

Dunlin LA-2601 Schematics Document

Intel Dothan / Alviso GM(PM) / DDR-2 / ICH6-M

(NV43/44M)

2005 / 03 / 14

Rev:1.0

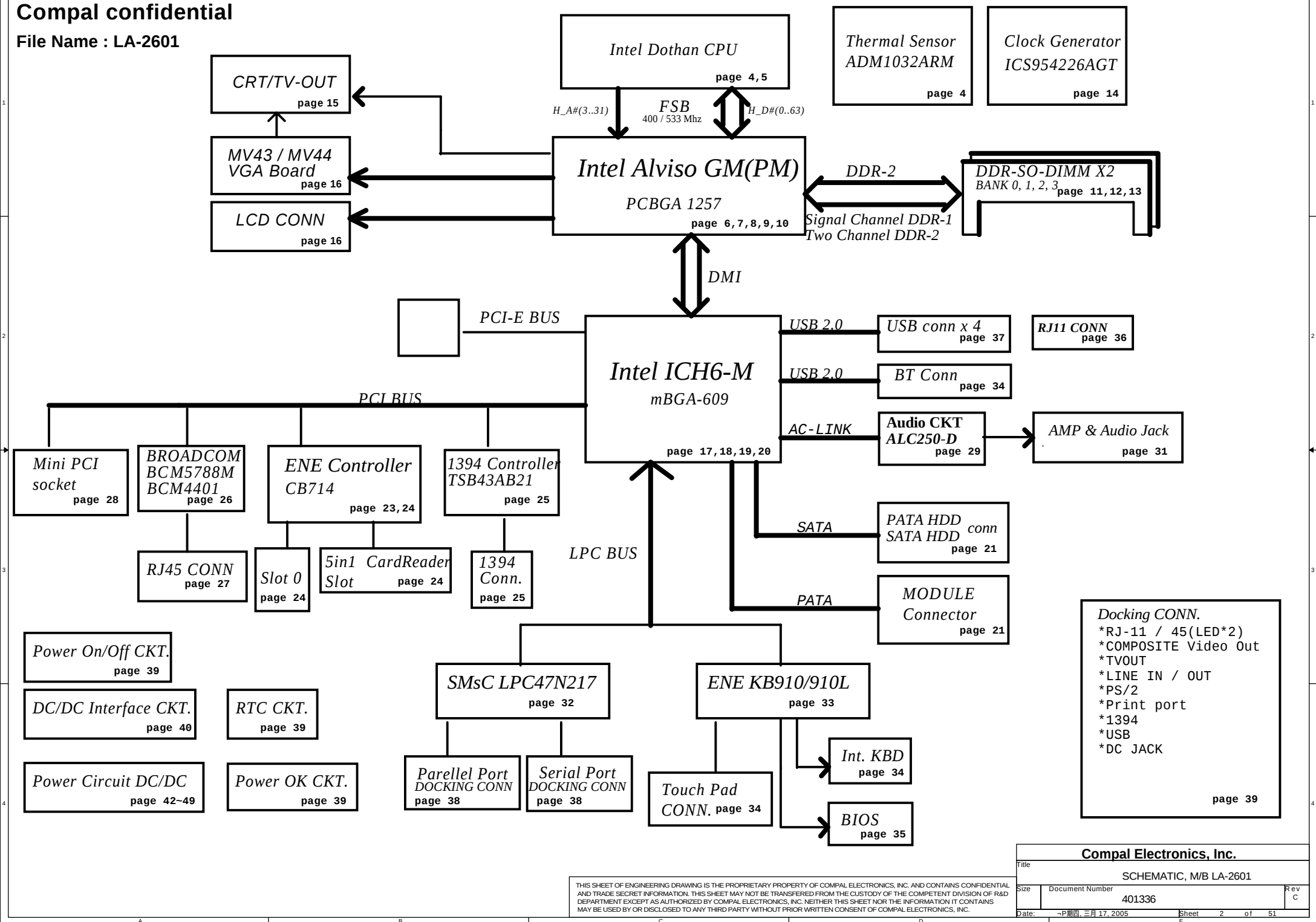
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File Name : LA-2601



Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+1.05VS	1.05V switched power rail	ON	OFF	OFF
+DDRVTT	1.25V switched power rail for DDR terminator	ON	OFF	OFF
+1.5VALW	1.5V always on power rail	ON	ON	ON*
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+DDRVCC	2.5V power rail for DDR	ON	ON	OFF
+2.5VS	2.5V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V	3.3V power rail	ON	ON	OFF
+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
+5VMOD	5V switched power rail for Module Bay	ON	OFF	OFF
+12VALW	12V always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON

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	AD20	2	PIRQA/PIRQB
1394	AD16	0	PIRQE
SD	AD20	2	PIRQA/PIRQB
Mini-PCI	AD18	1	PIRQG/PIRQH
LAN	AD17	3	PIRQF

EC SM Bus1 address

Device	Address	Device	Address
Smart Battery	0001 011X b	ADM1032	1001 110X b
EEPROM(24C16/02)	1010 000X b	2'nd Battery	1001 011X b
(24C04)	1011 000Xb		

ICH6M SM Bus address

Device	Address
Clock Generator (ICS 952623)	1101 001Xb
DDR DIMM0	1010 000Xb
DDR DIMM2	1010 010Xb

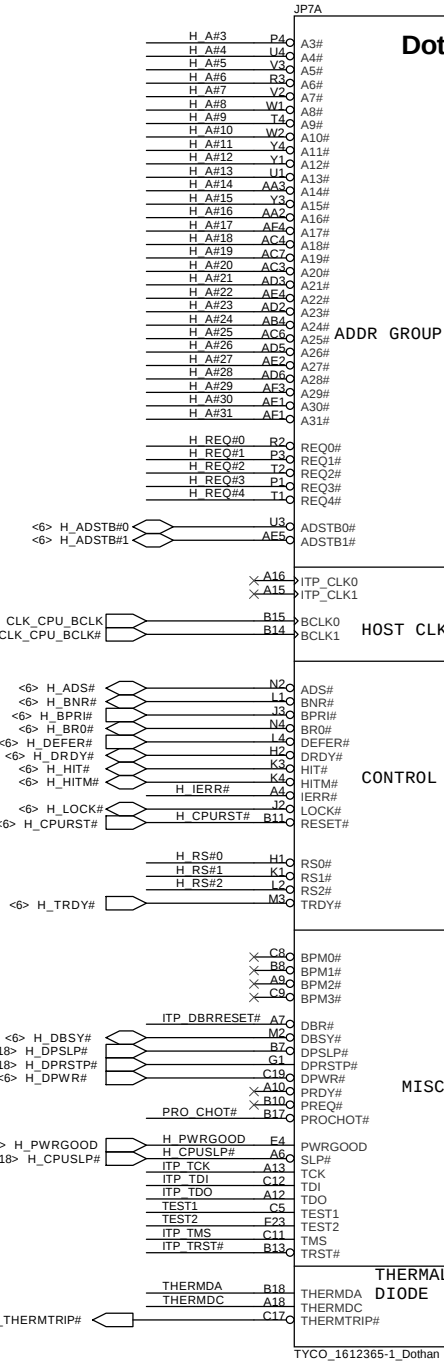
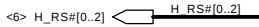
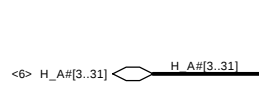
STATE \ SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	LOW	ON	OFF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

Board ID / SKU ID Table for AD channel

Vcc	3.3V +/- 5%			
Ra / Rc	100K +/- 5%			
Board ID	Rb / Rd	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	



Dothan

ADDR GROUP

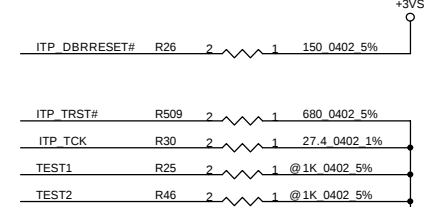
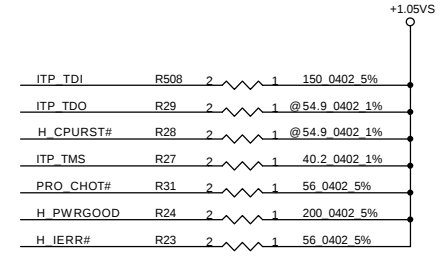
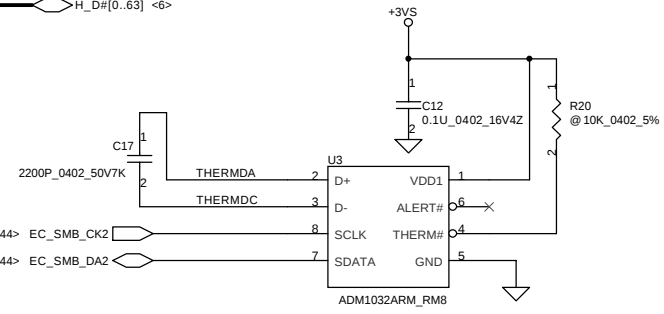
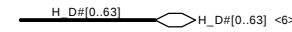
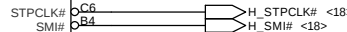
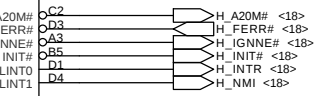
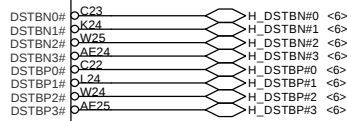
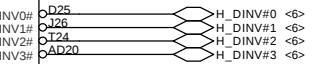
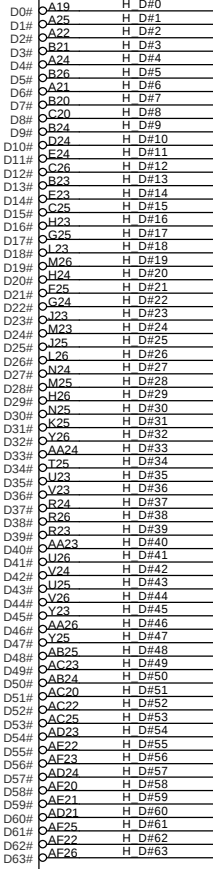
DATA GROUP

CONTROL GROUP

MISC

THERMAL DIODE

LEGACY CPU

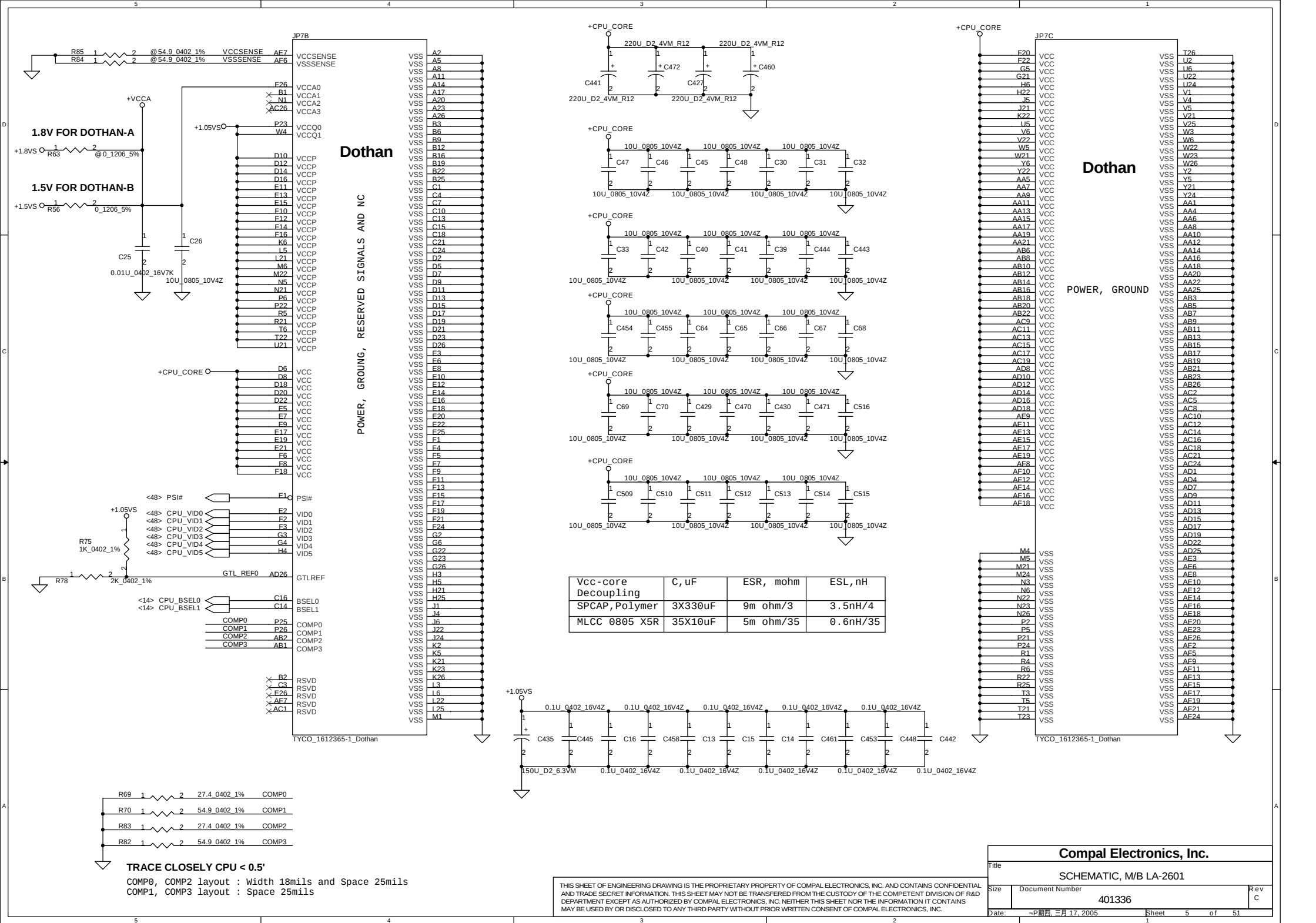


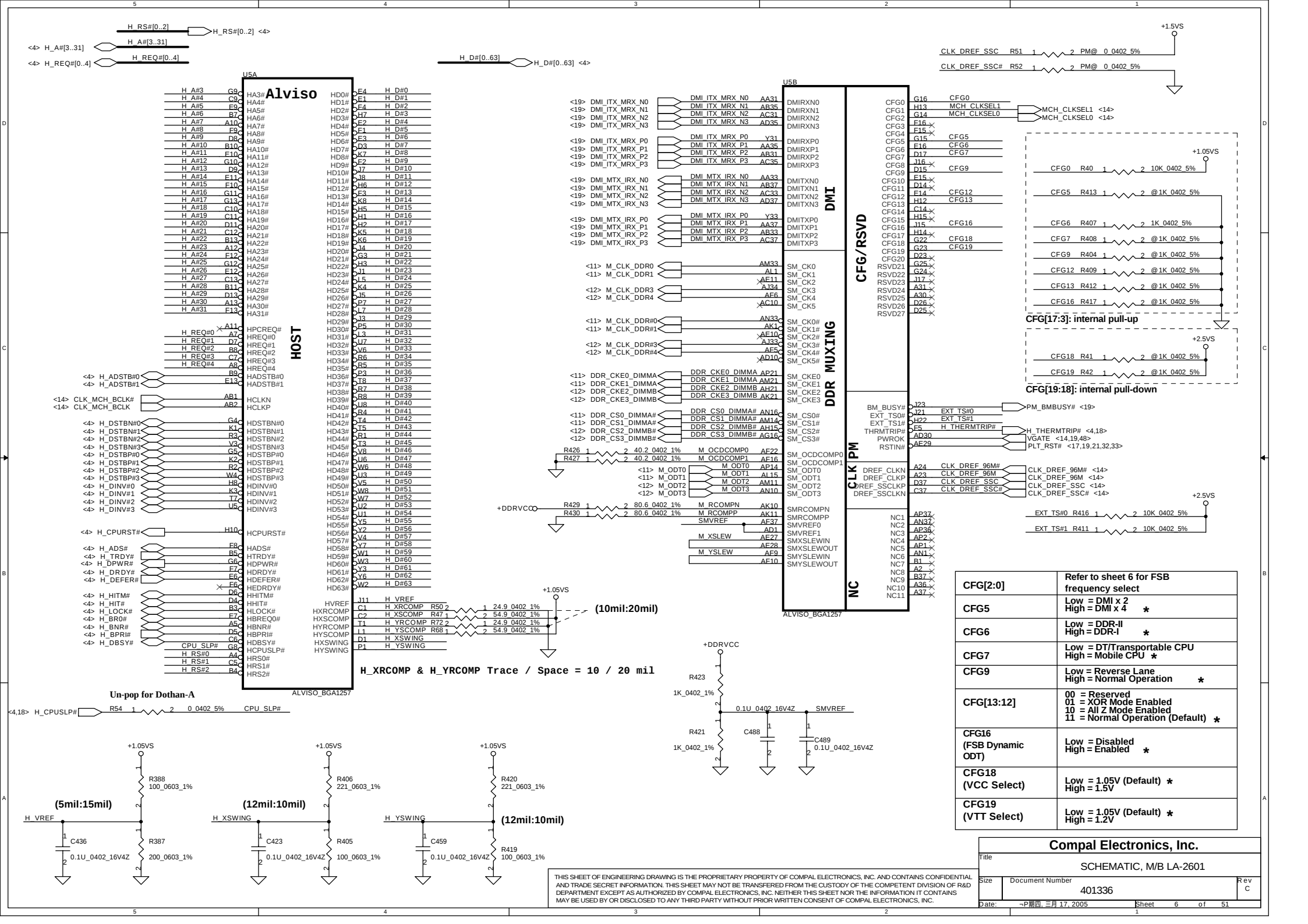
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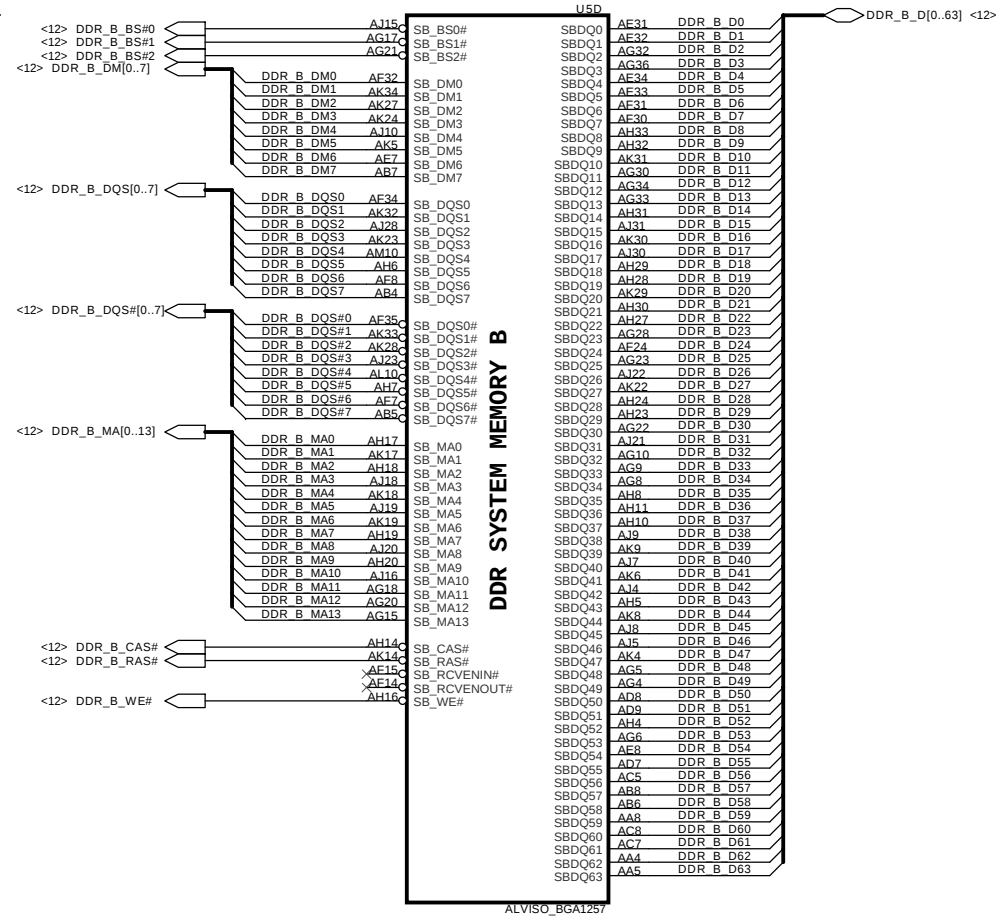
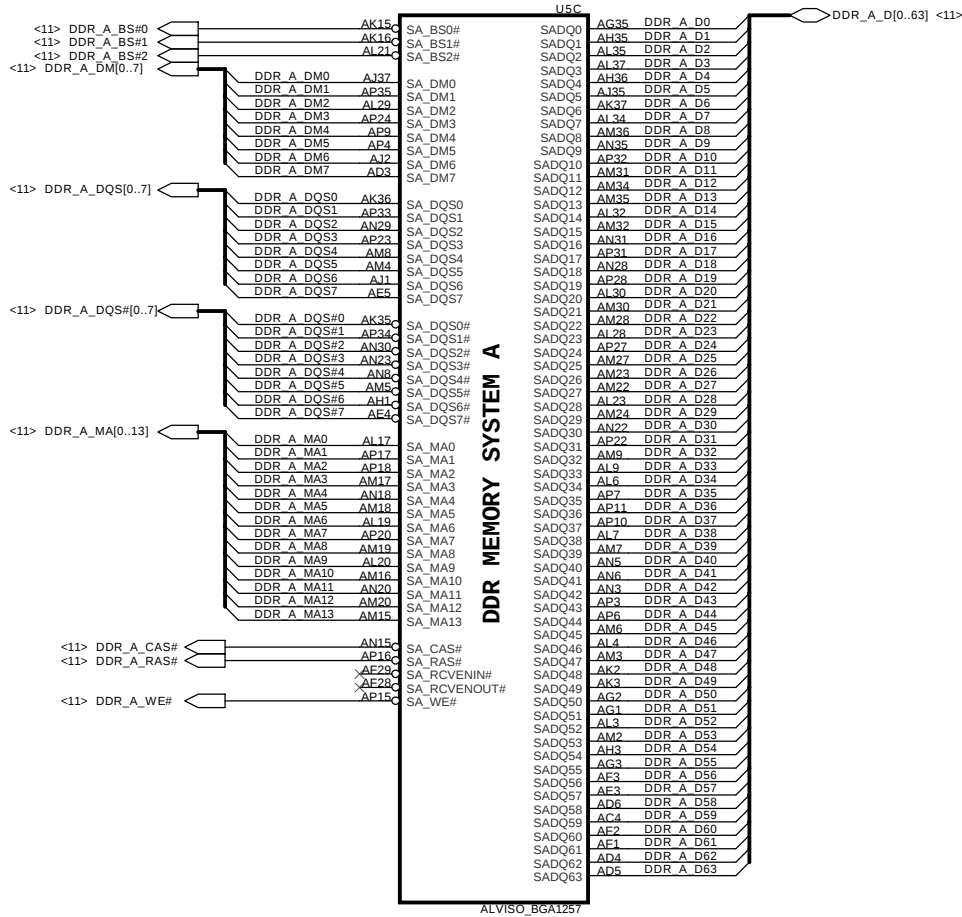
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THERMDA & THERMDC Trace / Space = 10 / 10 mil

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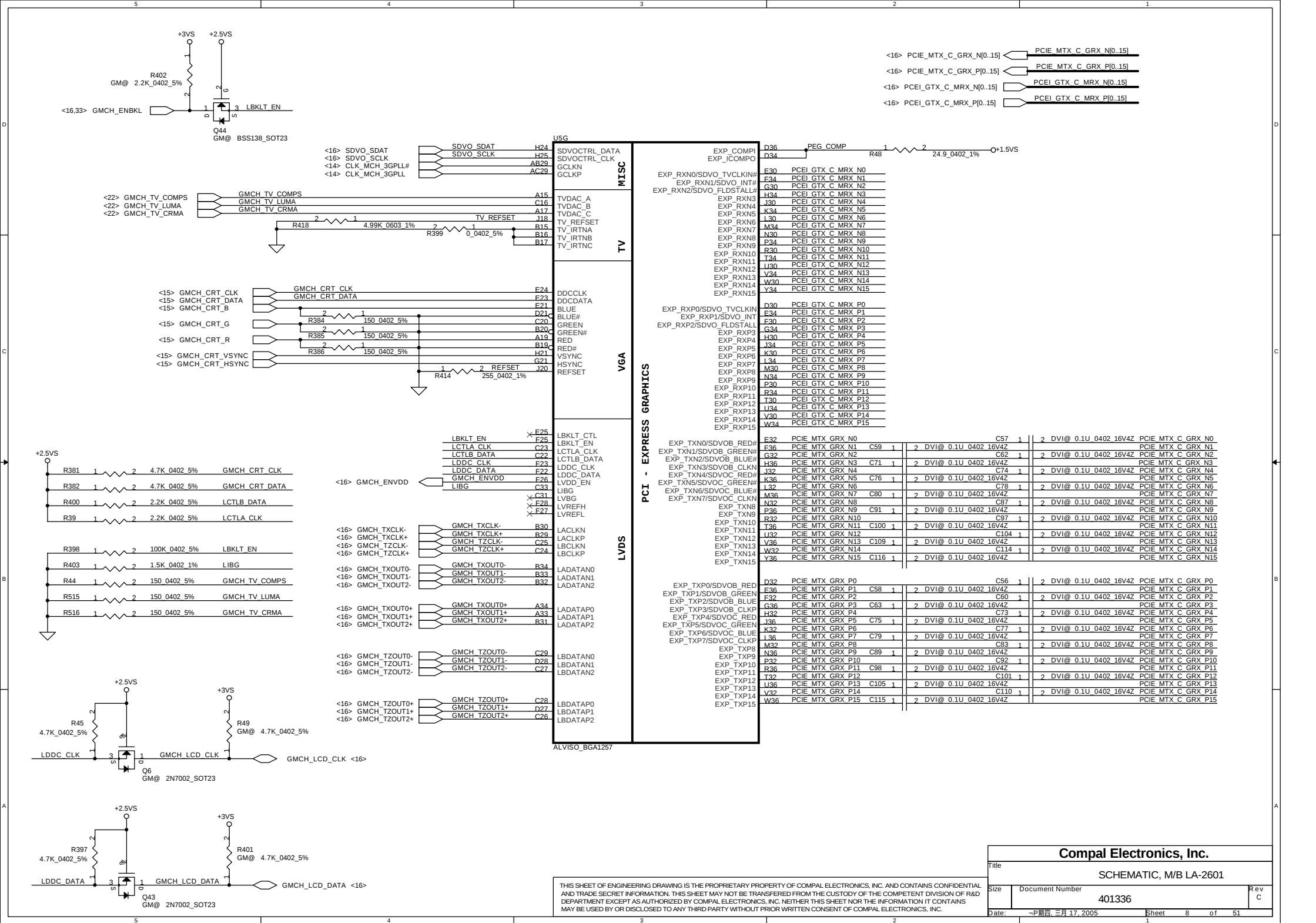


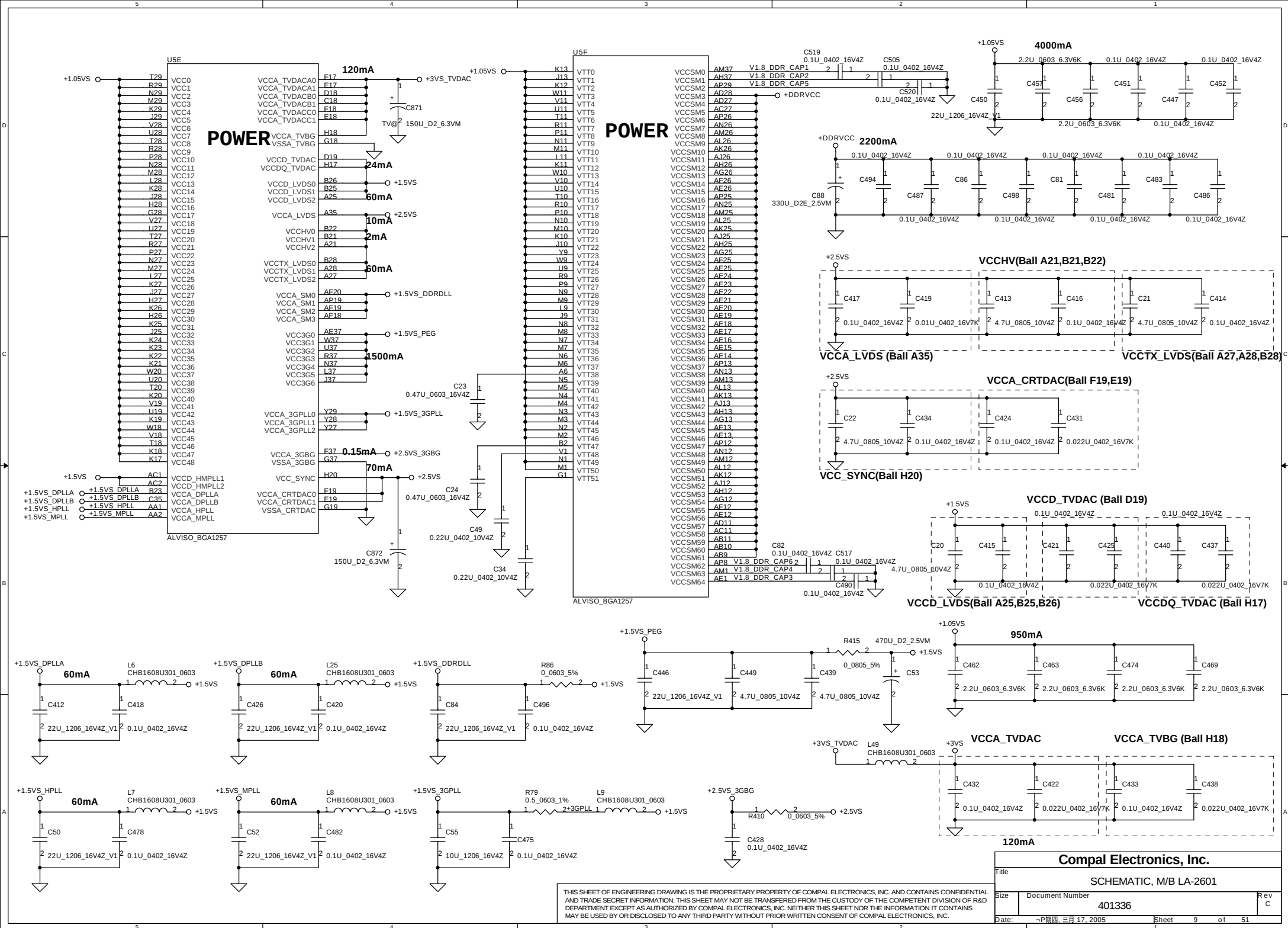


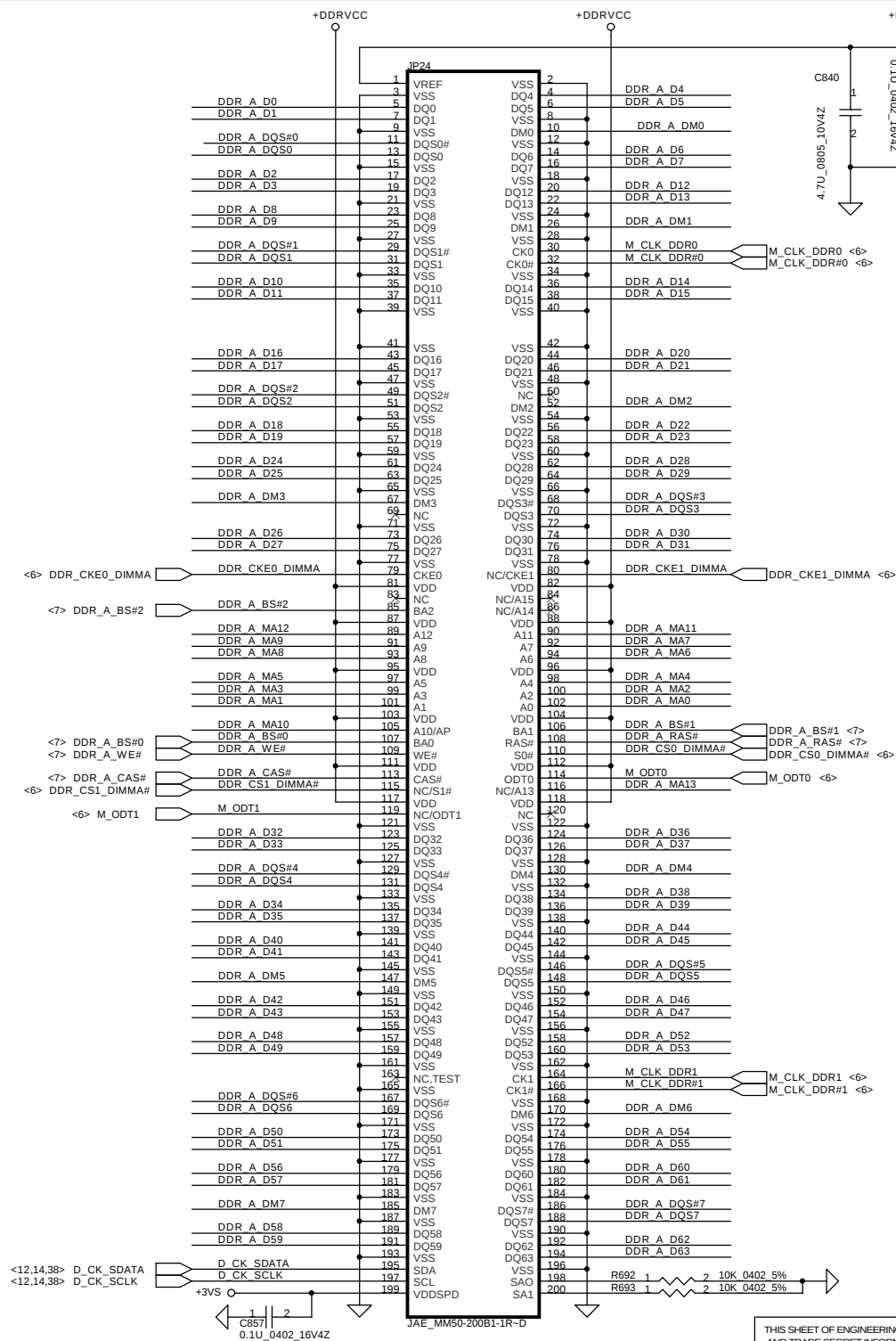


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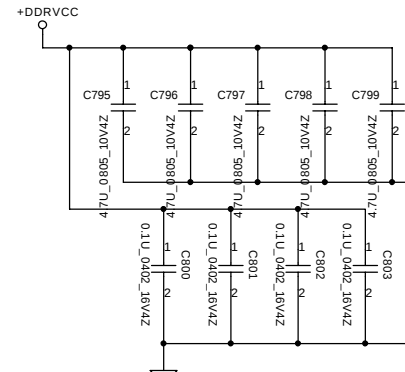
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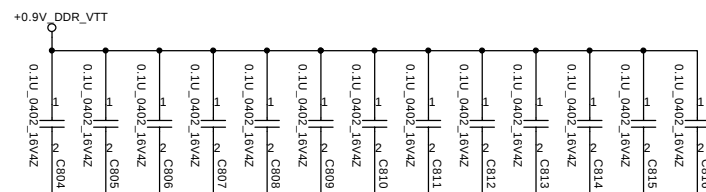




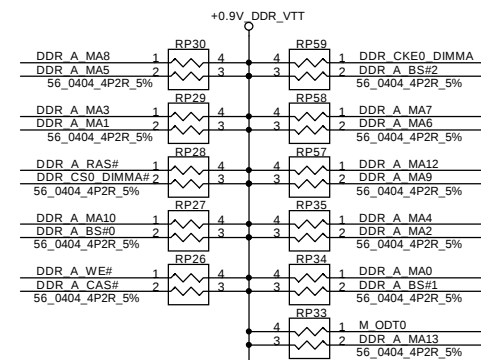
<7> DDR_A_D[0..63] DDR A D[0..63]
 <7> DDR_A_DM[0..7] DDR A DM[0..7]
 <7> DDR_A_DQS[0..7] DDR A DQS[0..7]
 <7> DDR_A_MA[0..13] DDR A MA[0..13]
 <7> DDR_A_DQS#[0..7] DDR A DQS#[0..7]



Layout Note:
Place near DIMM



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

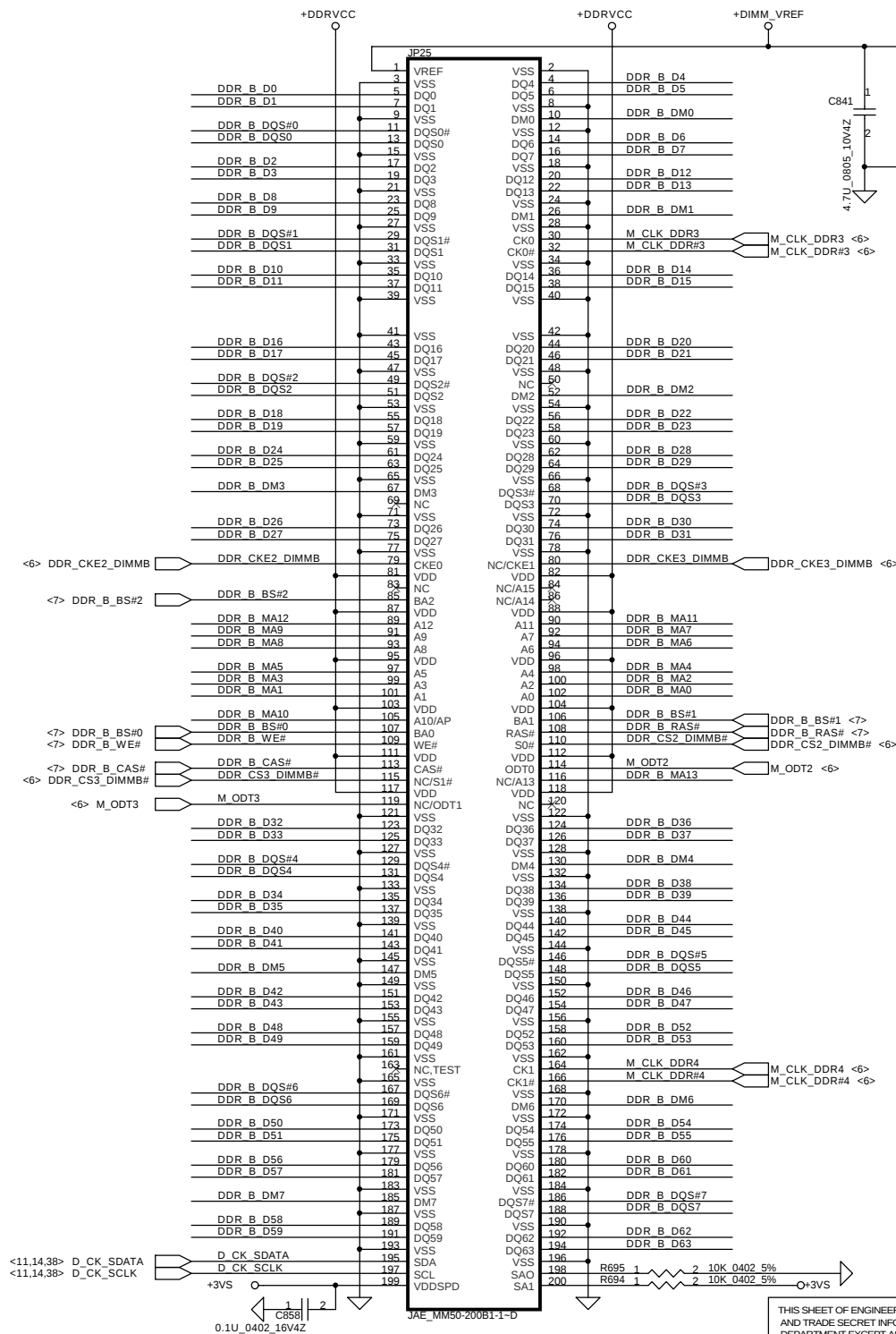


Layout Note:
Place these resistor closely DIMM0, all trace length<750 mil

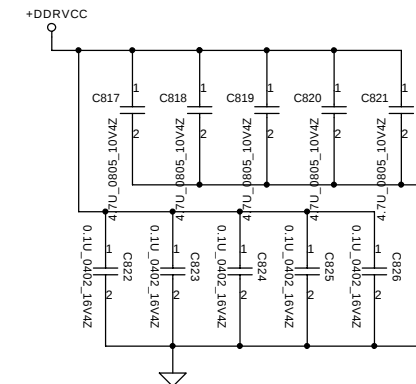
Layout Note:
Place these resistor closely DIMM0, all trace length Max=1.3"

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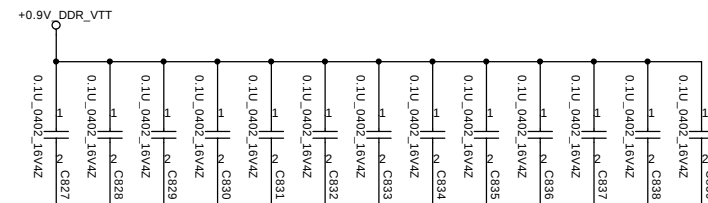
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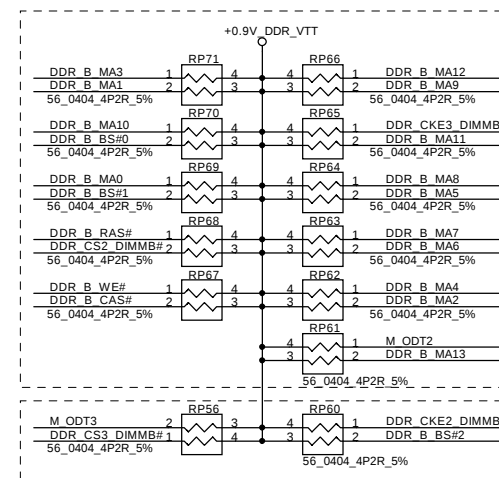
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 <7> DDR_B_MA[0..13]
 <7> DDR_B_DQS#[0..7]



Layout Note:
Place near DIMM



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



Layout Note:
Place these resistor closely DIMM0, all trace length < 750 mil

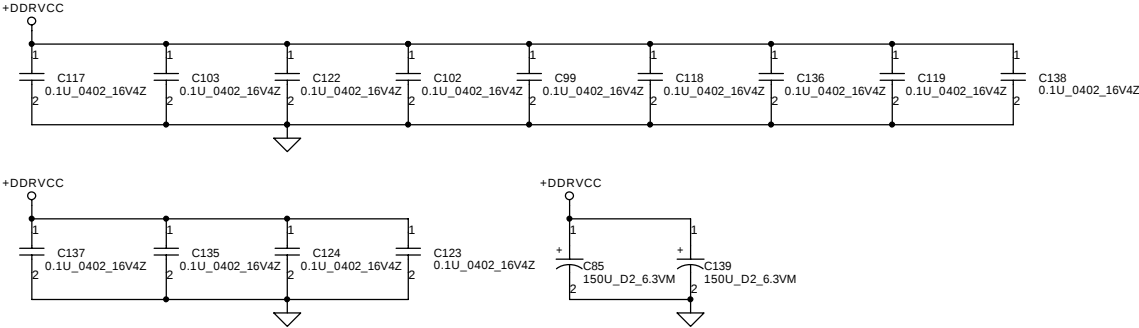
Layout Note:
Place these resistor closely DIMM0, all trace length Max=1.3"

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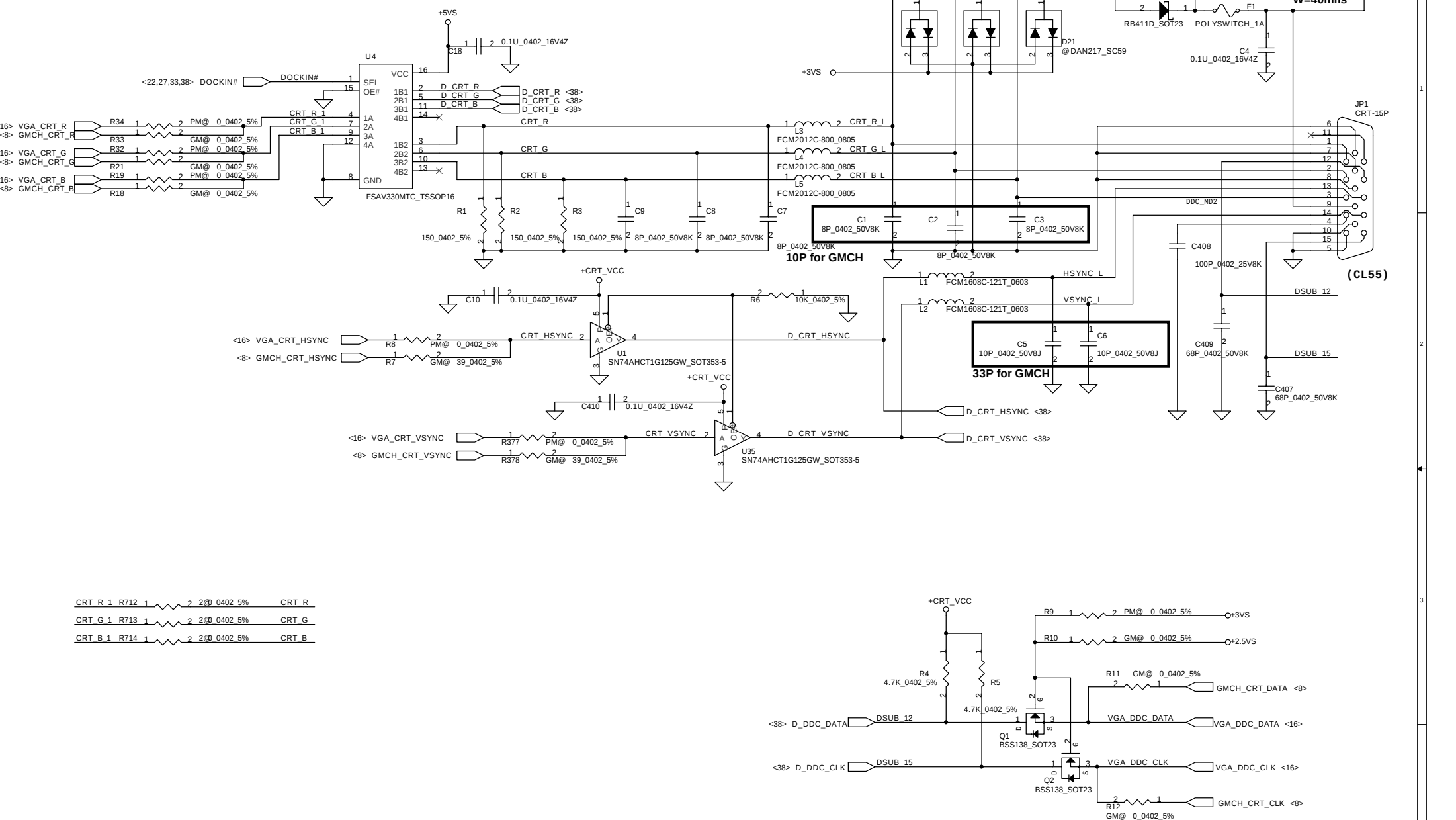
Layout note :
Distribute as close as possible
to DDR-SODIMM.



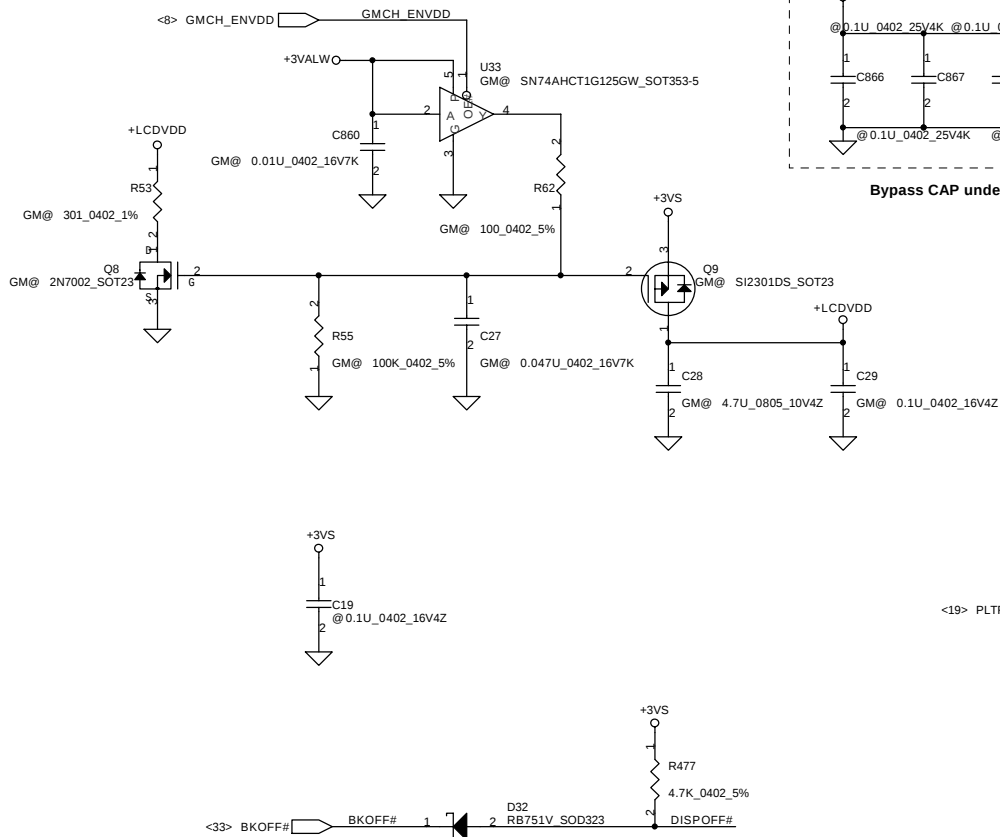
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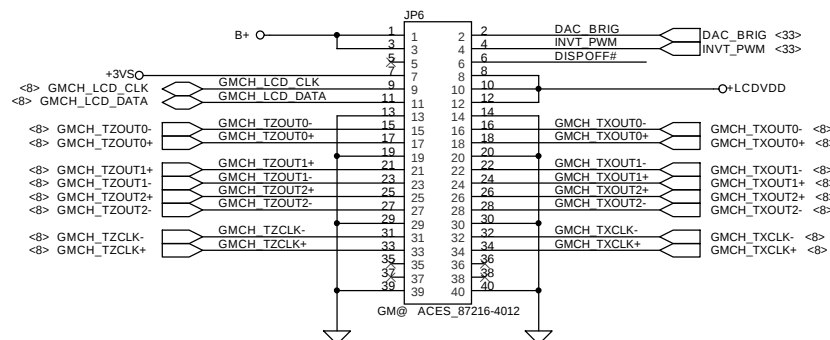
CRT Connector



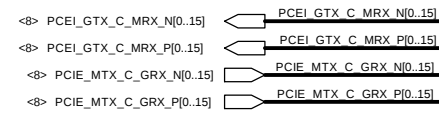
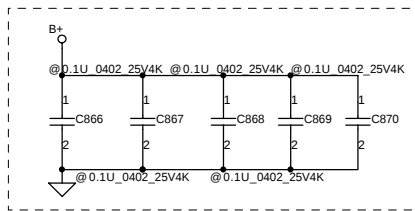
LCD POWER CIRCUIT



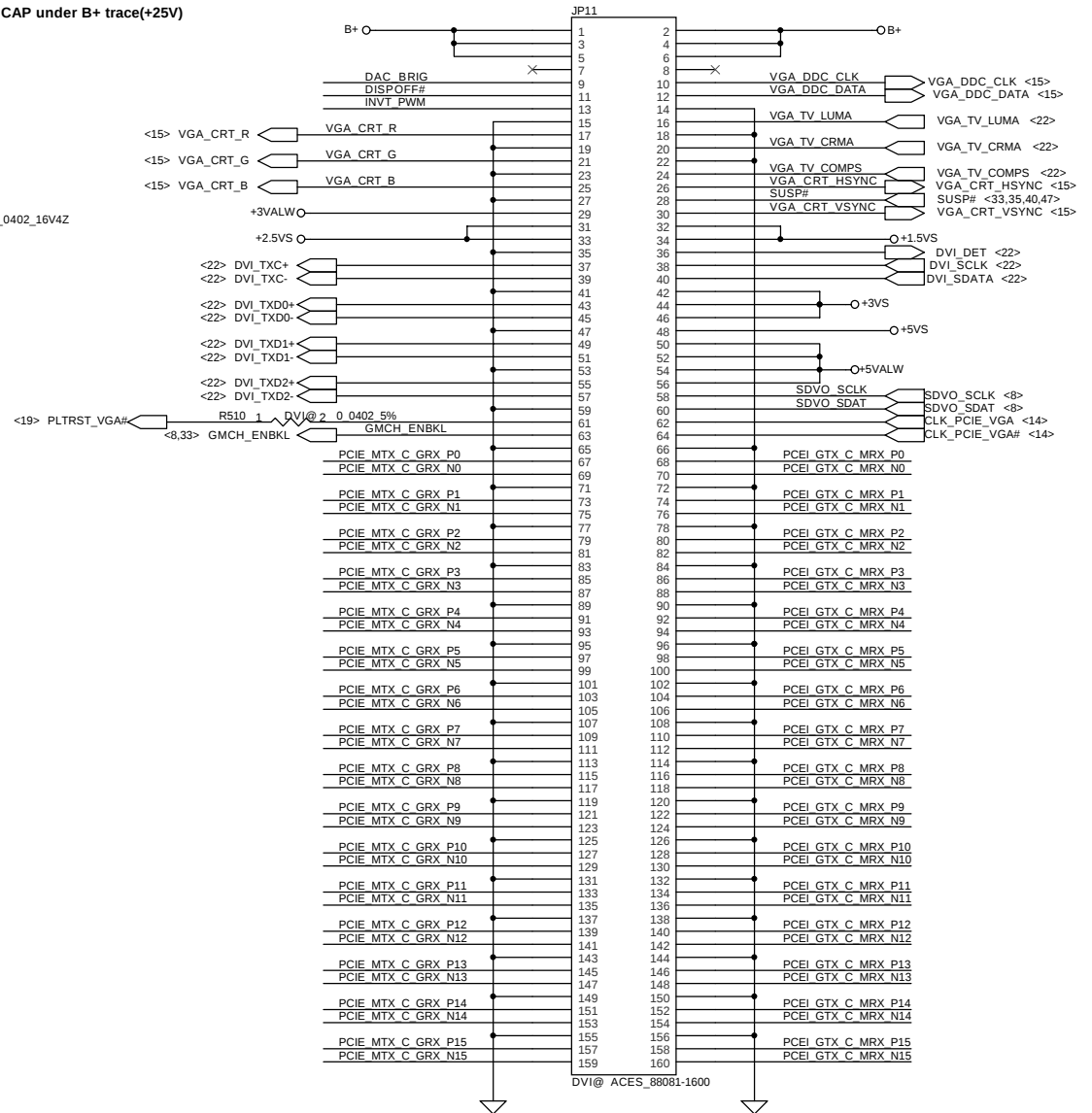
LCD/PANEL BD. Conn.



Bypass CAP under B+ trace(+25V)



VGA BOARD Conn.



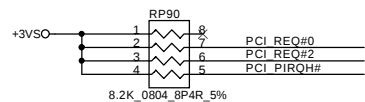
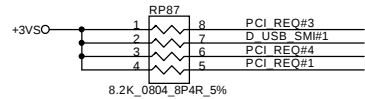
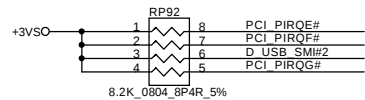
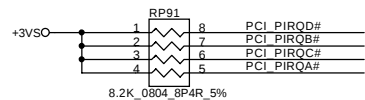
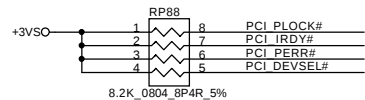
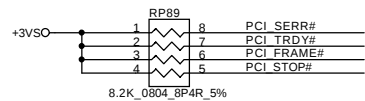
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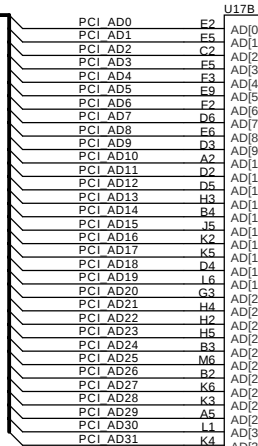


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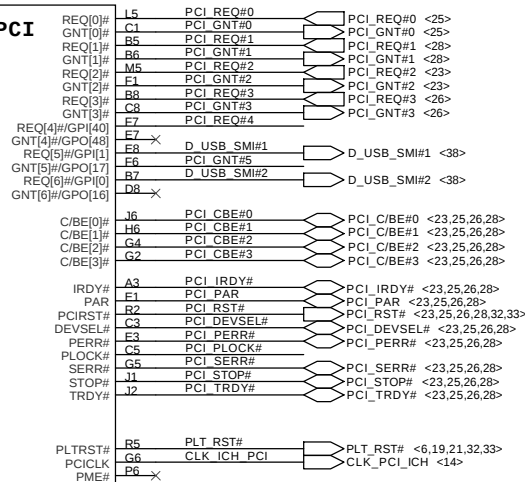
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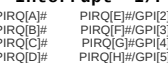
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PCI



Interrupt I/F

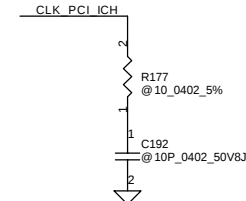
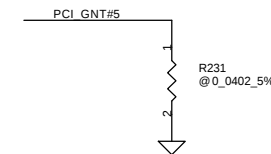


RESERVED



ICH6_BGA609

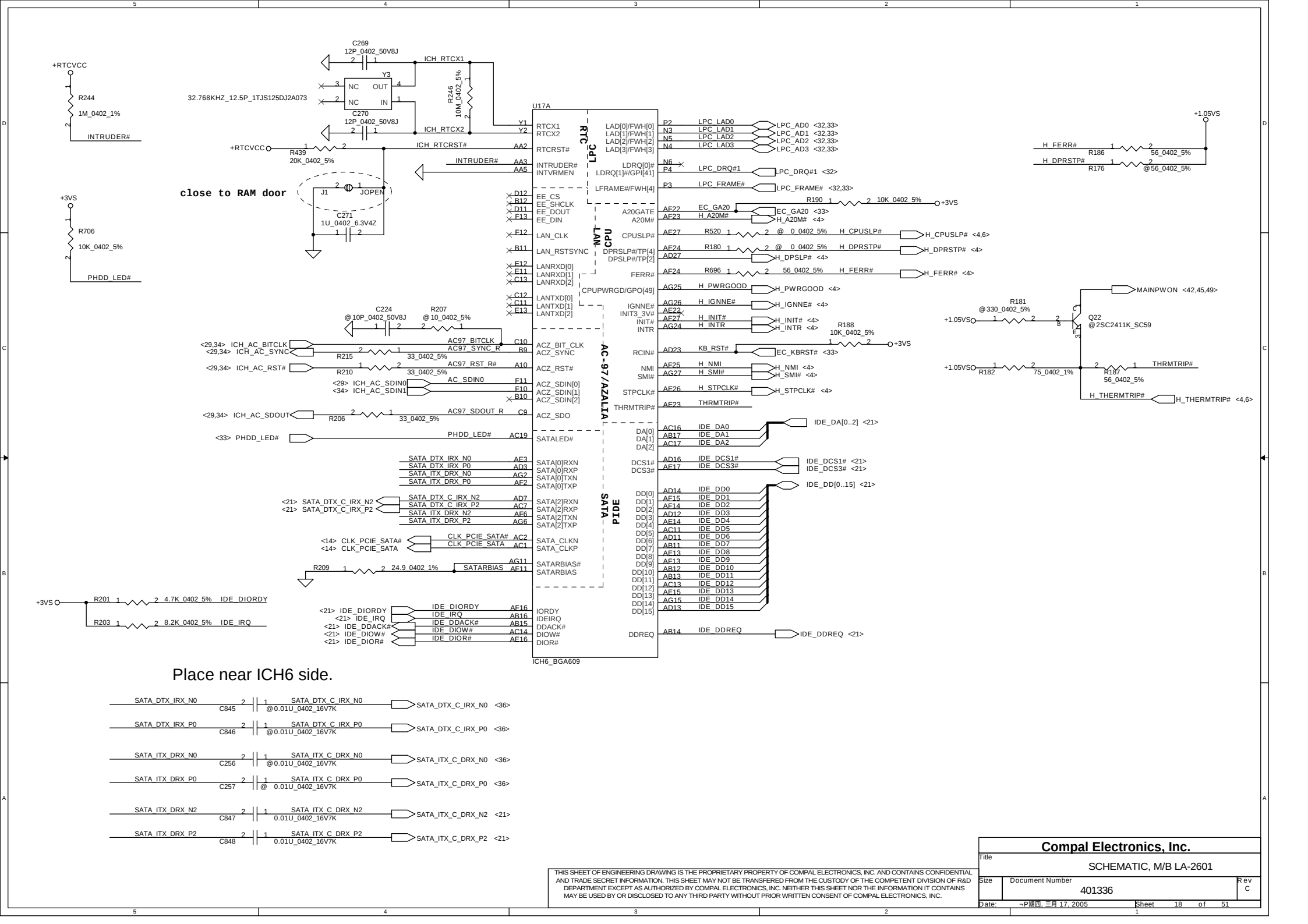
Internal Pull-up.
Sample high destination is LPC.

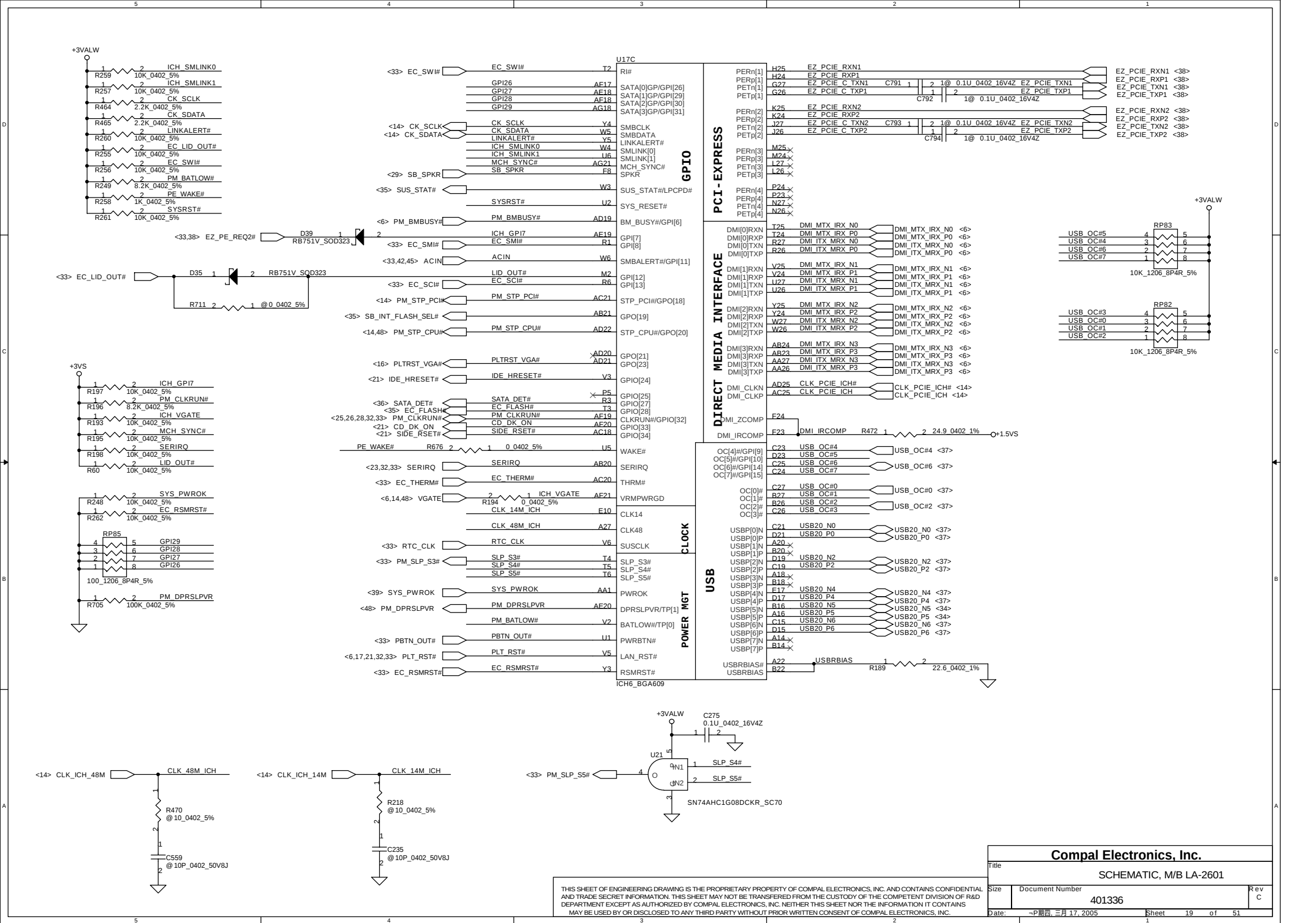


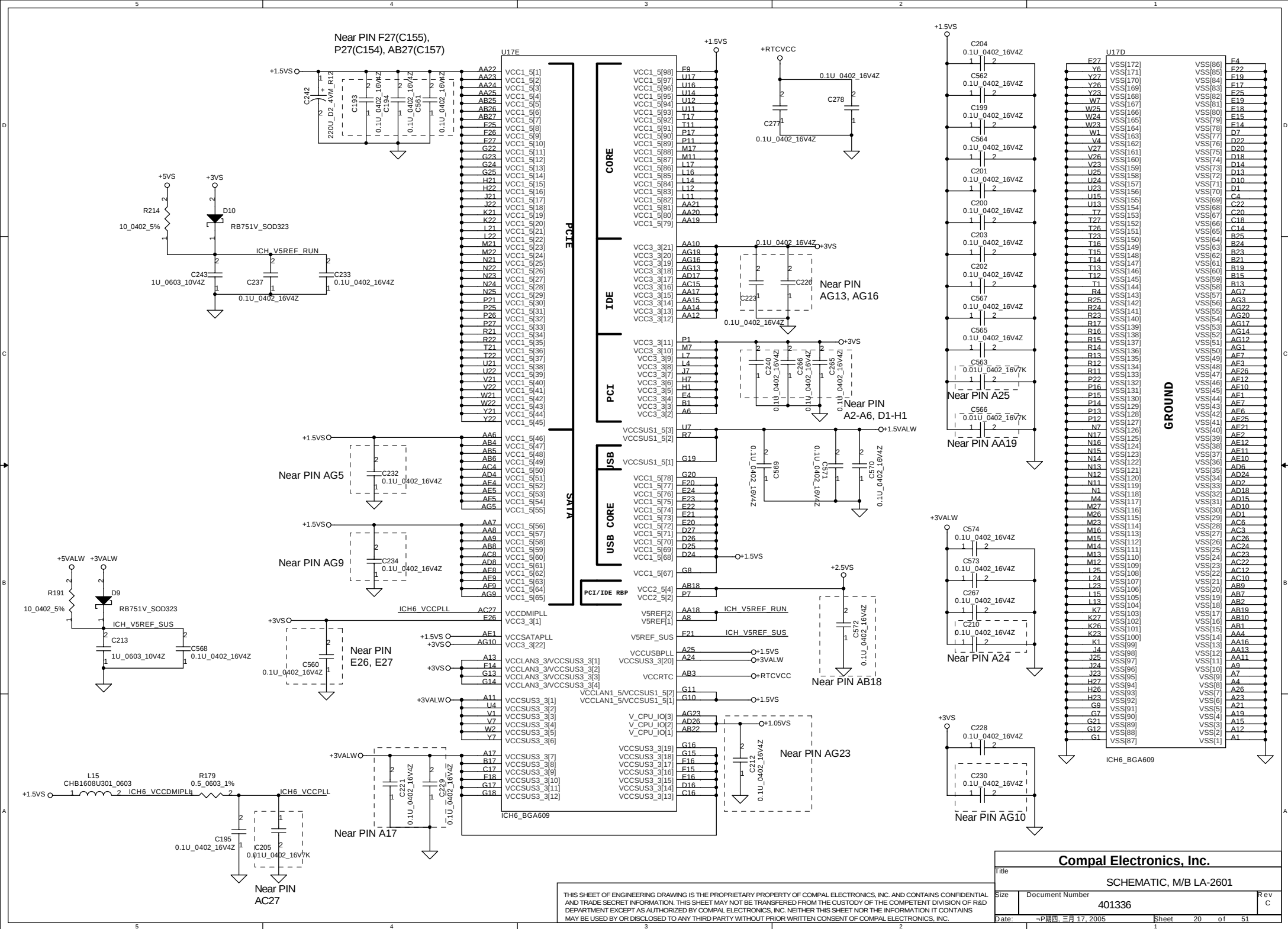
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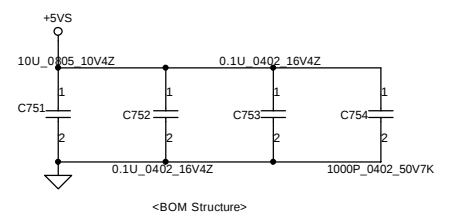
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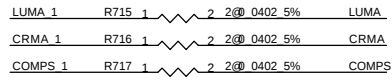
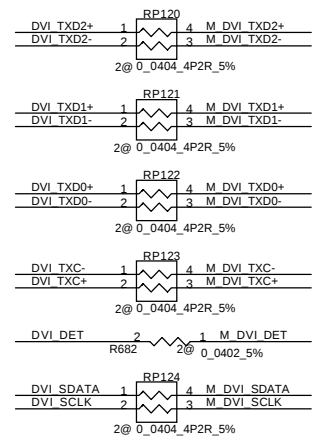
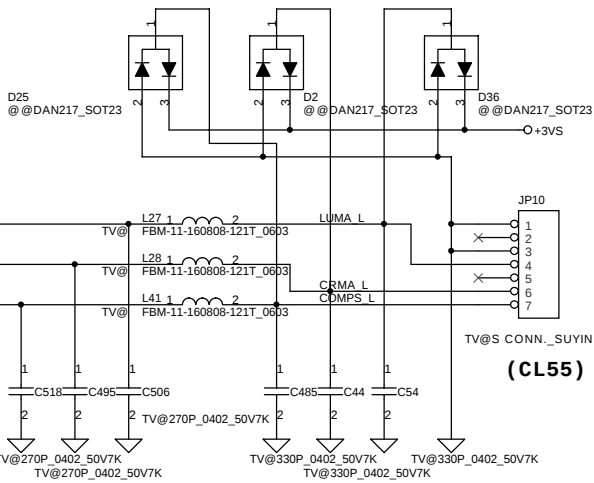
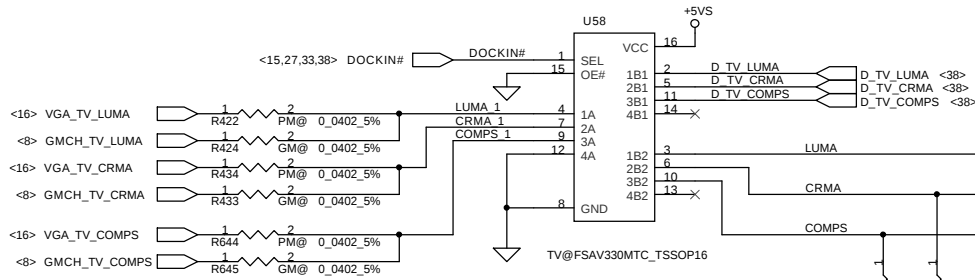
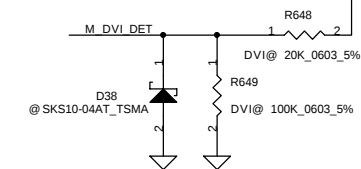
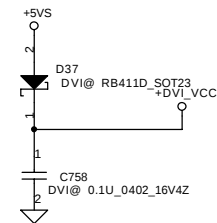
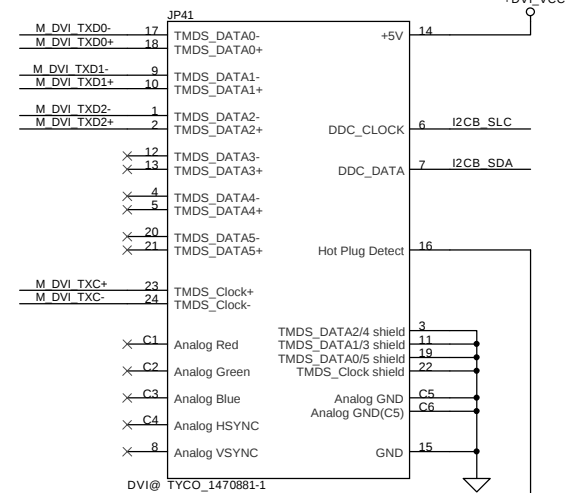
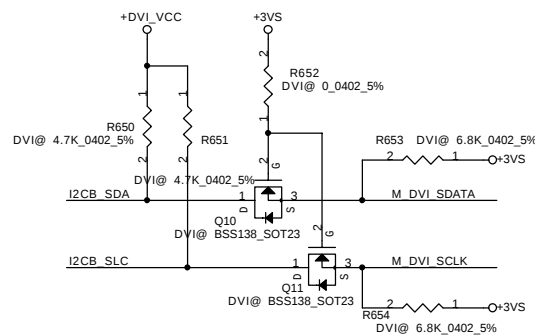
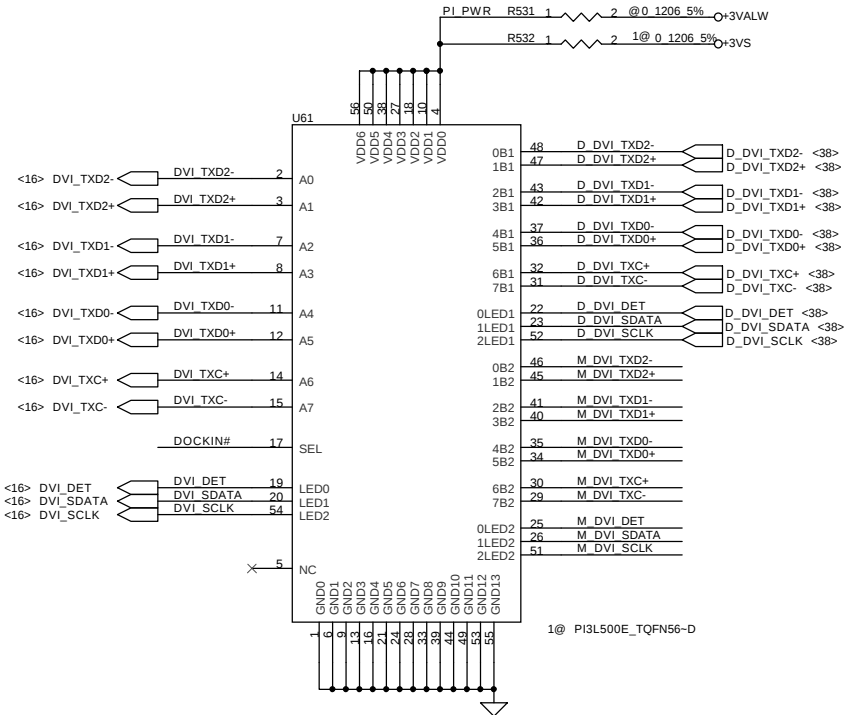




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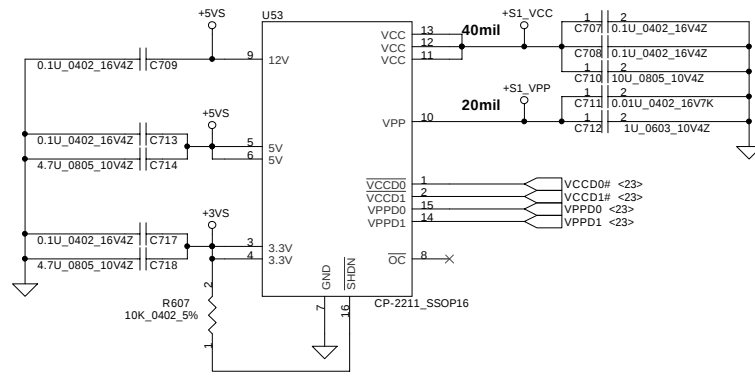
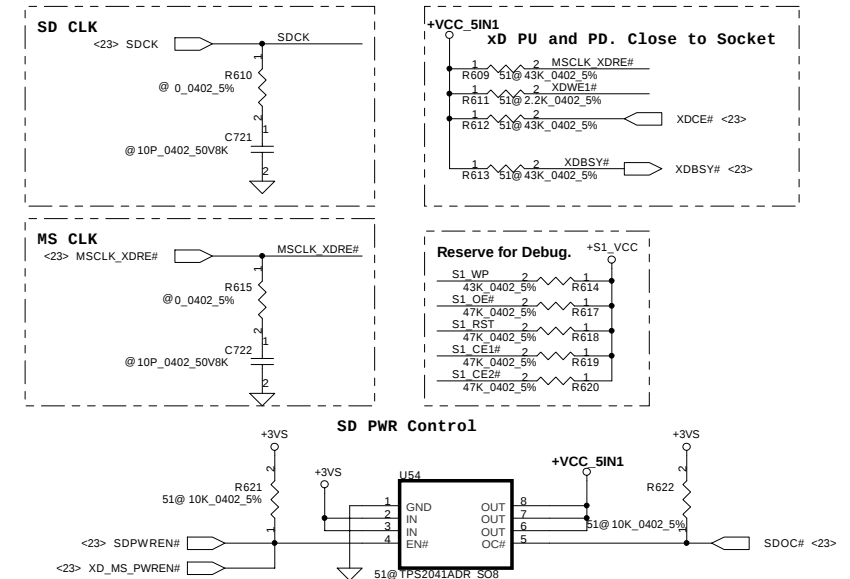
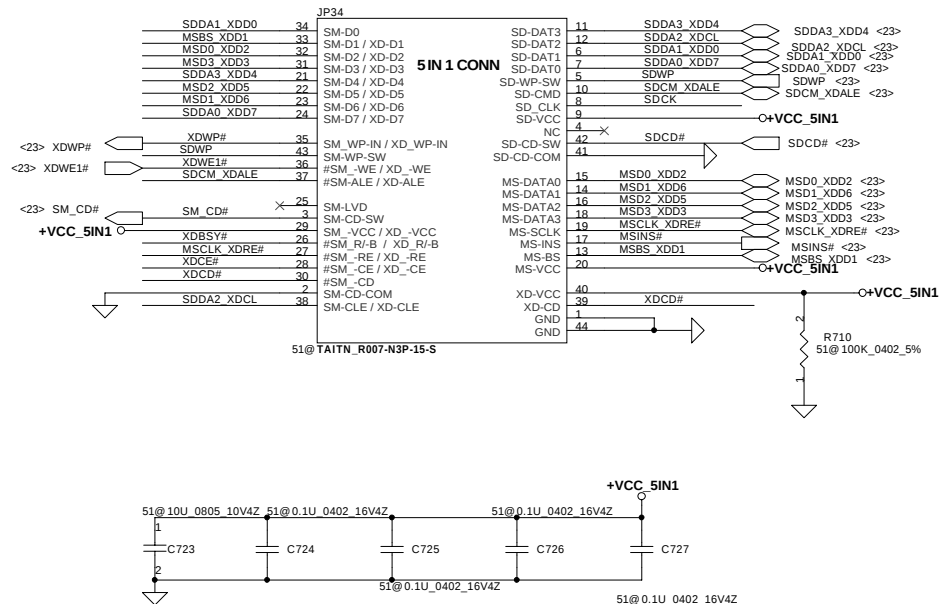
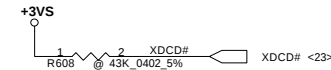
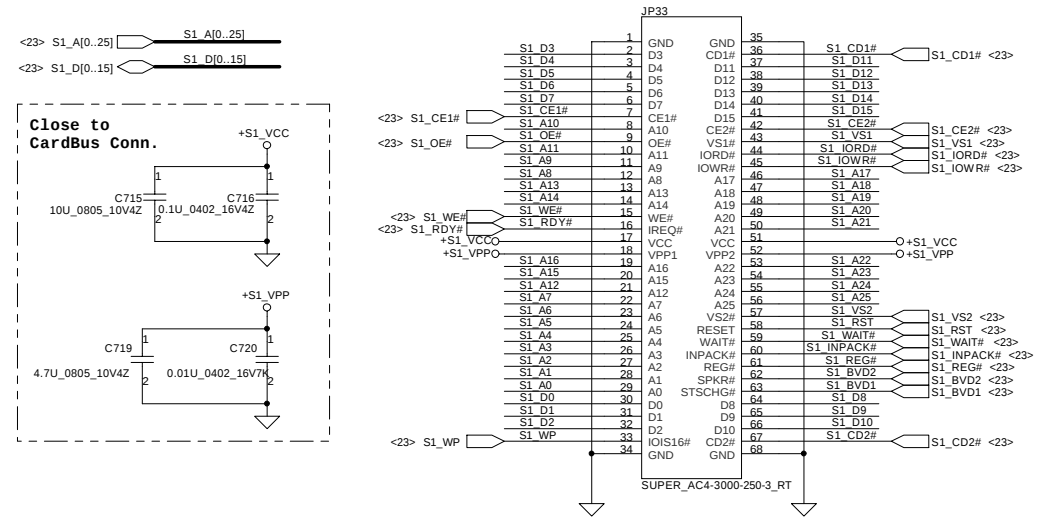
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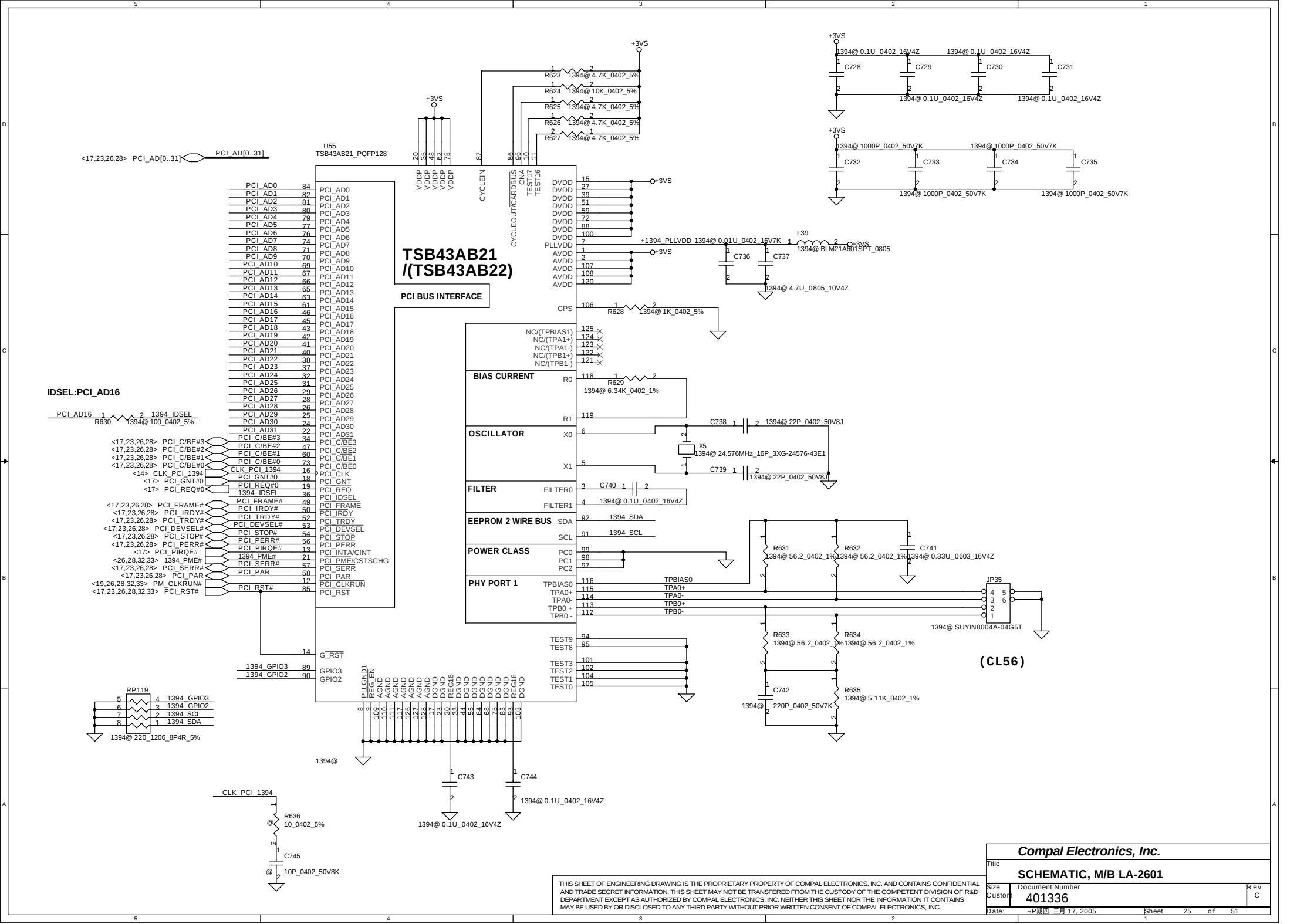


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PCMCIA Power Controller

**CardBus Socket**

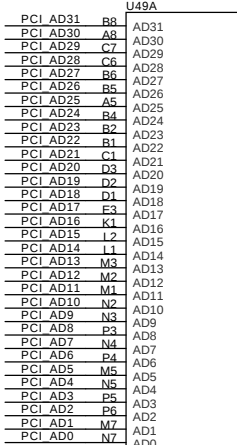
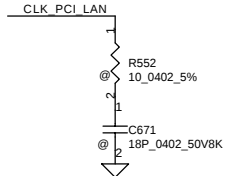


EN_WOL# = Low,
System can wake on LAN
(keep Low when Power On)

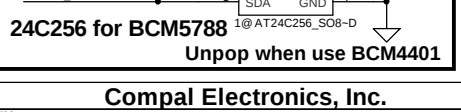
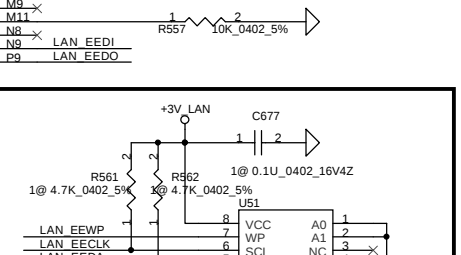
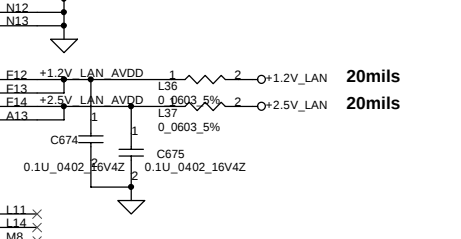
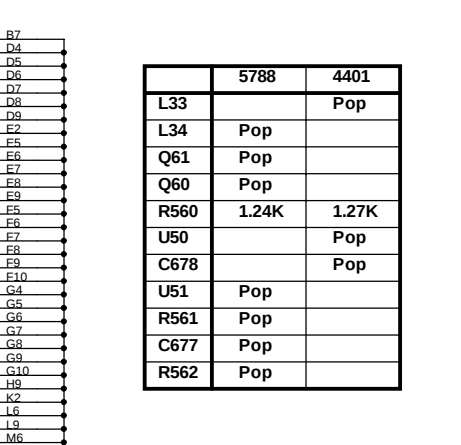
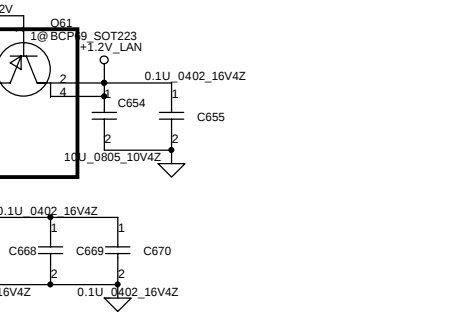
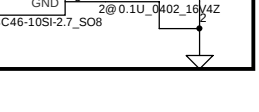
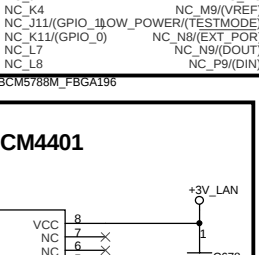
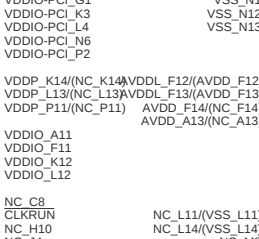
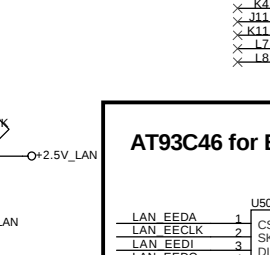
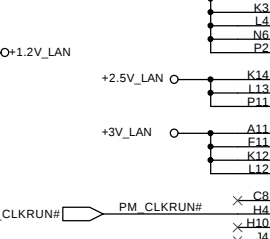
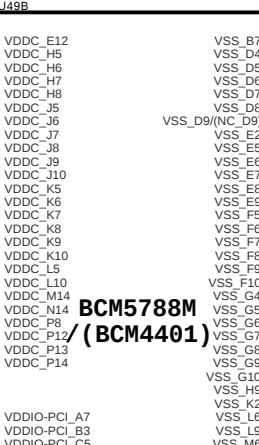
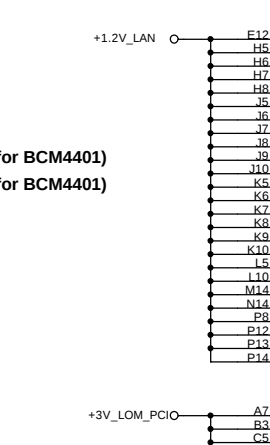
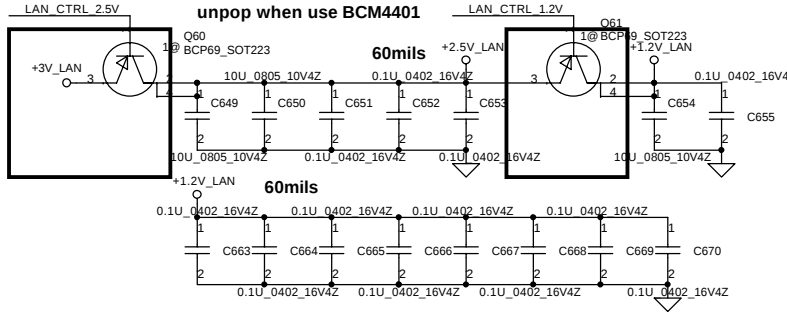
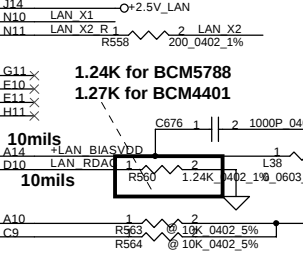
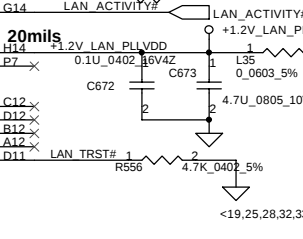
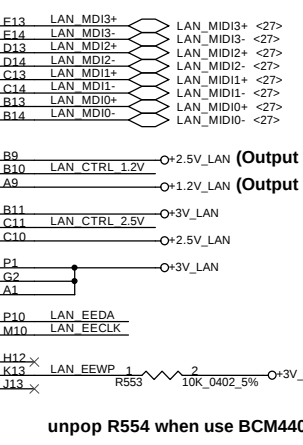
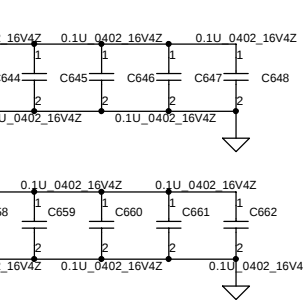
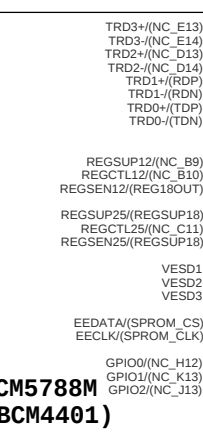
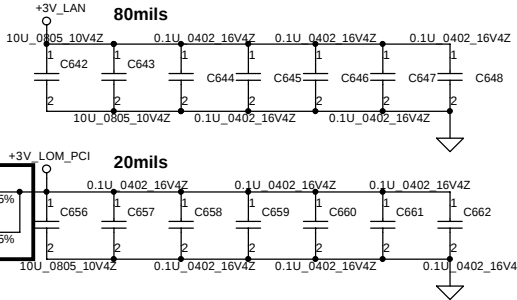
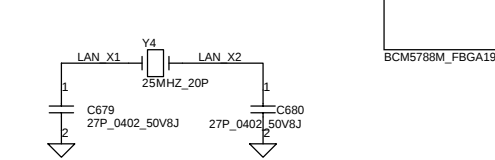
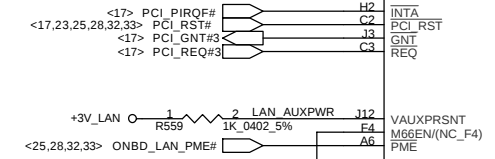
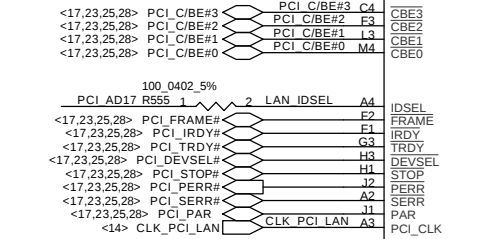
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IDmax = 2.3A

+3VS for BCM5788
+3V_LAN for BCM4401

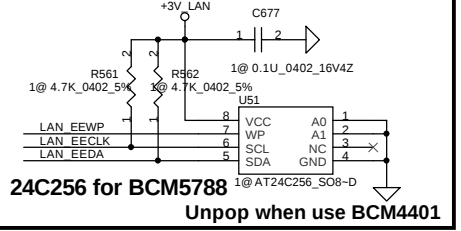
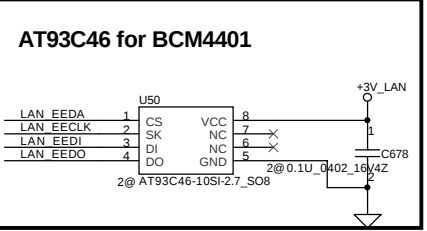
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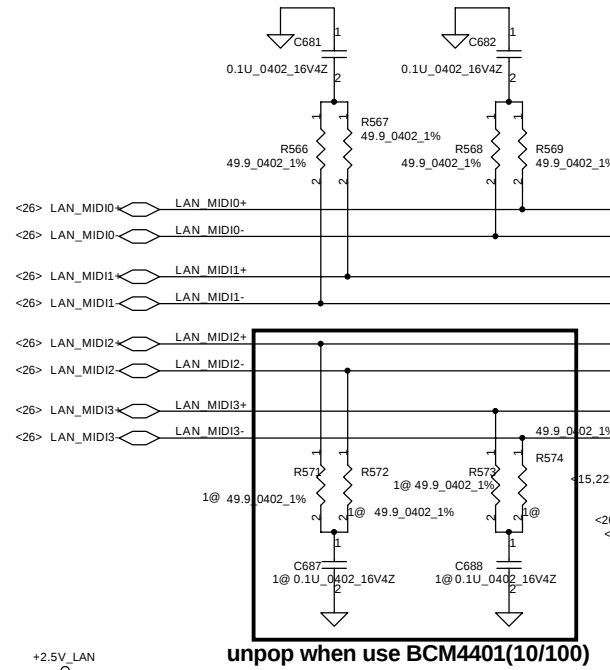
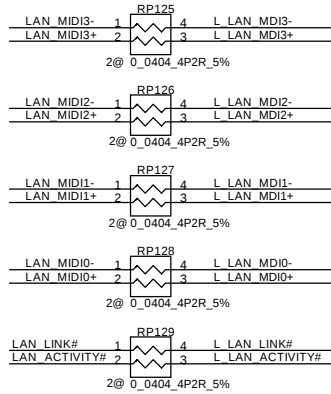
BCM5788M
/(BCM4401)



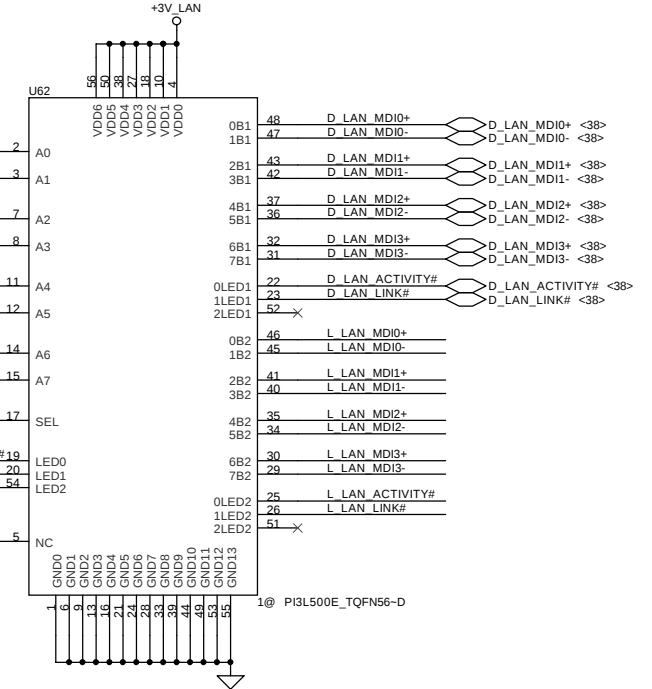
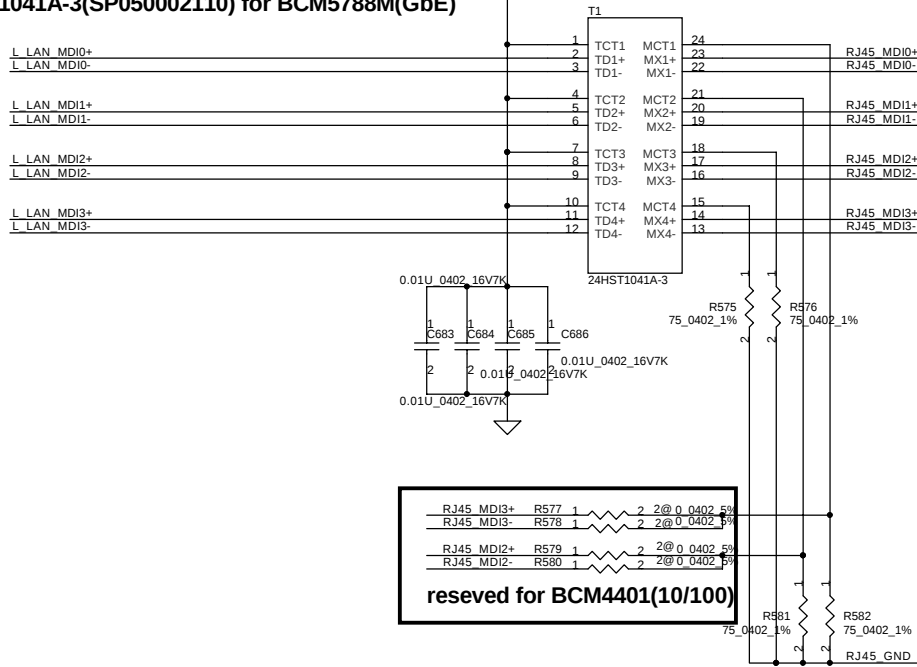
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L33		Pop
L34	Pop	
Q61	Pop	
Q60	Pop	
R560	1.24K	1.27K
U50		Pop
C678		Pop
U51	Pop	
R561	Pop	
C677	Pop	
R562	Pop	



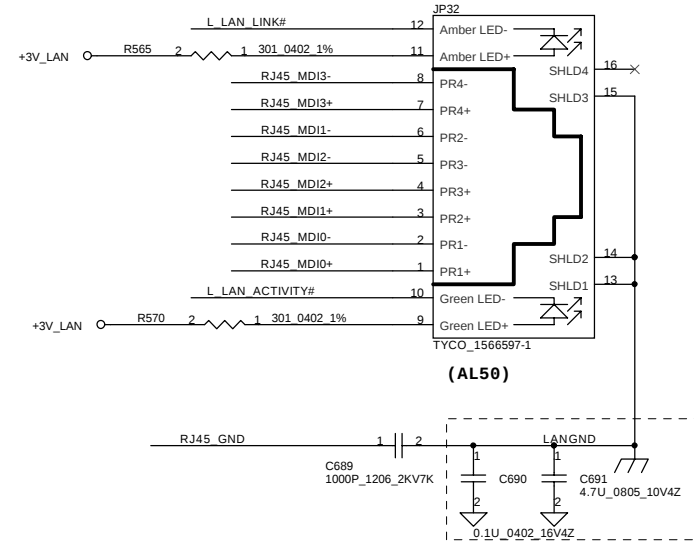
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24ST0023-3(SP050004200) for BCM4401(10/100)
 24HST1041A-3(SP050002110) for BCM5788M(GbE)



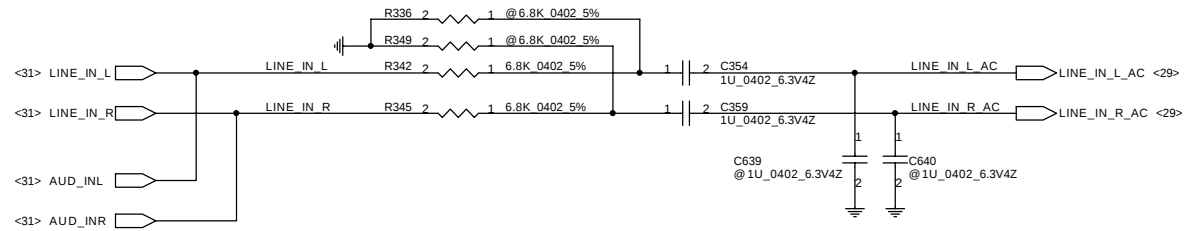
零件有誤, LED 燈要對調



LAN BCM5788M/BCM4401KFB

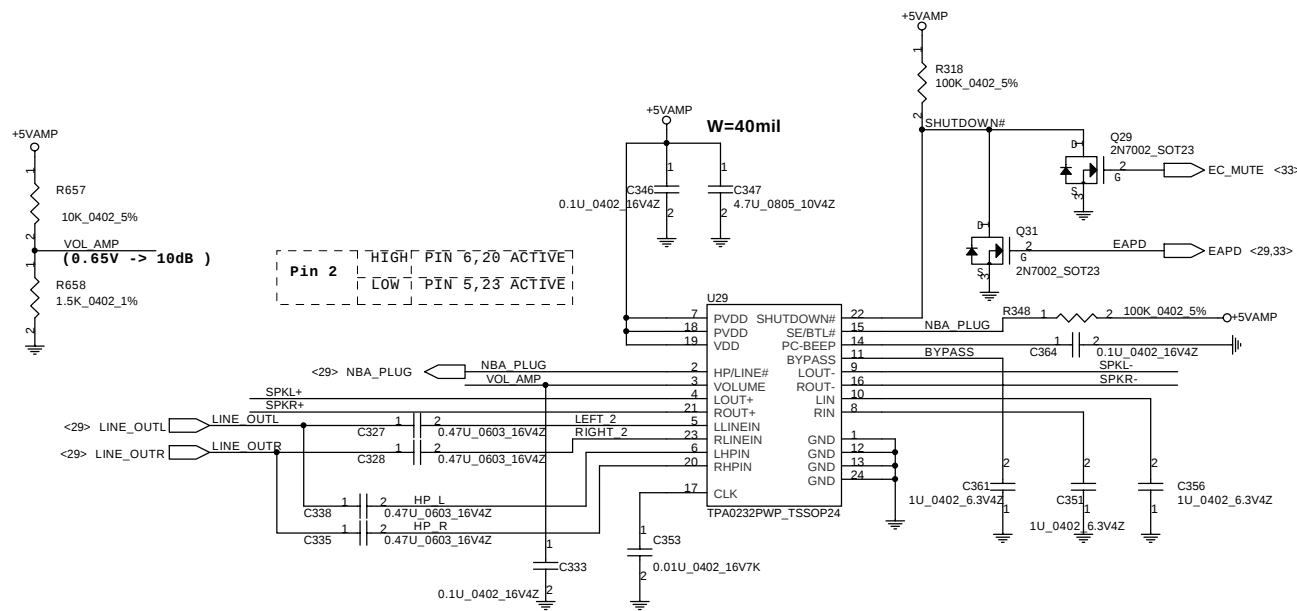
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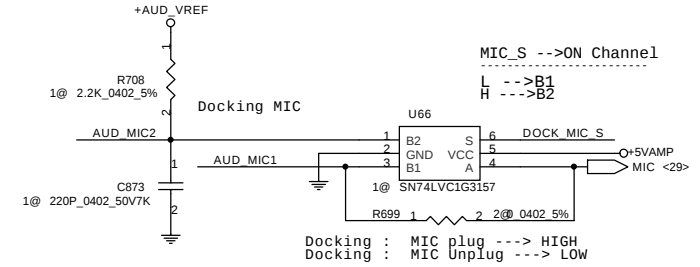
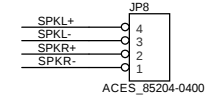


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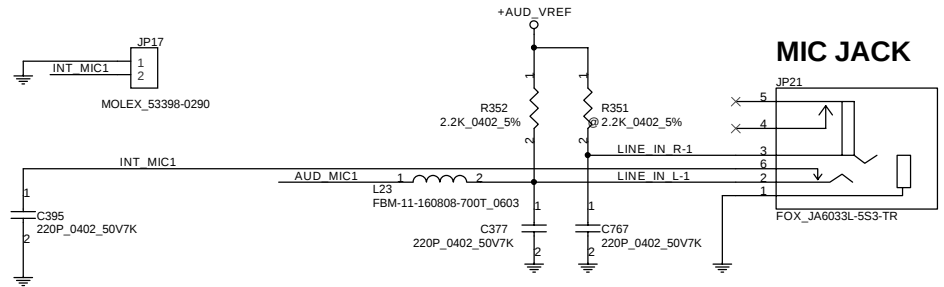
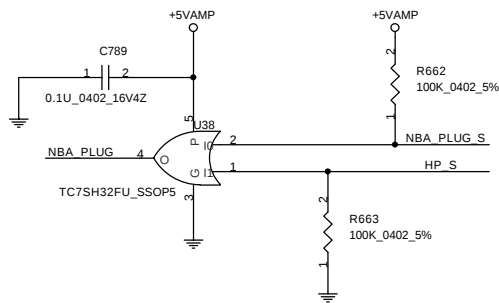
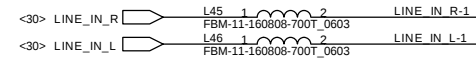
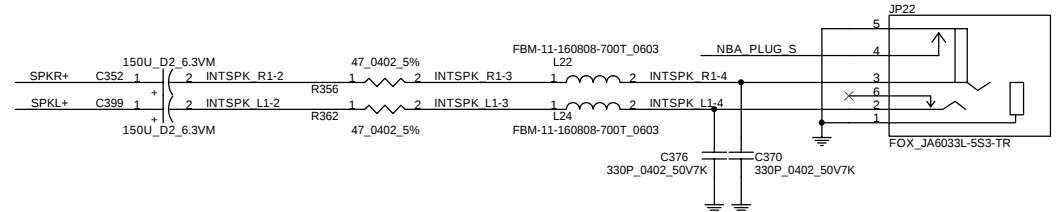
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Speaker Conn.



HeadPhone JACK

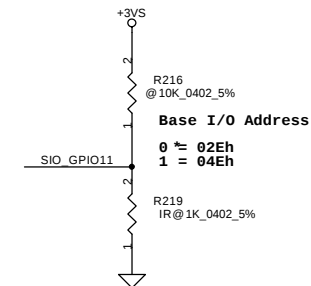
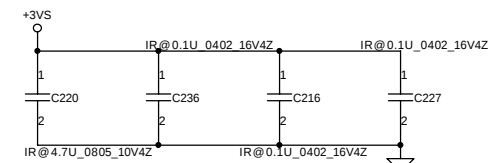
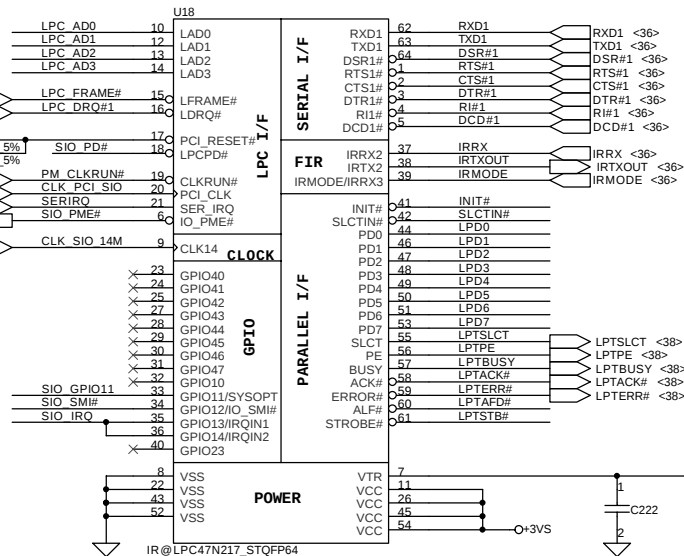
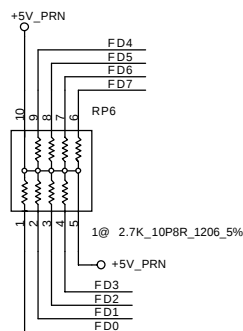
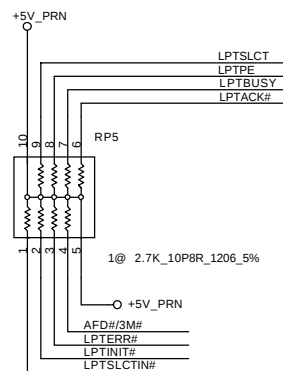
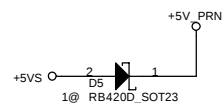
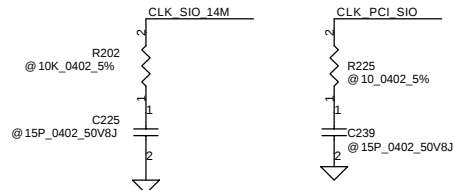
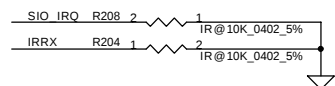
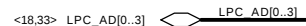
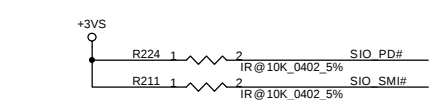


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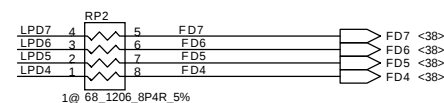
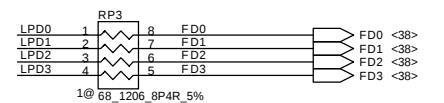
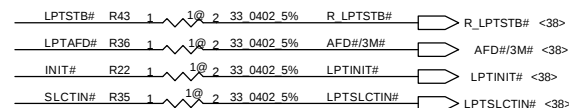
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SUPER I/O SMsC LPC47N217



Close to Docking



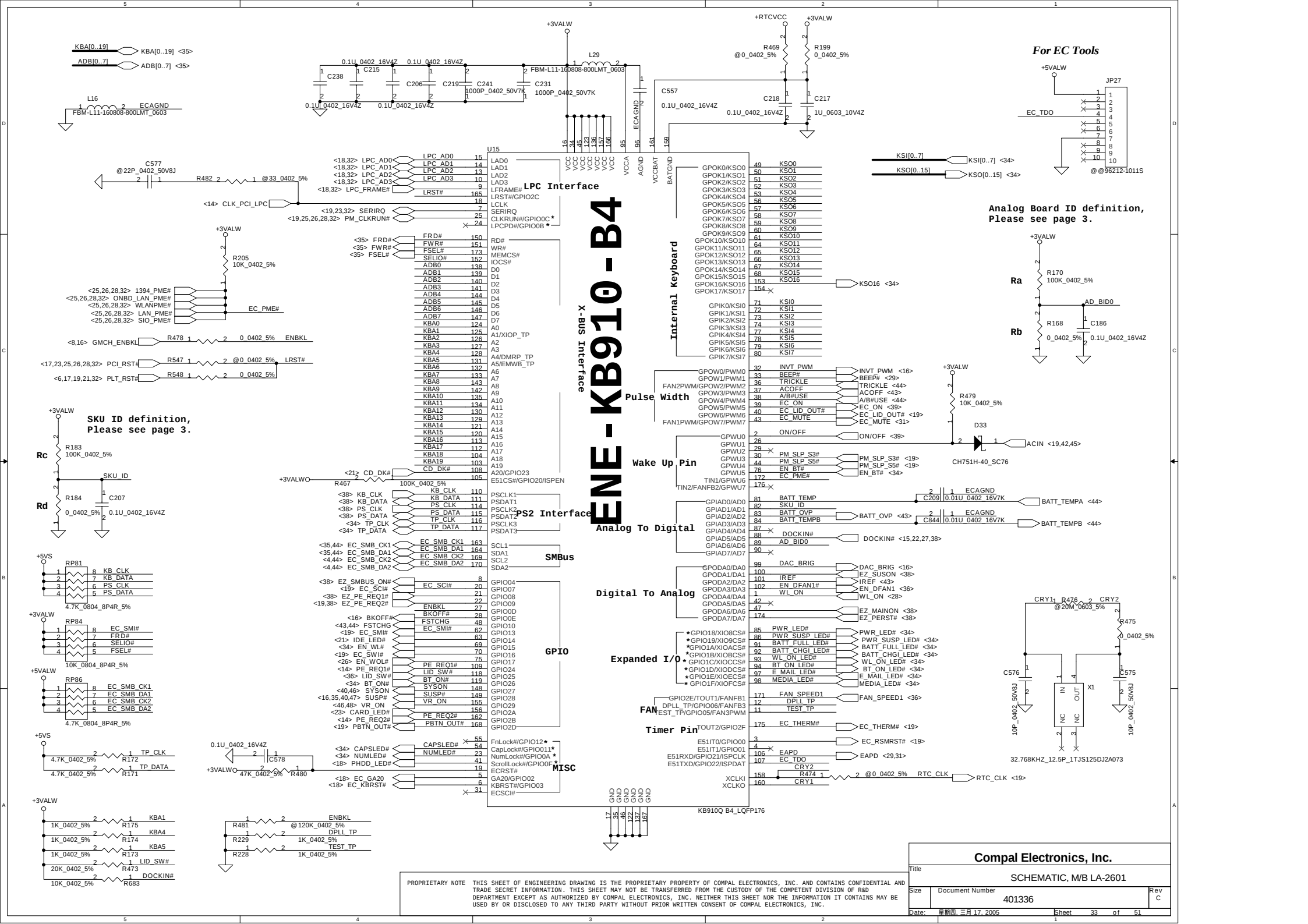
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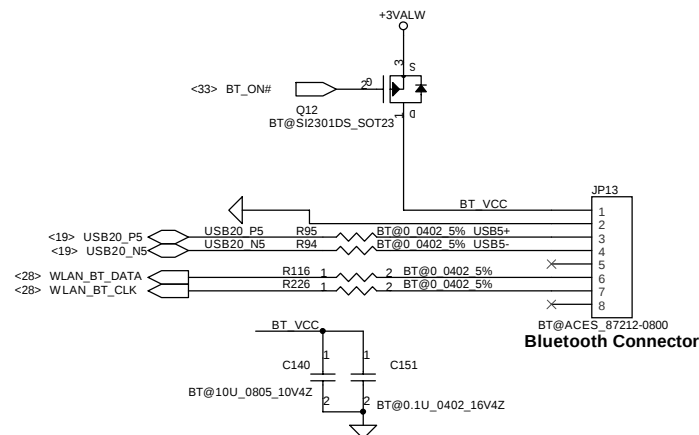
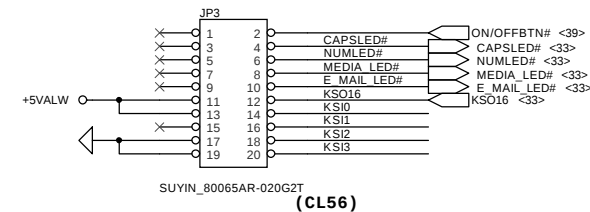
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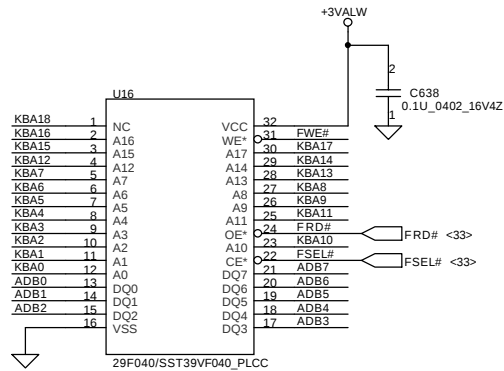




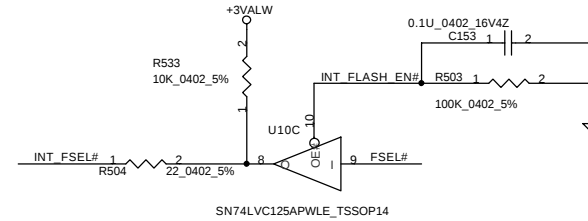
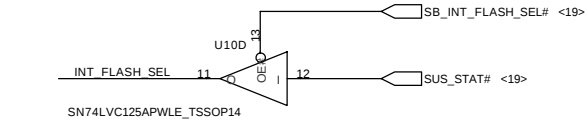
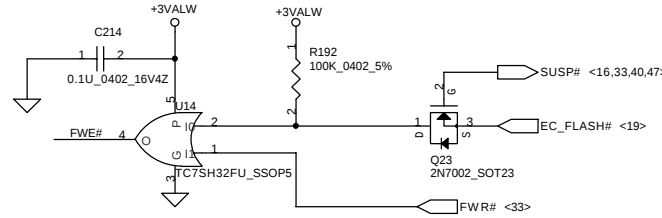
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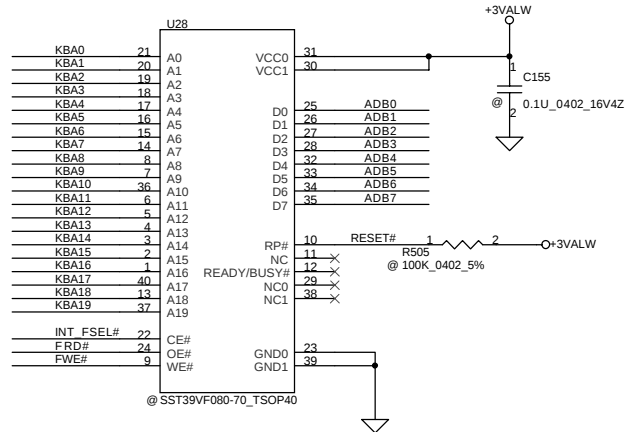
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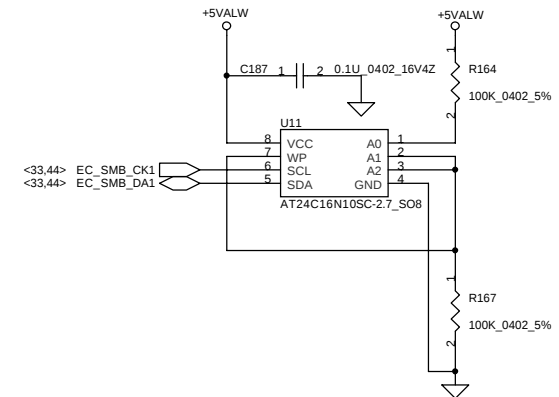
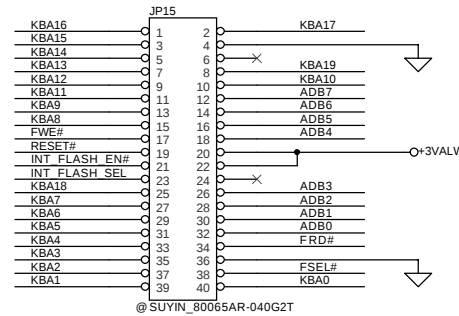
(CL55)



1MB Flash ROM



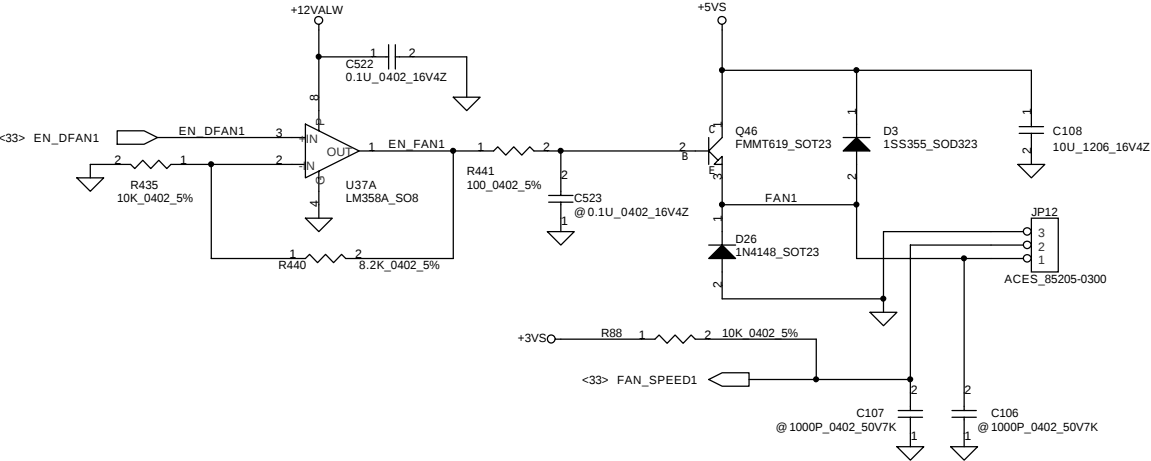
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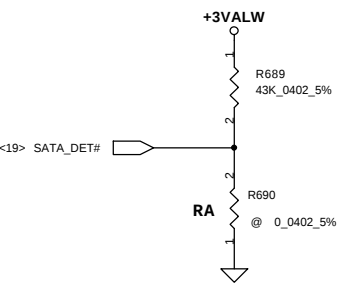
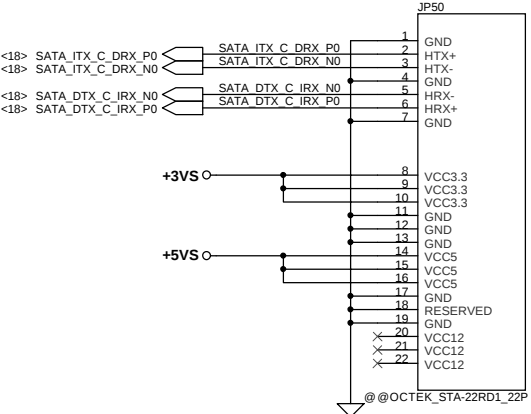
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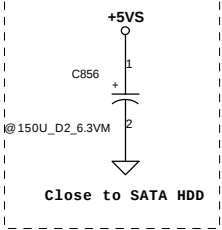
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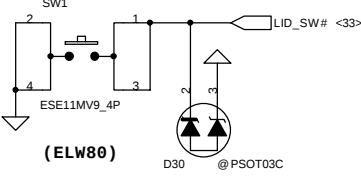
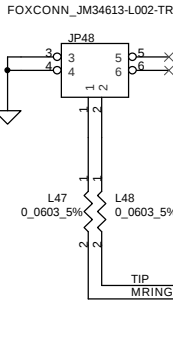
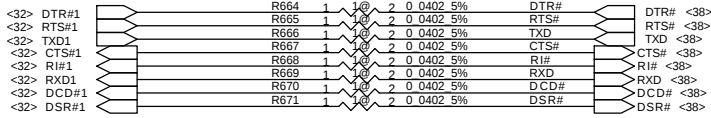
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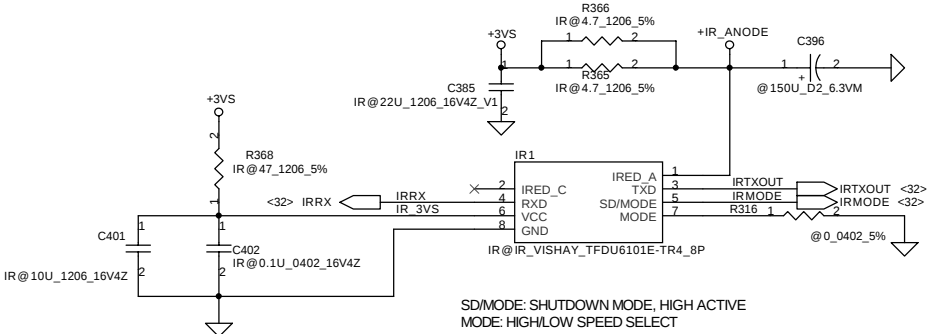
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Presence	POP
Removed	NO POP



Close to Docking

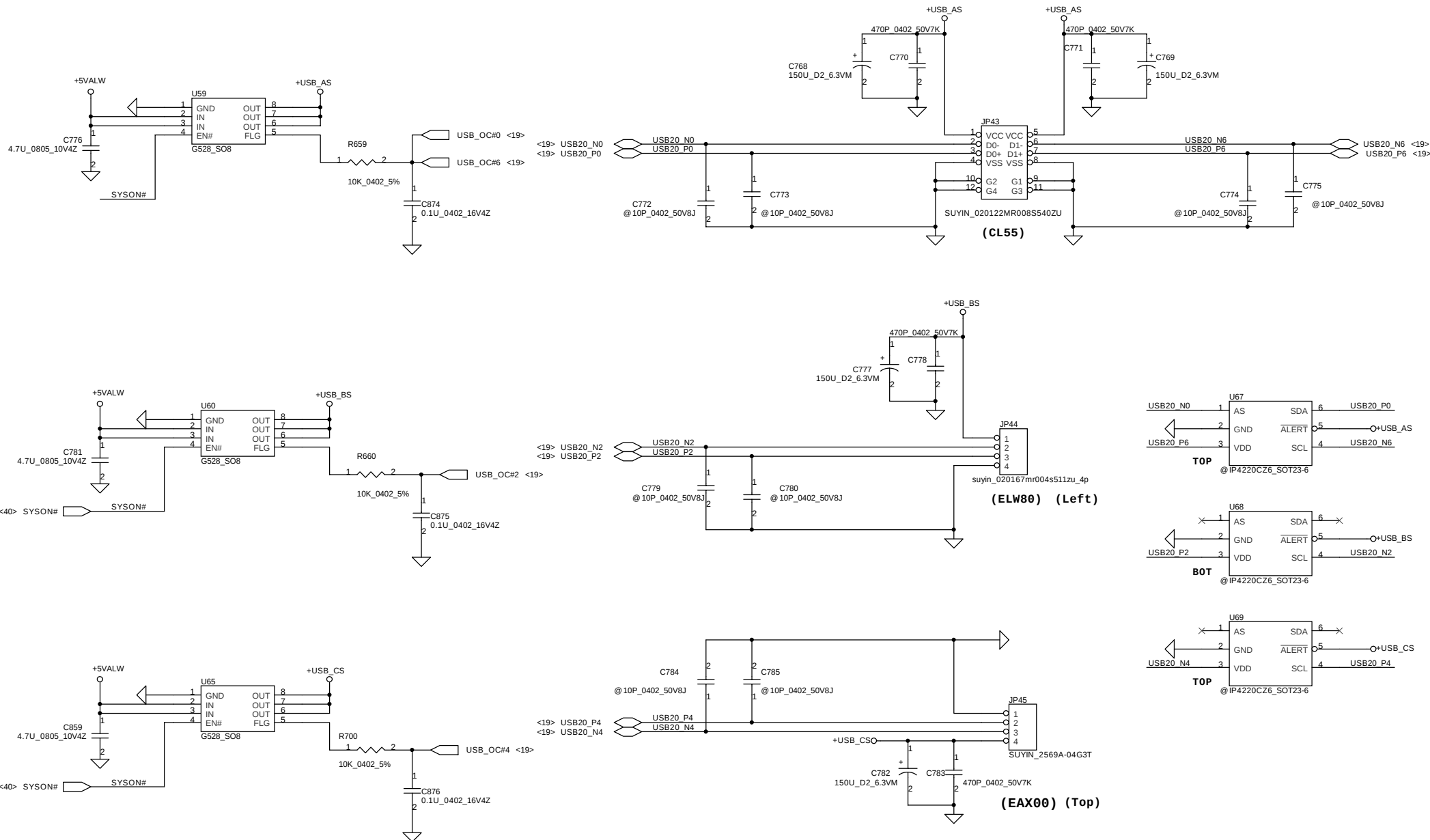


FIR Module



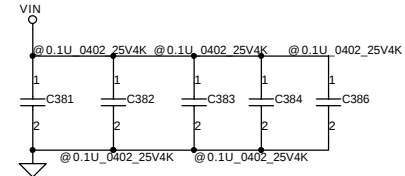
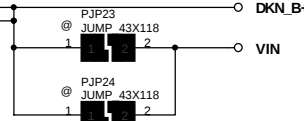
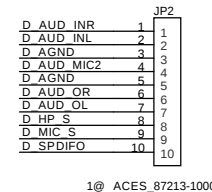
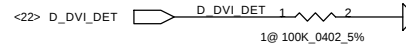
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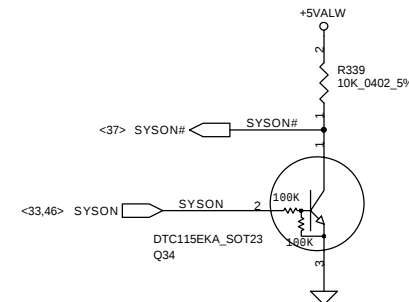
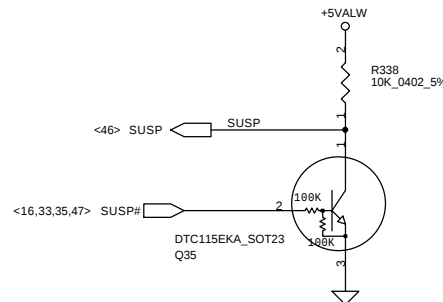
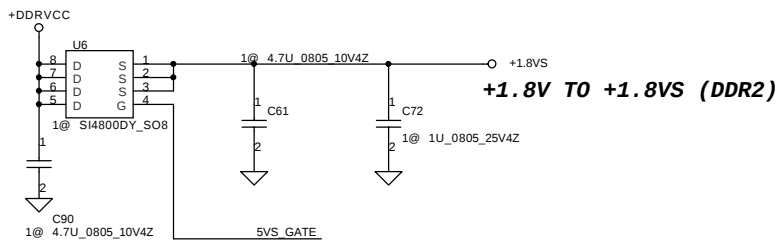
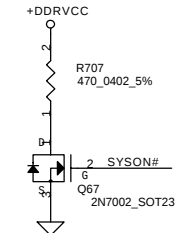
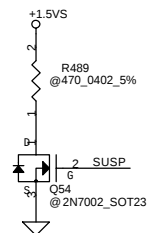
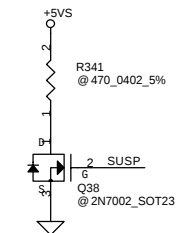
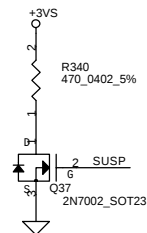
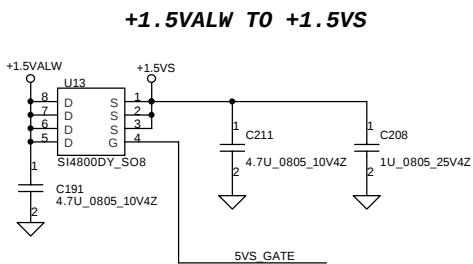
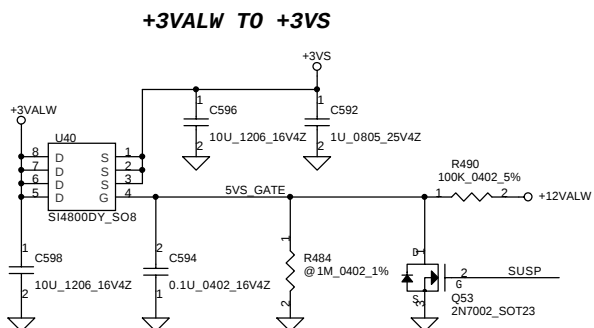
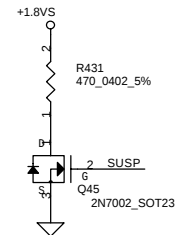
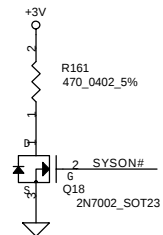
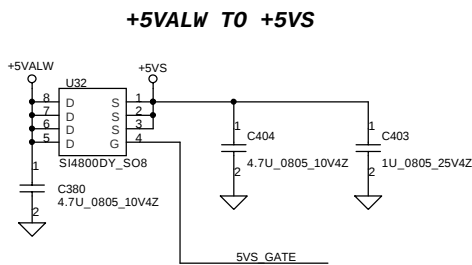
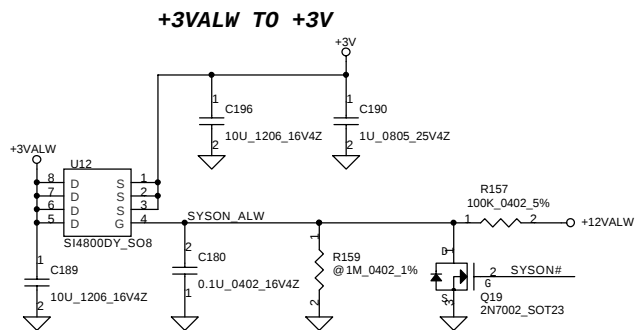
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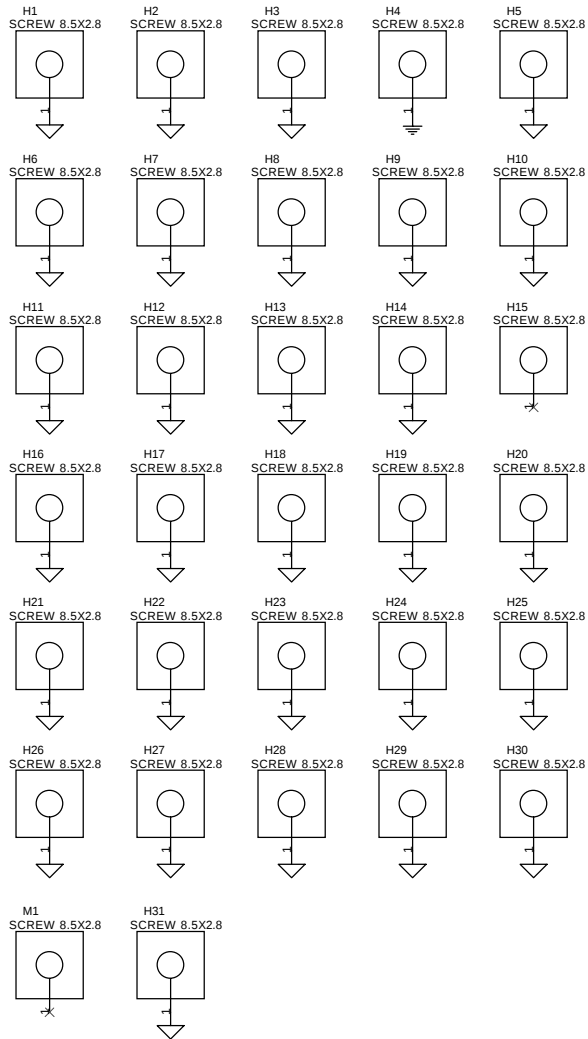
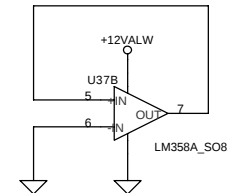
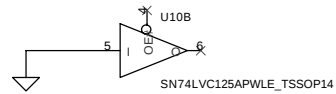
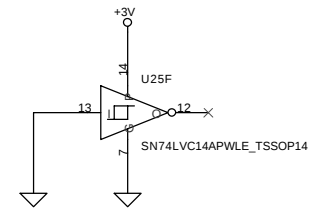
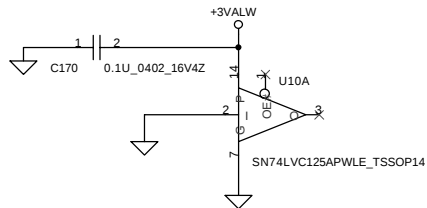
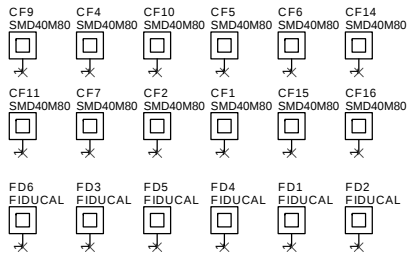
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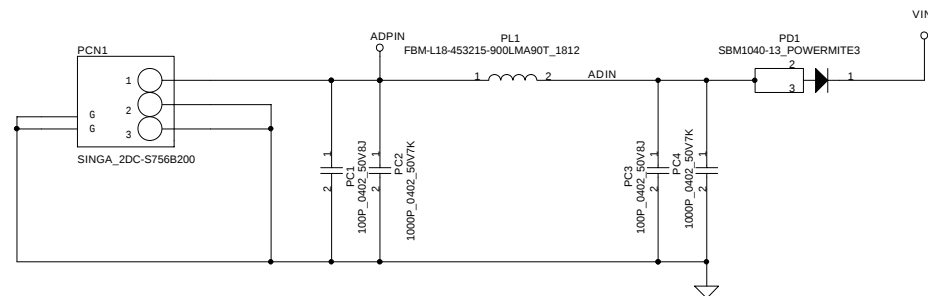
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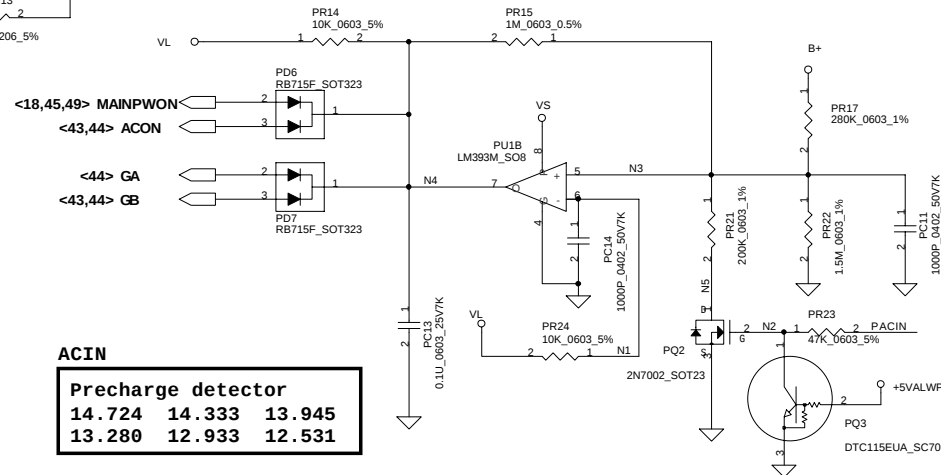
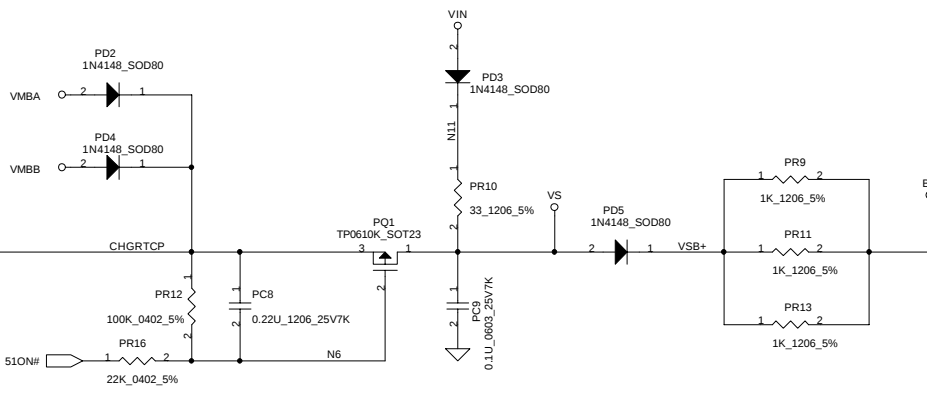
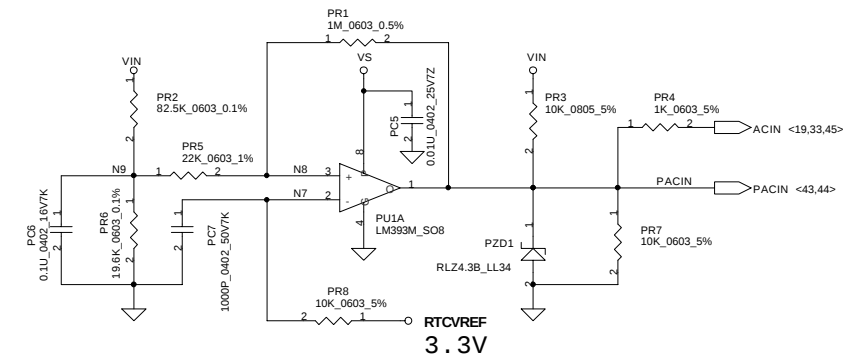
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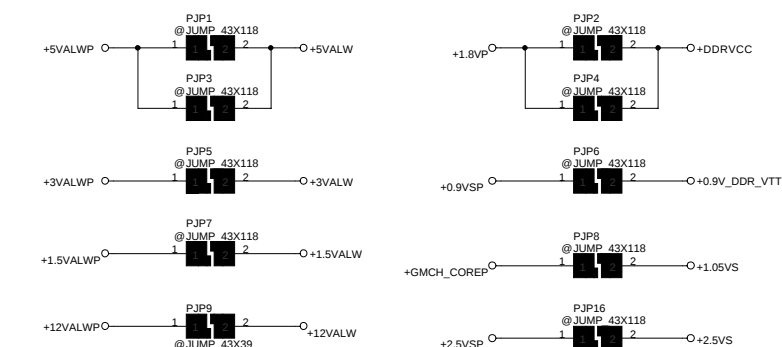


Vin Detector
 18.234 17.841 17.449
 17.597 17.210 16.813

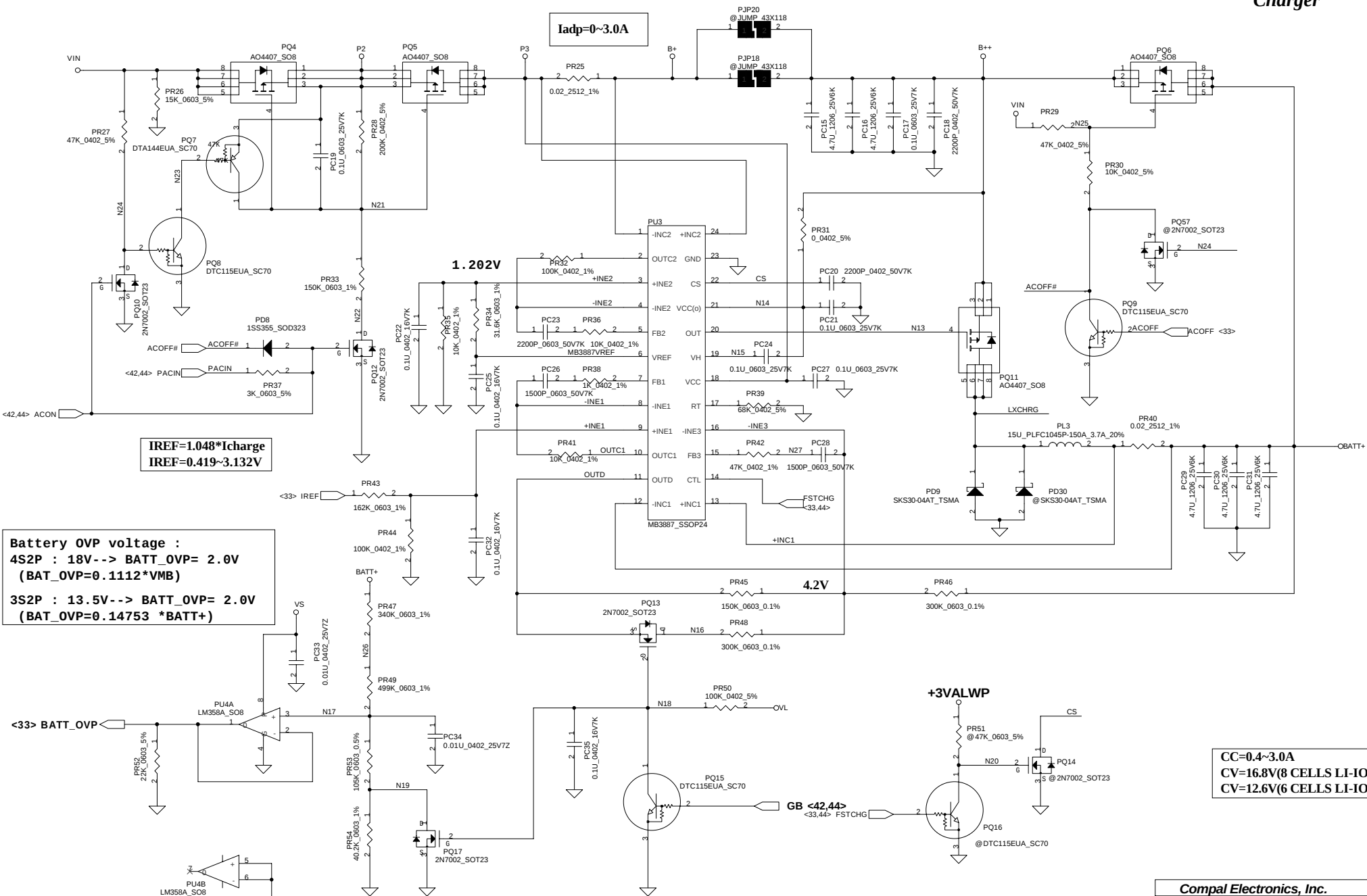


ACIN
 Precharge detector
 14.724 14.333 13.945
 13.280 12.933 12.531

BATT
 Precharge detector
 7.558 7.333 7.112
 6.108 5.933 5.704



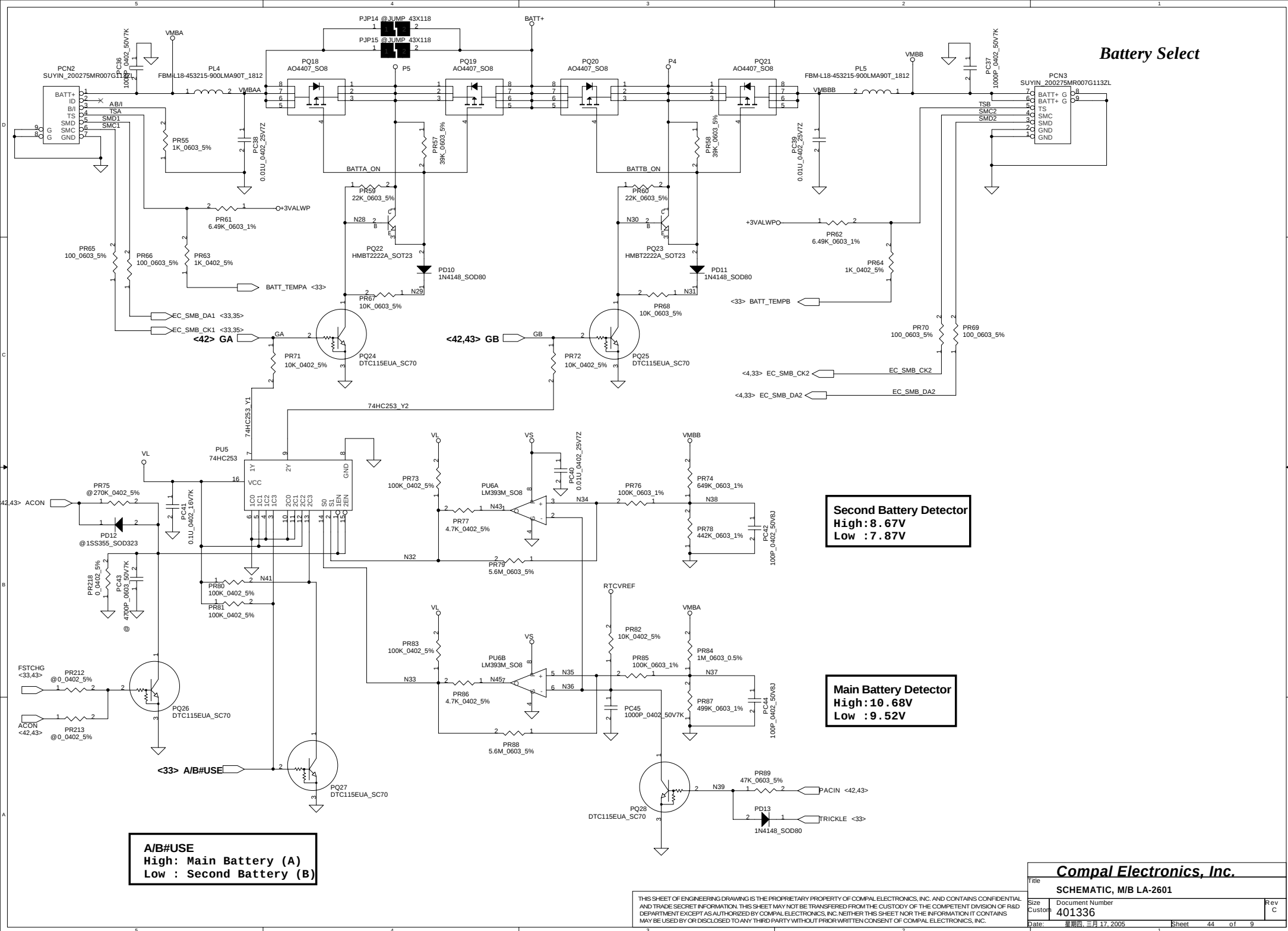
Charger



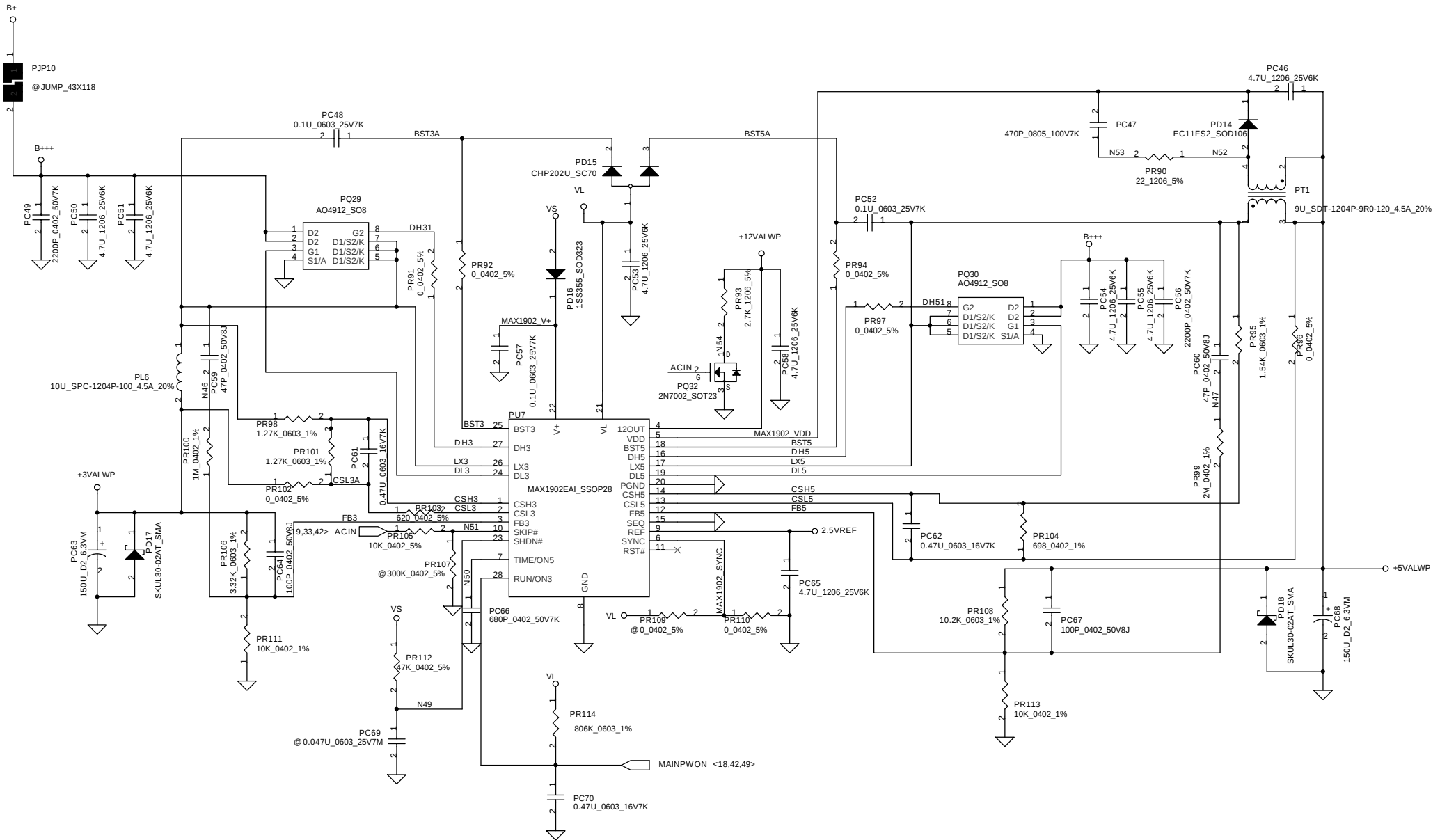
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Battery Select

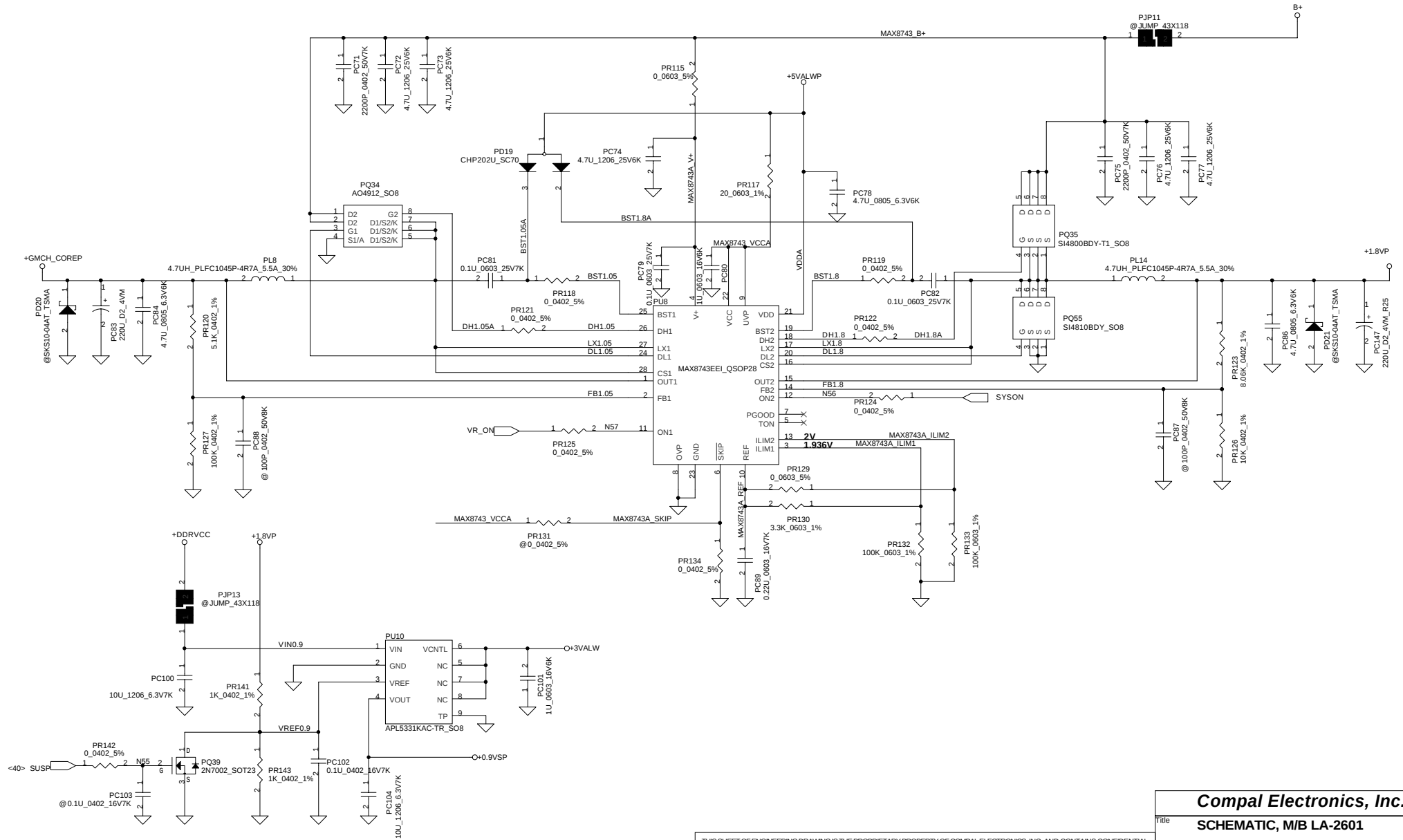


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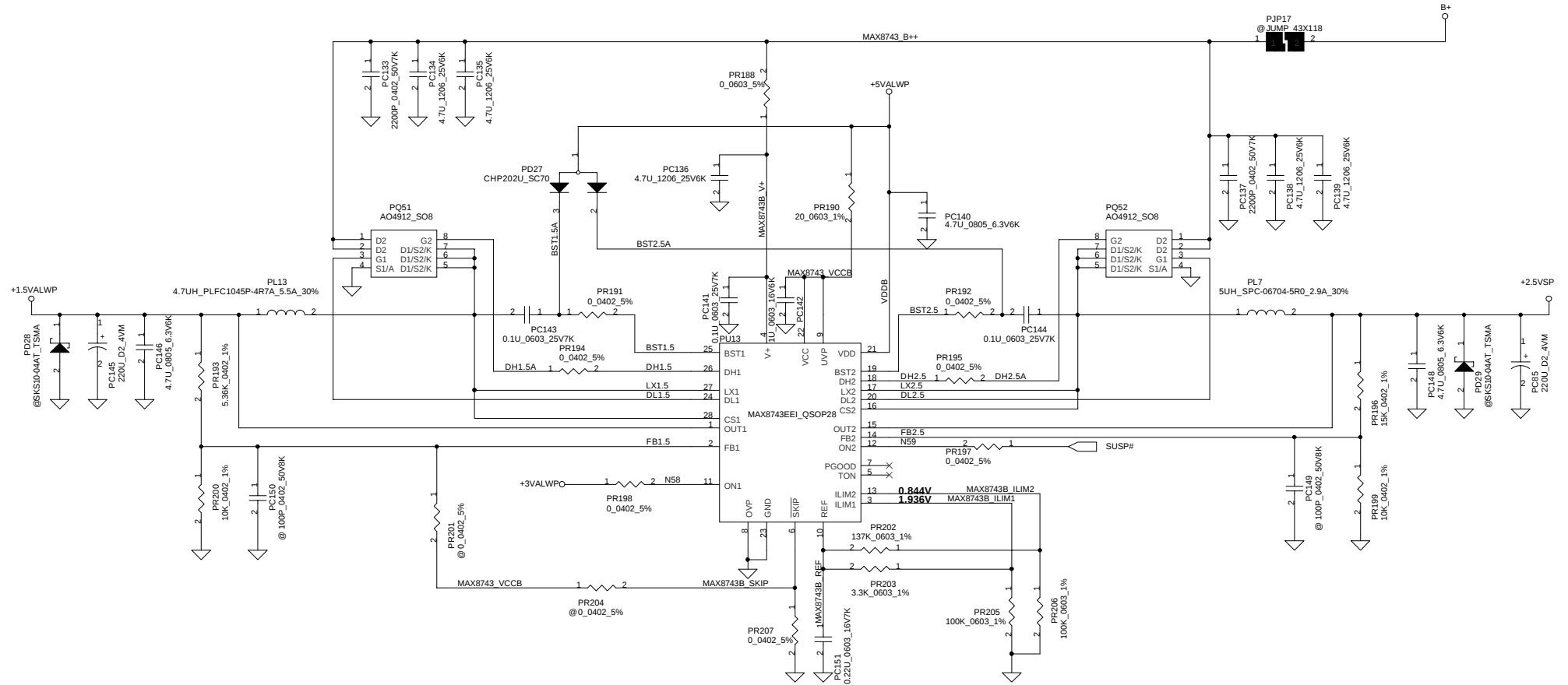
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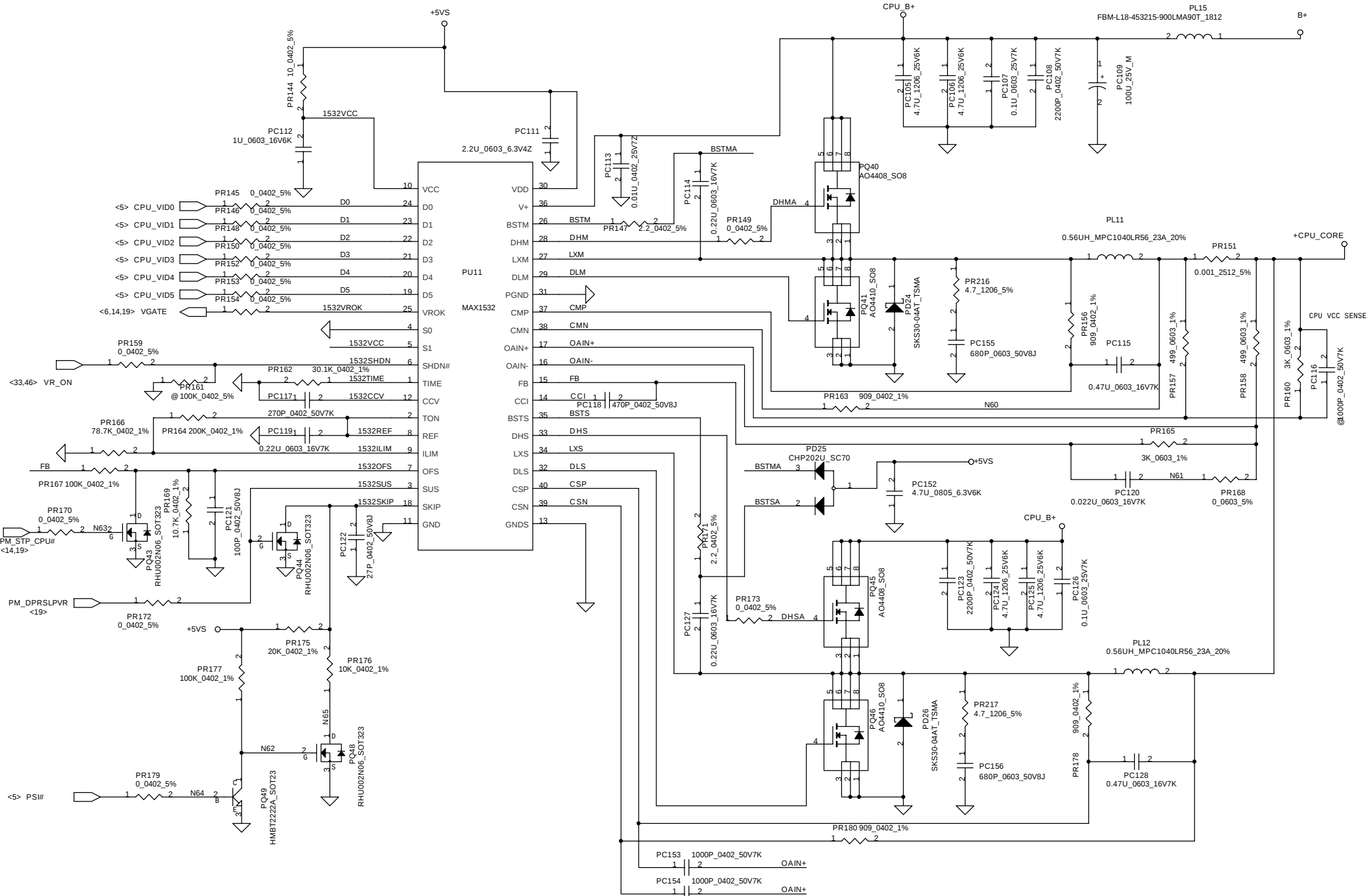
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+2.5VSP/+1.5VALWP



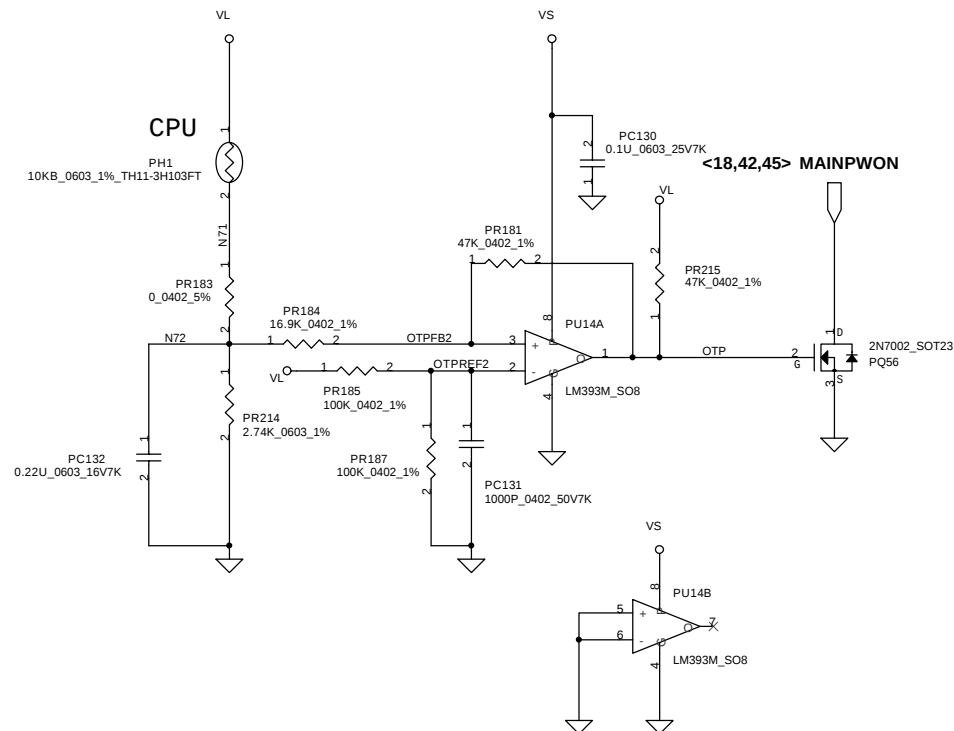
CPU CORE



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PH1 under CPU botten side :
 CPU thermal protection at 90 $\pm$ 3 degree C
 Recovery at 50 $\pm$ 3 degree C



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Item	Reason for change	PG#	Modify List	Date	B.Ver#
1	Change DC JAcK and second battery connect.	42,44	Change DC JAcK from DC231105200 to DC231000500. Change second battery connect from	2004.10.28	
2	Modify OTP schematic.	45,49	Change PR114 from 47K_0402_5% to 806K_0603_1%; Change PR183 from 0_0402_5% to 1.37K_0402_1%; Change PR184 from 16.9K_0402_1% to 10K_0402_1%; Change PC132 from 0.22u_0603_16V to 1U_0603_16V; Change PC70 from 0.047uF to 0.47uF; Delete PR186, PR182, PU12 and PQ50.	2004.11.30	
3	To increase the pre-charge current.	42	Change PR21 from 169K_0603_1% to 200K_0603_1%; Change PR10 from 47_1206_5% to 33_1206_5%; Change PR9,PR11 and PR13 from 1.5K_1206_5% to 1K_1206_5%.	2004.12.28	
4	Change OTP schematic to EVT design.	49	Change PR183 from 1.37K_0402_1% to 0_0402_5%; Change PR184 from 10K_0402_1% to 16.9K_0402_1%; Change PC132 from 1U_0603_16V to 0.22u_0603_16V; Add PR215 47K_0402_1%; Add PR214 2.74K_0603_1%; Add PU14 LM393 and PQ56 2N7002.	2005.01.05	
5	For EMI request.	48	Add PR216 and PR217, 4.7_1206_5%; Add P155 and PC156, 680P_0603_50V; Add PL15, FBM-L18-453215-900LMA90T.	2005.01.10	
6	To increase 1.5V power plan to 1.57V by H/W request.	47	Delete PR201; Add PR200 10K_0402_1%; Add PR193 5.36K_0402_1%.	2005.01.10	

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EAT10 PIR List

***** Rev:0.2 PIR List 2004/08/10 Writer by Jason *****

P05 : Add @ in R63
Del @ in R56

P06 : Del @ in R54
Del JP9

P18: New add R512

P21 : New add R513
New add X3
New add C607

P21 : New add R534, R535

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