SCHEMATIC CHANGE LIST
REVISION CHANGE: 0.1 TO 0.2

NO	DATE	PAGE	MODIFICATION LIST
1	2009/12/14	33	Change JLEDB pin define as customer request
2	2009/12/14	25,28,30	Delete JODDB, JBT and JUSBB support pin
3	2009/12/14	33	Change JPOWER Pin2 from GND to NC
4	2009/12/15	28	Add R95 at JWLAN Pin5 for BT/WLAN combo Mini Card
5	2009/12/15	25,30	Change U11, U25 P/N from SA00002XX00 to SA000033H00
6	2009/12/15	28	Reverse JBT pin definition
7	2009/12/16	27	Change CC2 from 0.1u to 100P (SE071101J80), and add BOM structure @
8	2009/12/17	33	Cgange JPOWER footprint to ACES_87151-1207_12P (ZIF_上接點)
9	2009/12/17	33	Cgange JTPB footprint to P-TWO_161011-04021_4P-T (NO ZIF), and reverse pin definition
10	2009/12/17	33	Cgange JLEDB footprint to ACES_85201-1205N_12P (ZIF_上接點)
11	2009/12/17	25	Cgange JUSBB footprint to ACES_85201-20051_20P (ZIF_上接點)
12	2009/12/17	33	Change H36, H37 footprint from H_3P3 to H_3P8

Version Change List (P. I. R. List) for Power Circuit

Page# Item Title Solution Description

DVT : modification from EVT		
P38	change voltage divider to less than 10K	change PR104, PR111, PR112 to 10K; PR103 to 4.75K
P38	change OCP value	change PR102 to 6.19K
P39	enlarge output cap	change PC88, PC89 to 22uF(S80000000I10)
P40	don't use NIPPON cap	change PC98, PC99 to SF0000000S80
P40	pull high RTN1 1.5V	change PR150 to mount
P38	EMI request	change PL10 to SM010000D700; change PR107 to 2.2ohm; add PR108 4.7ohm; add PC77 680pF
P40	EMI request	change PR137, PR149 to 2.2ohm; add PR139, PR1514.7ohm; add PC111, PC117 680pF
P37	choke need to meet thermal module height	change PL6, PL7 to SH000006380
P37	EMI request	change PR87, PR88 to 2.2ohm
P40	production line request	change PC98, PC99 to 68uF; add PC160, PC161 68uF
P36	EMI request for ISN issue	add PC162, PC163, PC164 10uF 1206
P39	mount snubber circuit	mount PR165, PC91
P35	OTP setting common	change PR30 and PR31 to 19.6K; PR34 to 7.87K; PR33 to 8.66K
P39	change IC to low cost	change PU9 and PU11 to RT9173
P39	change VDER(1.05V) circuit to switchable	add PR193, PR194, PR195 & PQ48
PVT : modification from DVT		
P40	cost down	change PC98, PC99, PC160, PC161 to SF000000W00
P37	common circuit	change PC45 to 1uF
P37	common circuit	mount PC59
P37	change PQ29 solution	change PQ29 to DTC1158UA
P36	add 65W/75W selection circuit	Add PR35 and PQ5
P38	prevent OVP for HW's cost down	change PC66 to 390uF
P36	EMI request for ISN issue	Add PC166, PC167, 10uF 1206
P37	EMI request for ISN issue	Add PC168, 10uF 1206
P40	EMI request	mount snubber circuit PR125, PC106
P38	EMI request for ESD issue	mount PC64 0.1uF
PreMP : modification from PVT		
P35	Thermal request change OTP	change PR30, PR31 to 23.7K; PR33, PR34 to 11.3K
P36	modify 65W/75W resistor	change PR35 to 12.4K
P34	modify RTC circuit	

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