

EAT20 (Sakhir 10GC)

LA-2492 Schematics Document

Intel Dothan / AlvisoPM / DDR-1 / ICH6-M / Select Bay

(nVIDIA NV43M & NV44M/ ATi M22 & M24)

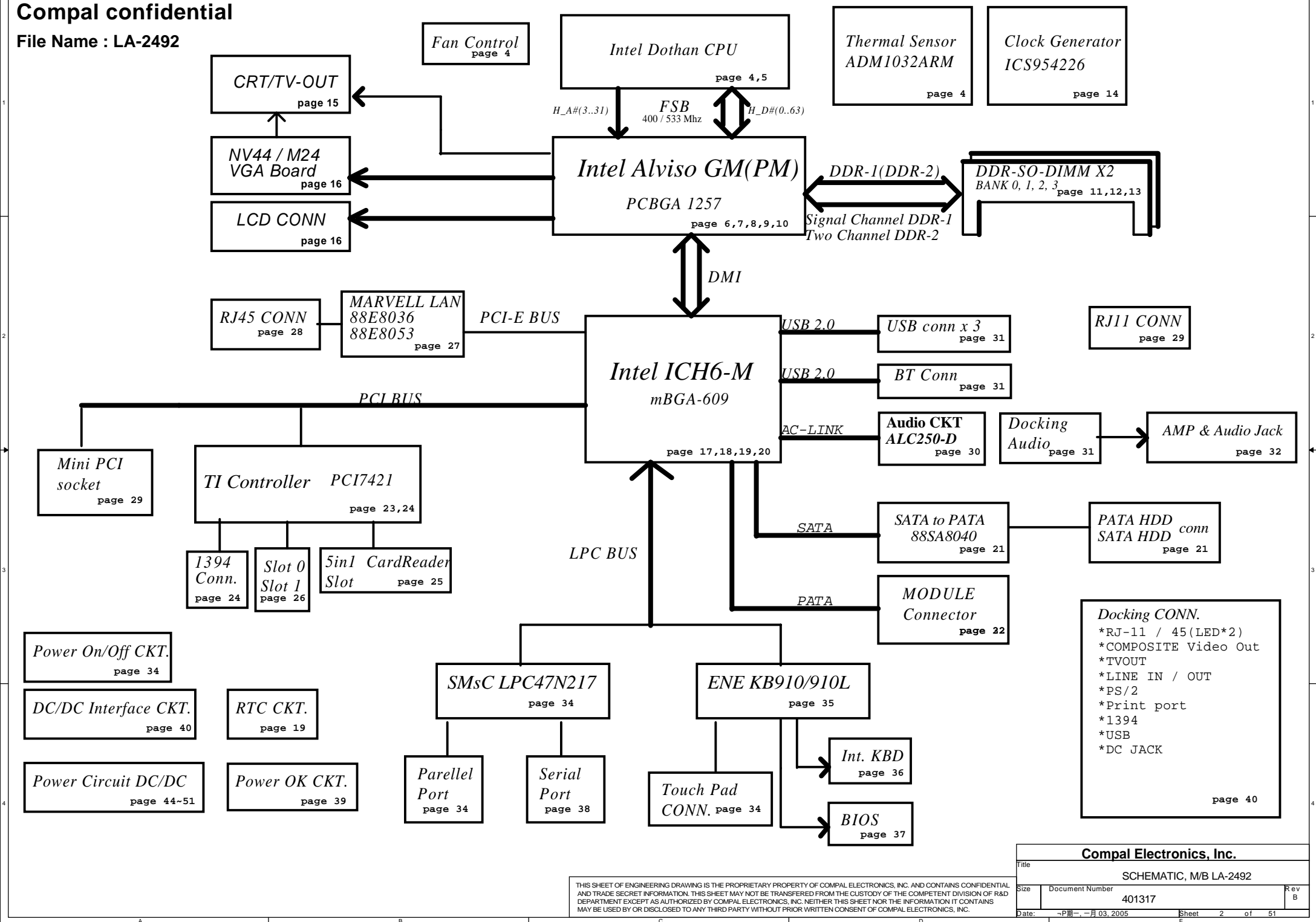
2004 / 12 / 22

Rev:1.0

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		E

File Name : LA-2492



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
+5VCD	5V switched power rail for Direct CD	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	AD20	2	PIRQA/PIRQB
SD	AD20	2	PIRQA/PIRQB
Mini-PCI	AD18	1	PIRQG/PIRQH

EC SM Bus1 address

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

ICH6M SM Bus address

Device	Address
Clock Generator (ICS 952623)	1101 001Xb
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 001Xb

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/Re	100K +/- 5%			
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

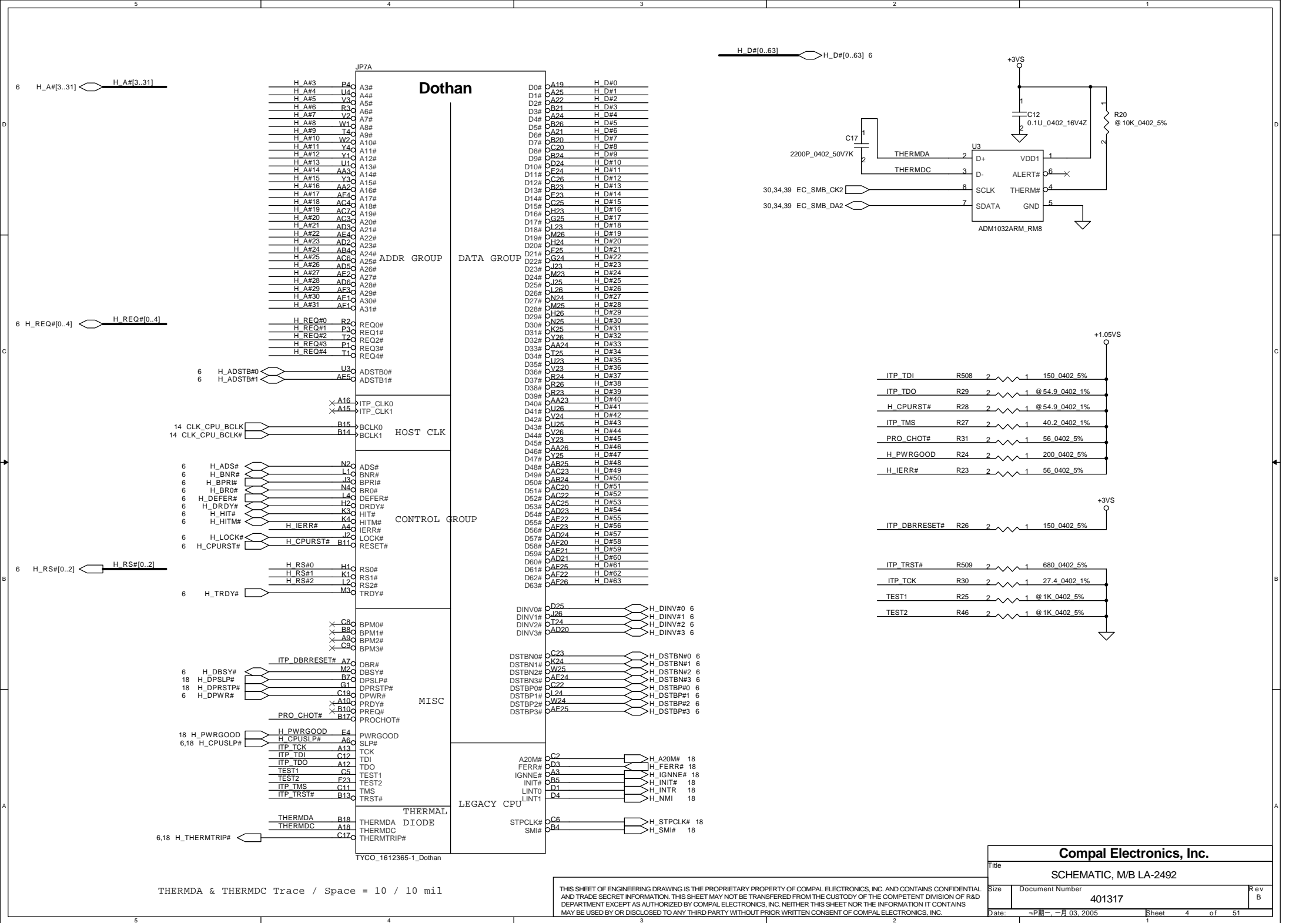
Board ID	PCB Revision
0	0.1
1	NC
2	0.2
3	1.0
4	
5	
6	
7	

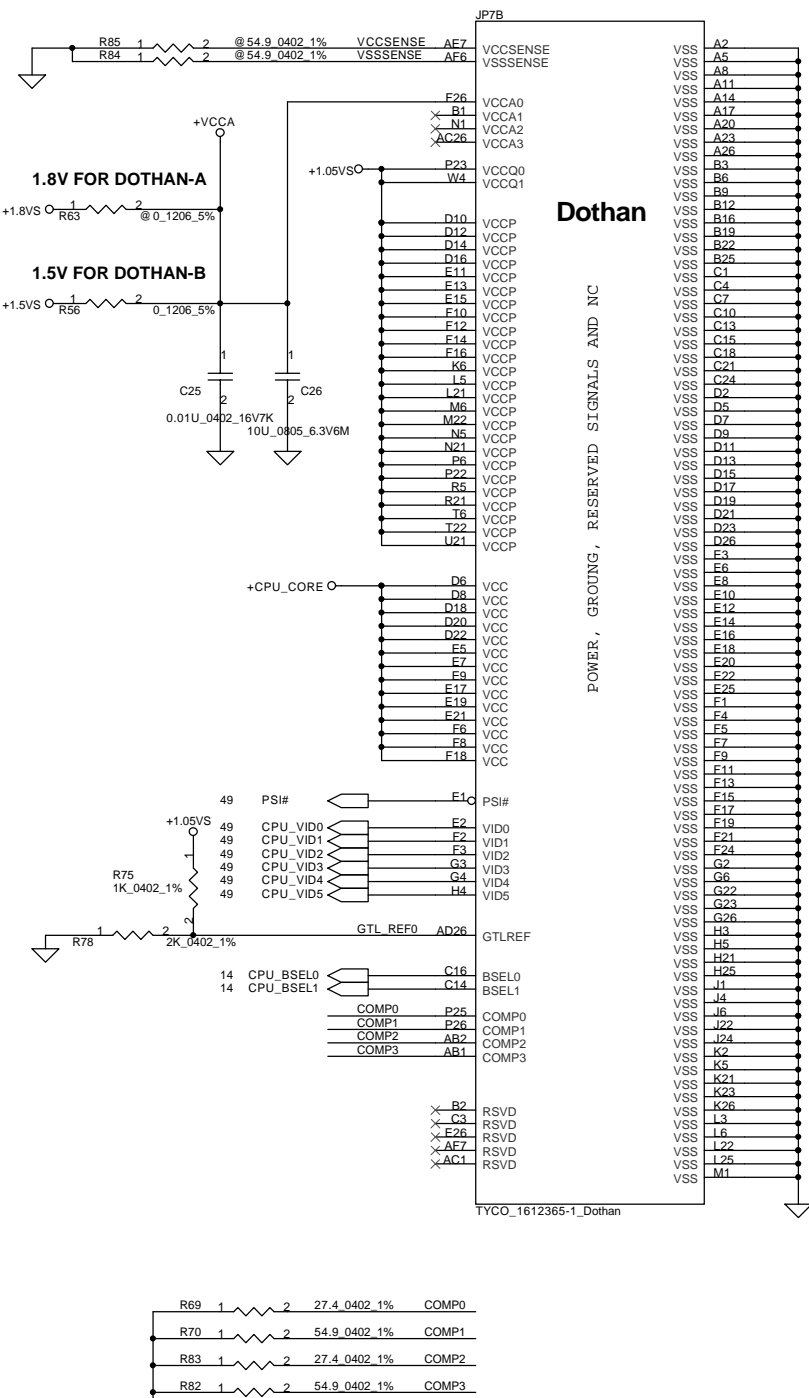
SKU ID Table

SKU_ID_CHECK_0	SKU_ID_CHECK_1	7	6	5
		1-Button	3-Buttons	7-Buttons
0	10	1		0
1	10C	3	12	2
2	10G	5		4
3	10GC	7	13	6
4	10J	11		10
5				
6				

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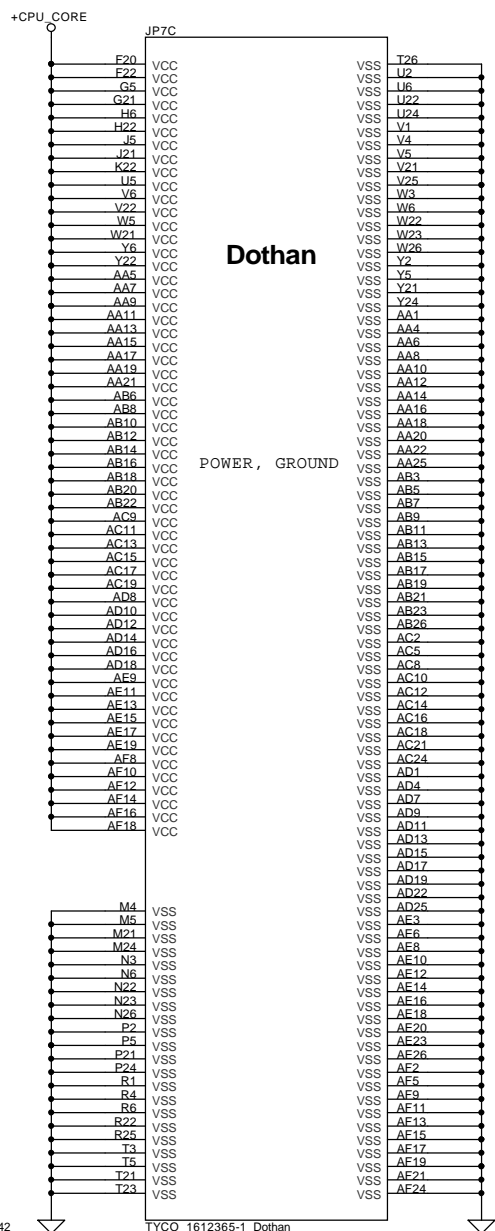
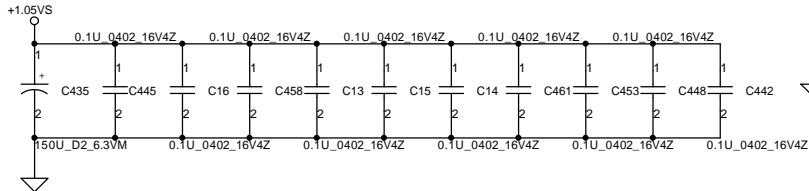
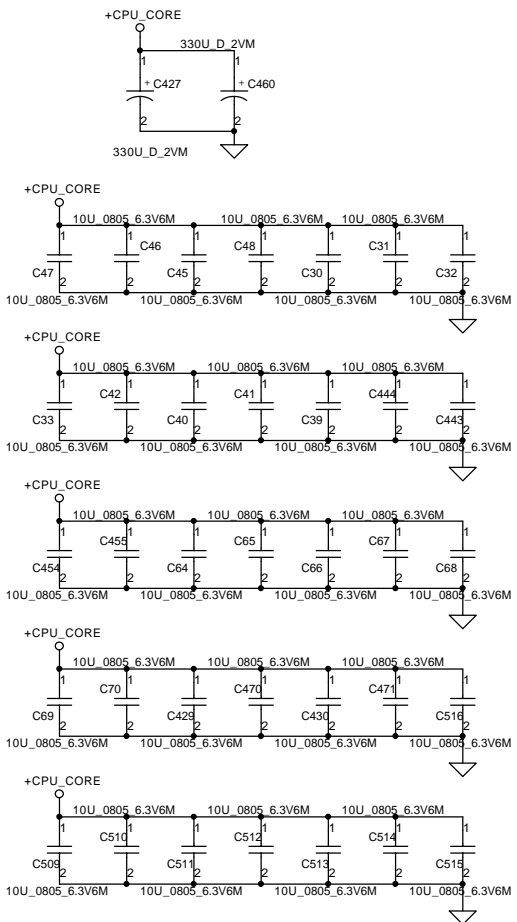
Dothan

POWER, GROUND, RESERVED SIGNALS AND NC

TRACE CLOSELY CPU < 0.5"

COMP0, COMP2 layout : Width 18mils and Space 25mils
COMP1, COMP3 layout : Space 25mils

Vcc-core Decoupling	C,uF	ESR, mohm	ESL,nH
SPCAP, Polymer	2X330uF	7m ohm/2	3.5nH/2
MLCC 0805 X5R	35X10uF	5m ohm/35	0.6nH/35



Dothan

POWER, GROUND

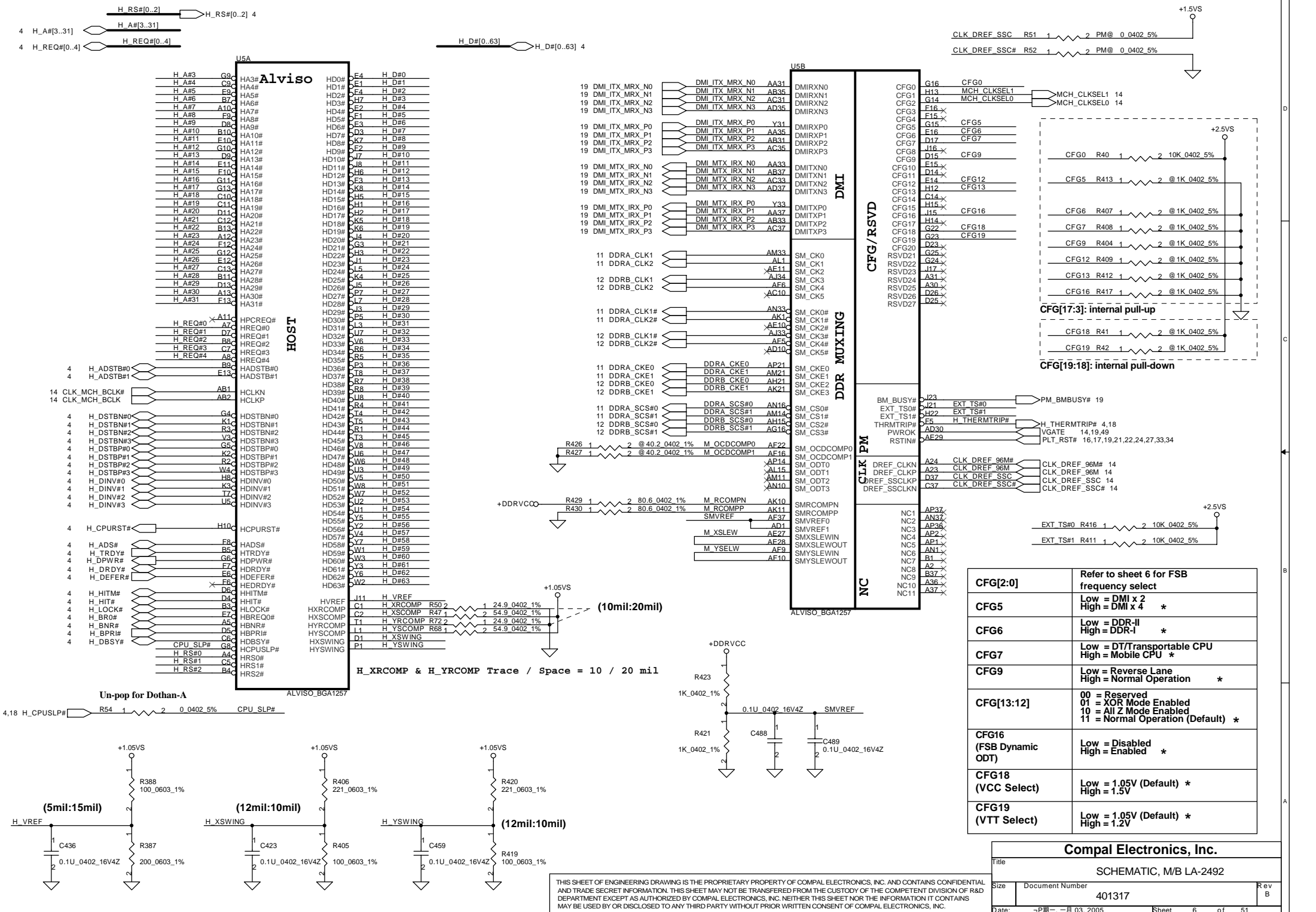
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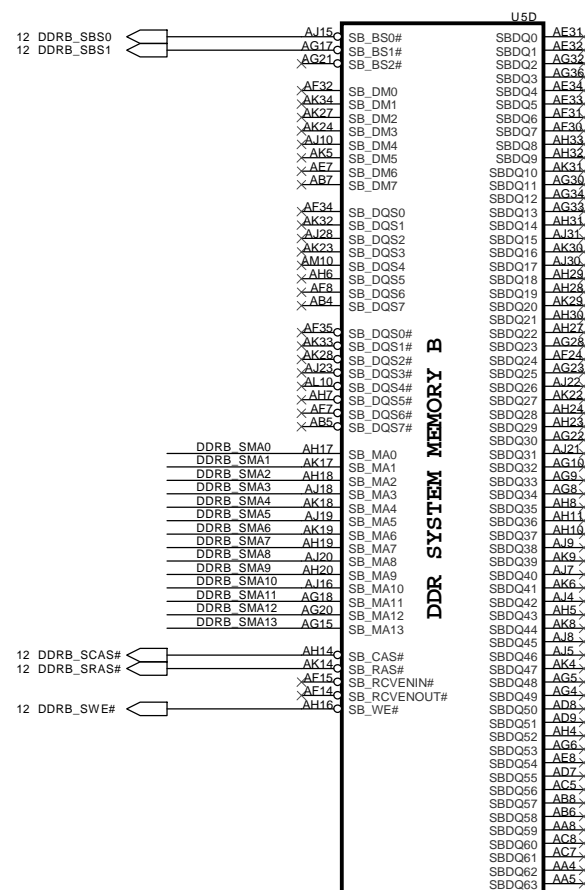
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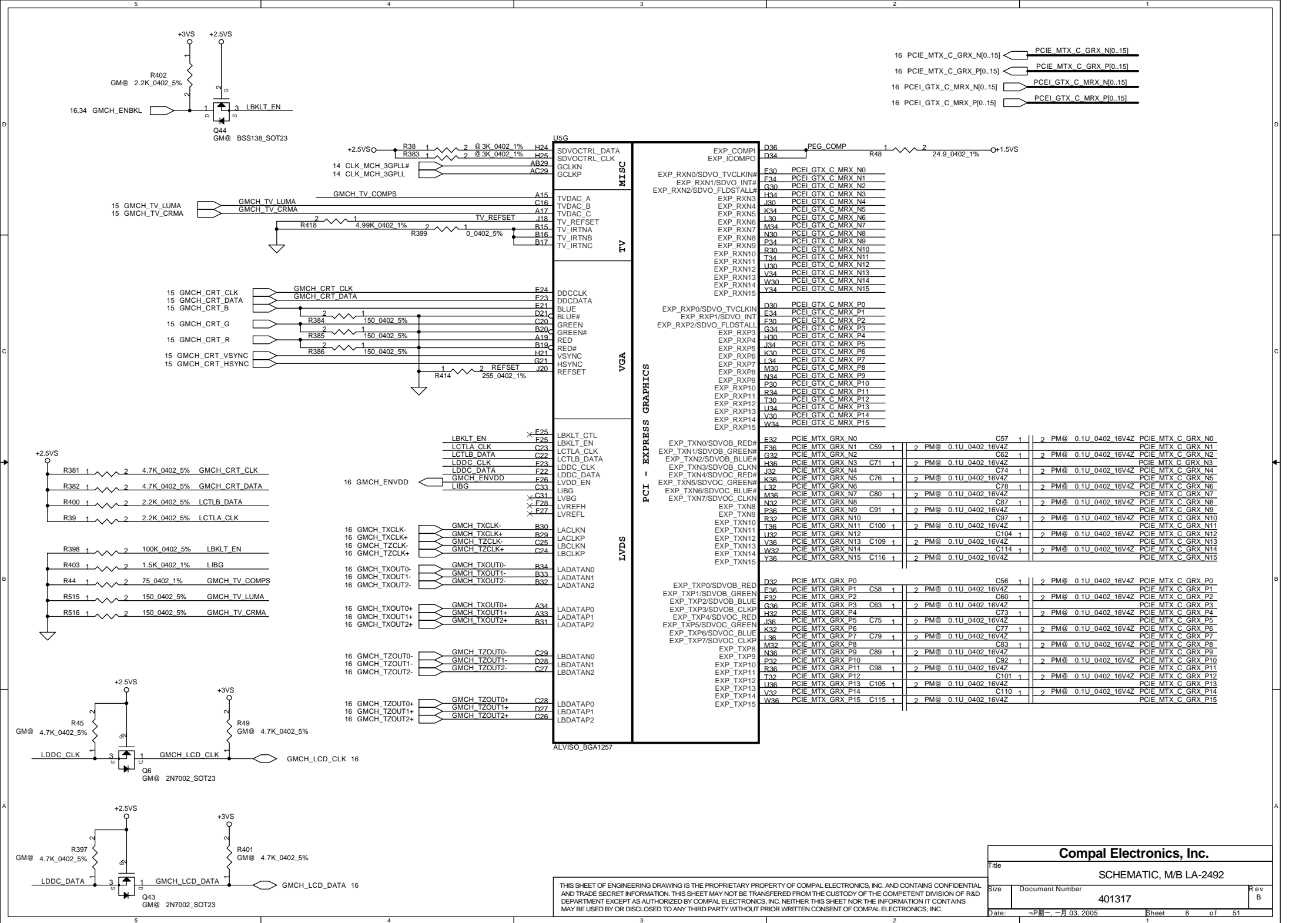
CFG[2:0]	Refer to sheet 6 for FSB frequency select
CFG5	Low = DMI x 2 High = DMI x 4 *
CFG6	Low = DDR-II High = DDR-I *
CFG7	Low = DT/Transportable CPU High = Mobile CPU *
CFG9	Low = Reverse Lane High = Normal Operation *
CFG[13:12]	00 = Reserved 01 = XOR Mode Enabled 10 = All Z Mode Enabled 11 = Normal Operation (Default) *
CFG16 (FSB Dynamic ODT)	Low = Disabled High = Enabled *
CFG18 (VCC Select)	Low = 1.05V (Default) * High = 1.5V
CFG19 (VTT Select)	Low = 1.05V (Default) * High = 1.2V

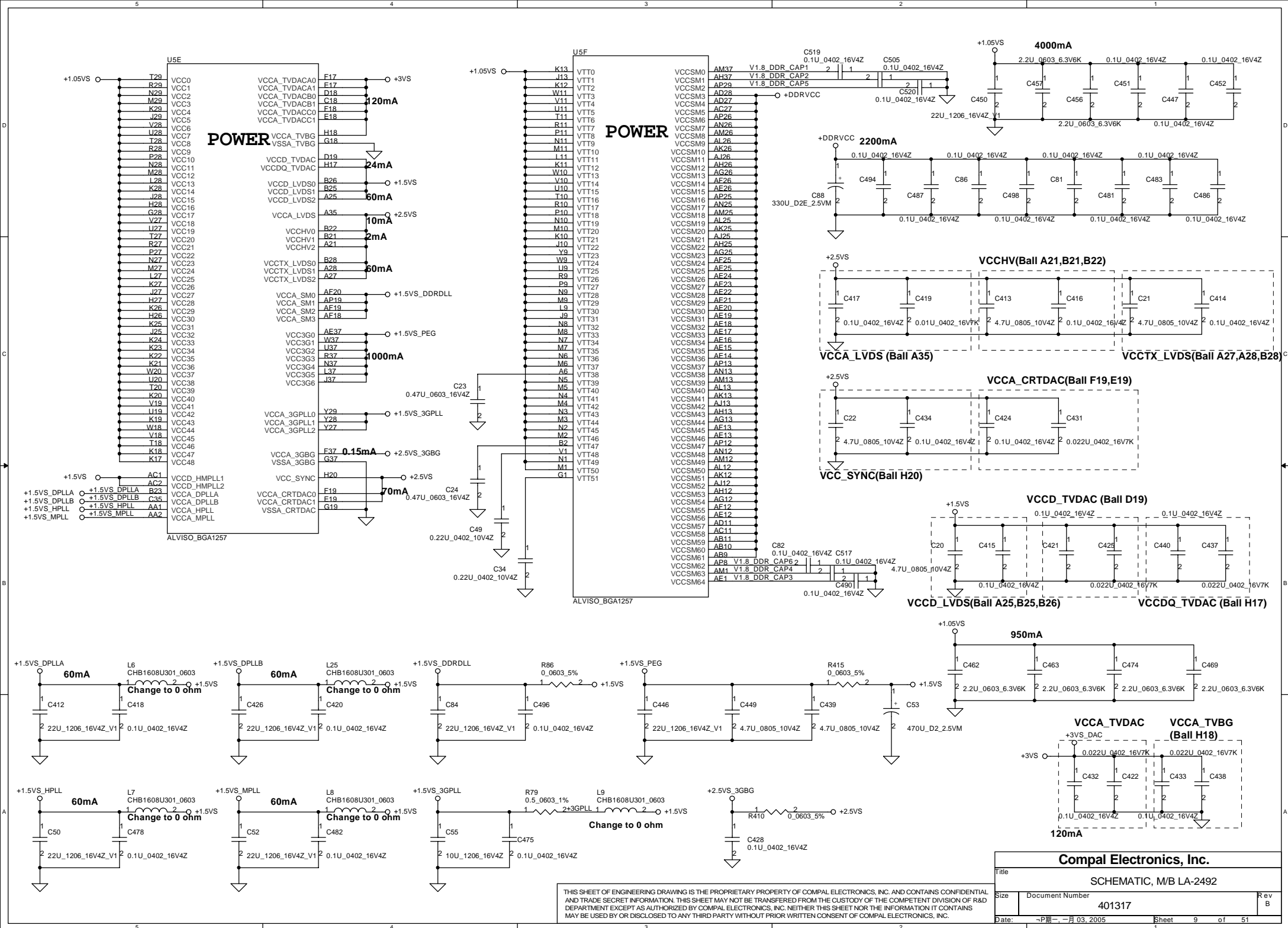
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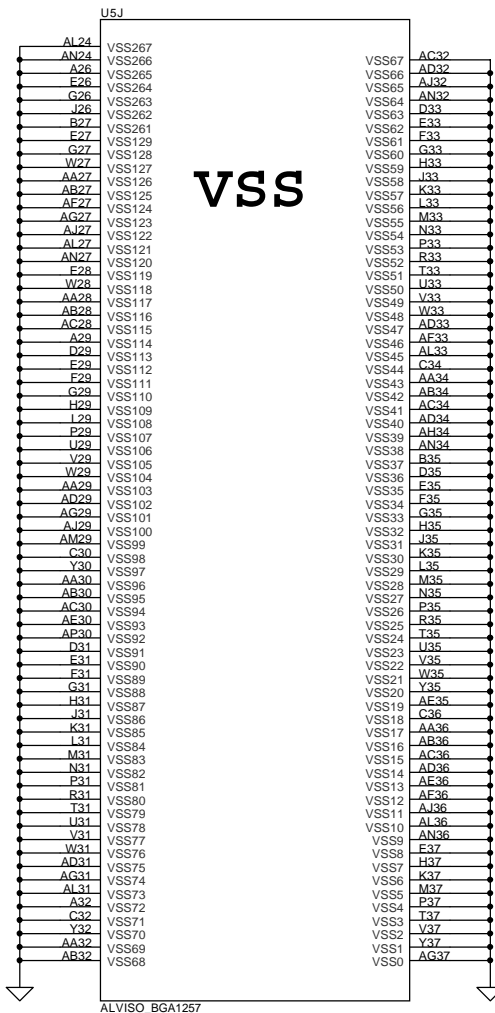
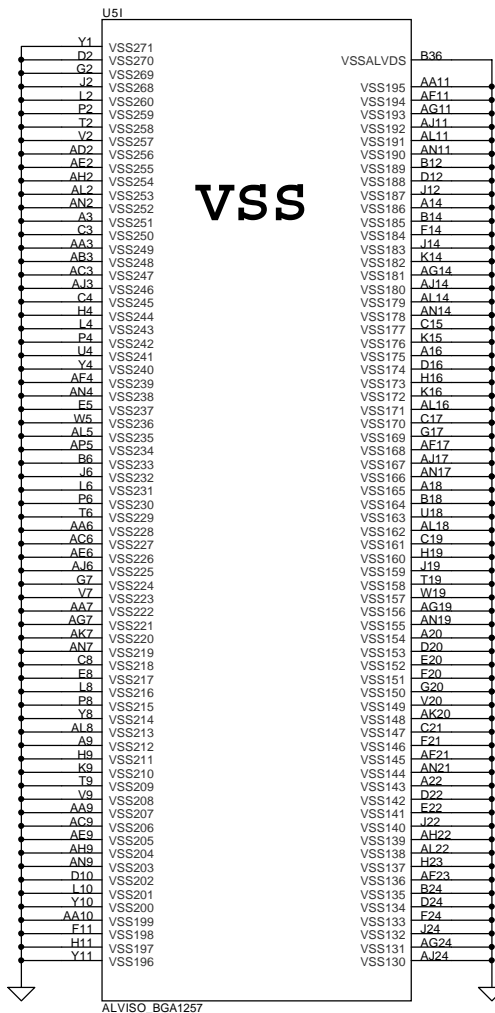
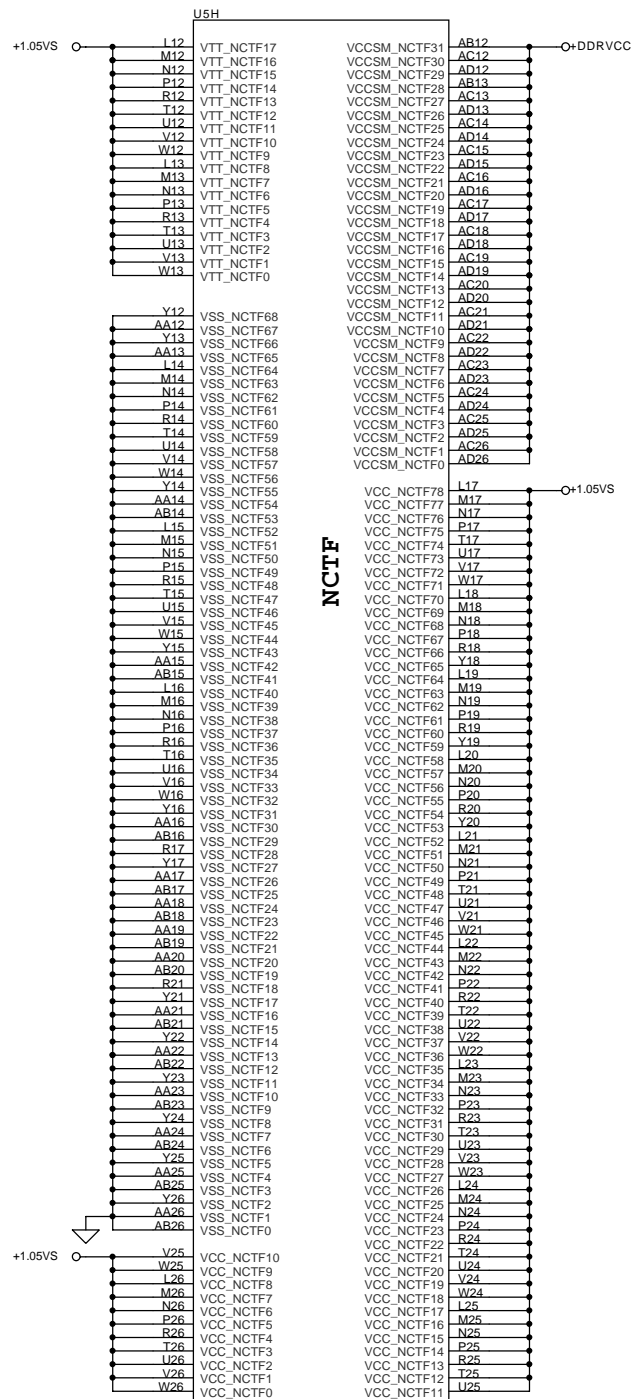
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AL VISO BGA1257

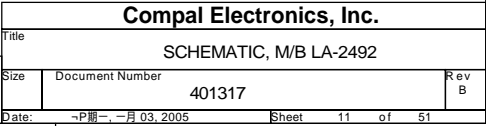


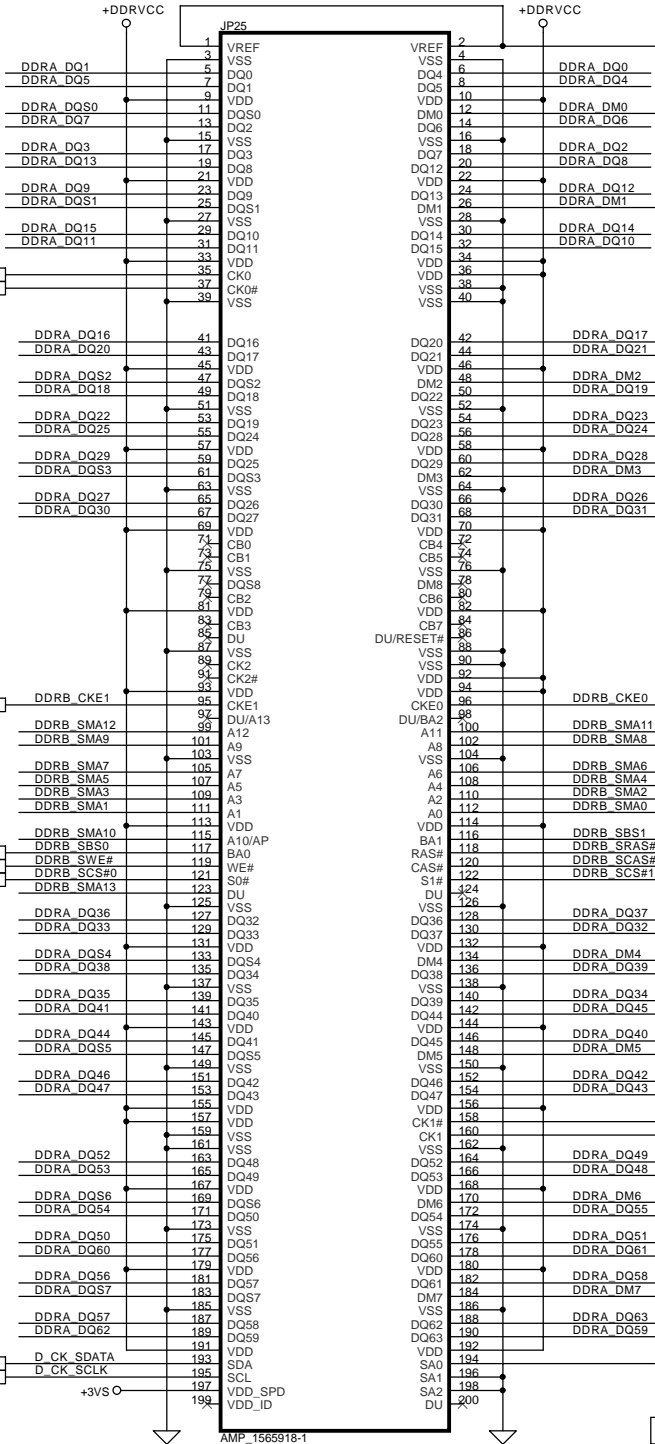
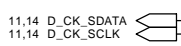
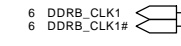
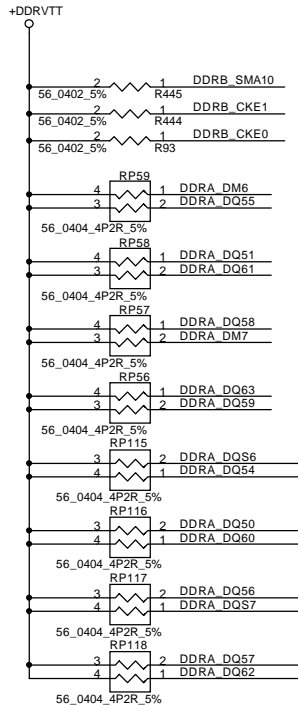
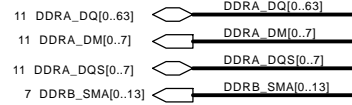
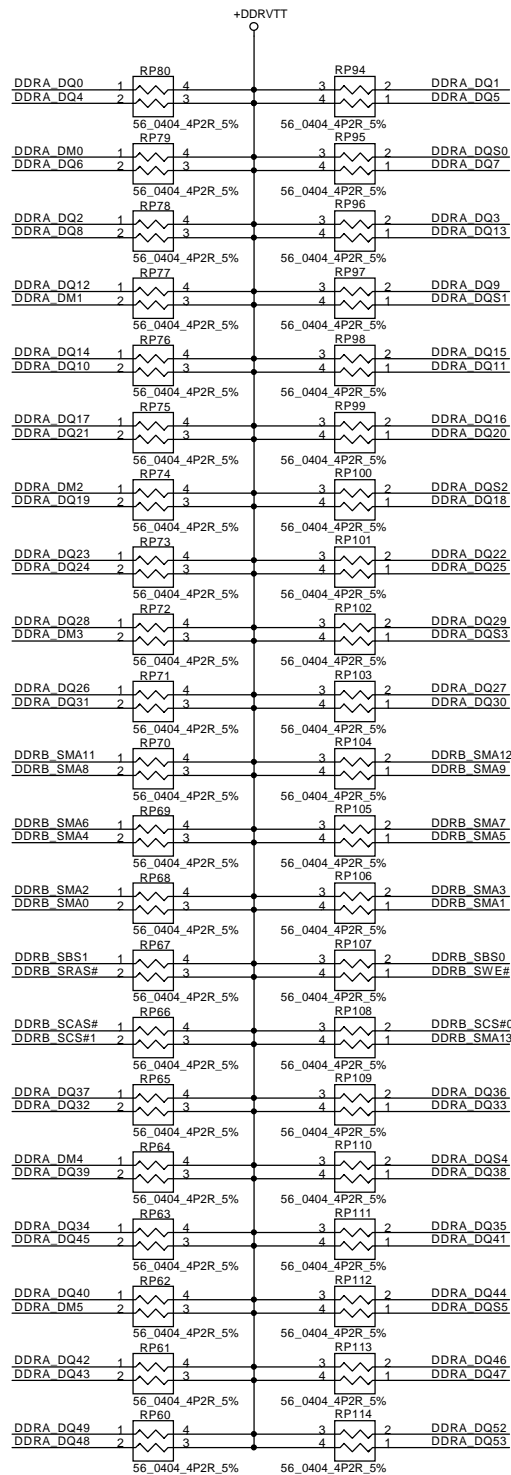




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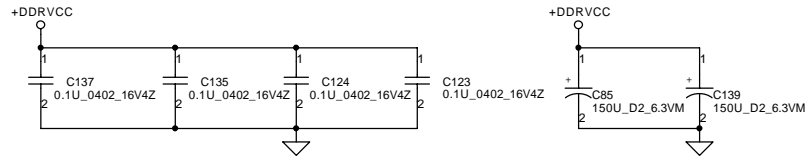
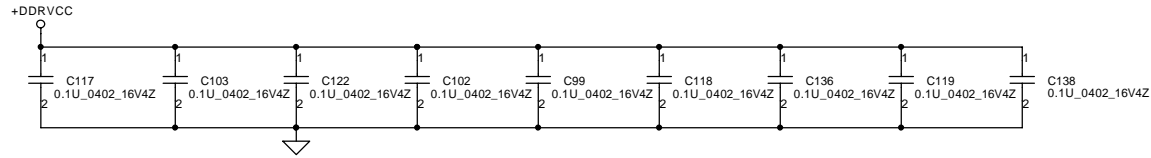




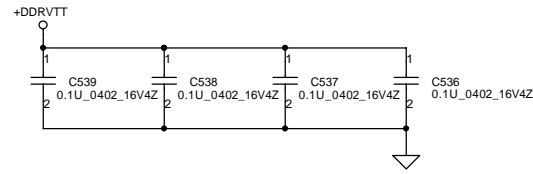
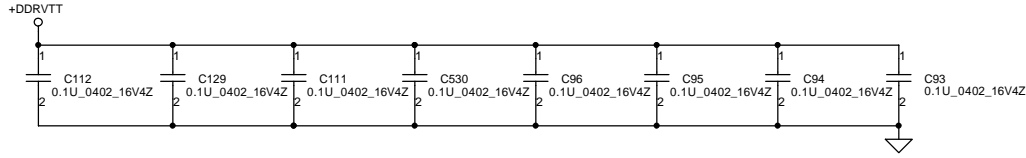
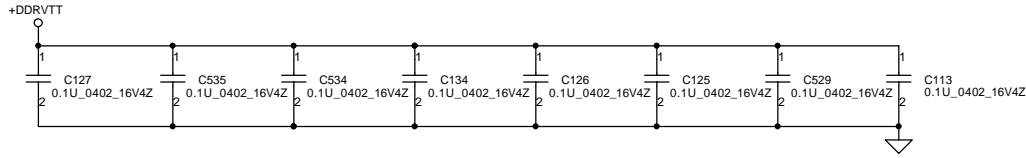
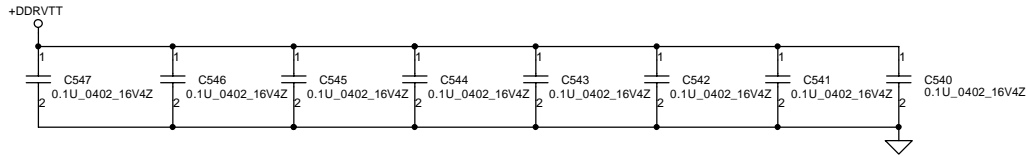
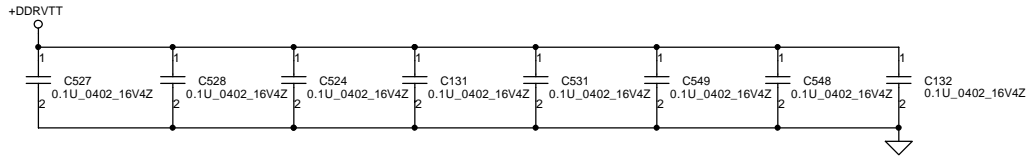
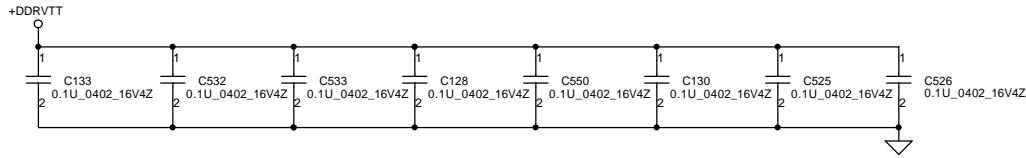
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Layout note :
Distribute as close as possible
to DDR-SODIMM.



Layout note :
Place one cap close to every 2 pull up resistors termination to
+1.25V



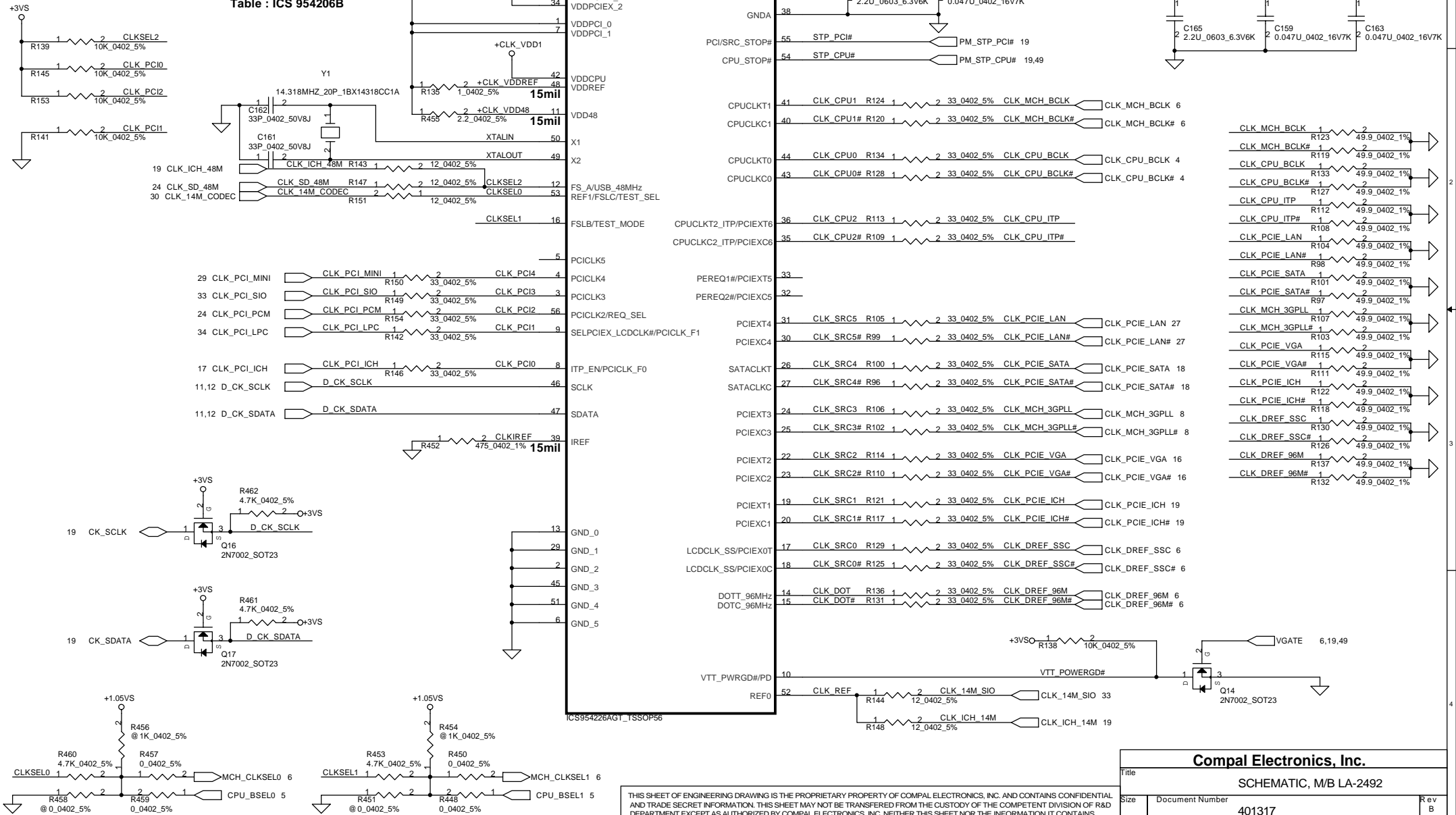
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FSC CLKSEL0	FSB CLKSEL1	FSA CLKSEL2	CPU MHz	SRC MHz	PCI MHz
1	0	1	100	100	33.3
0	0	1	133	100	33.3
0	1	1	166	100	33.3
0	1	0	200	100	33.3

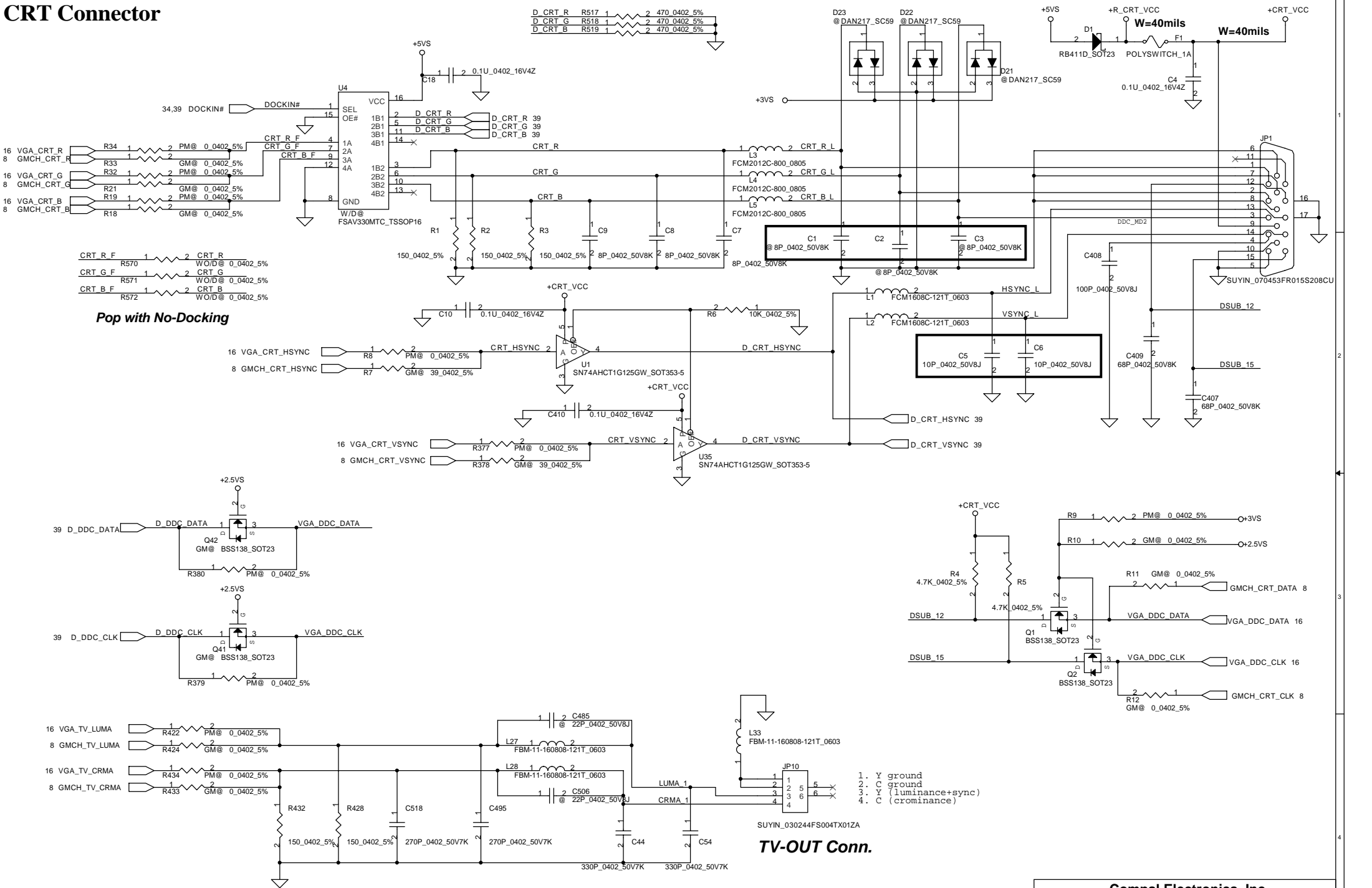
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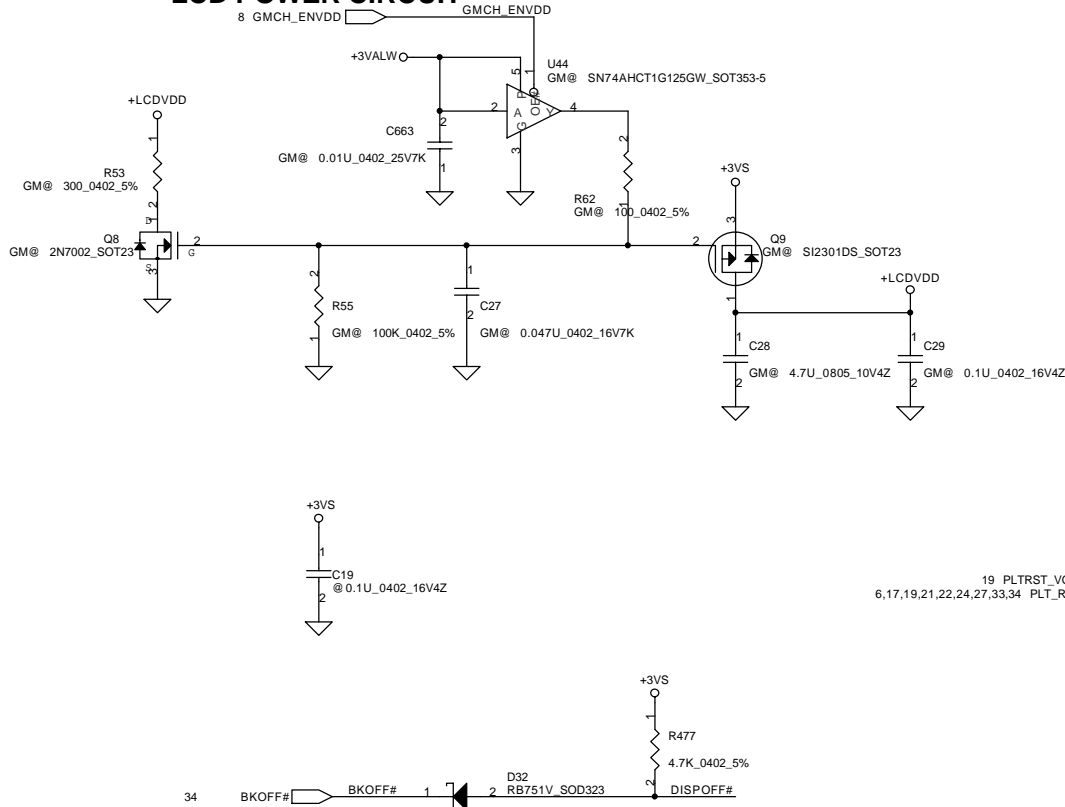
CRT Connector



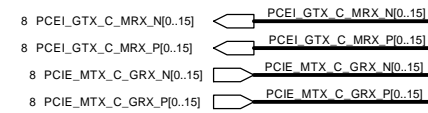
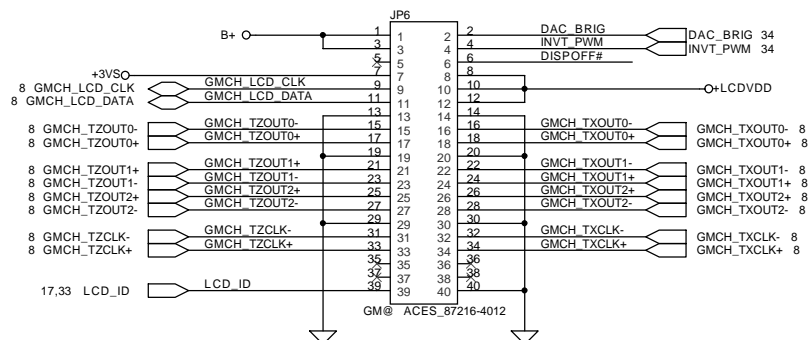
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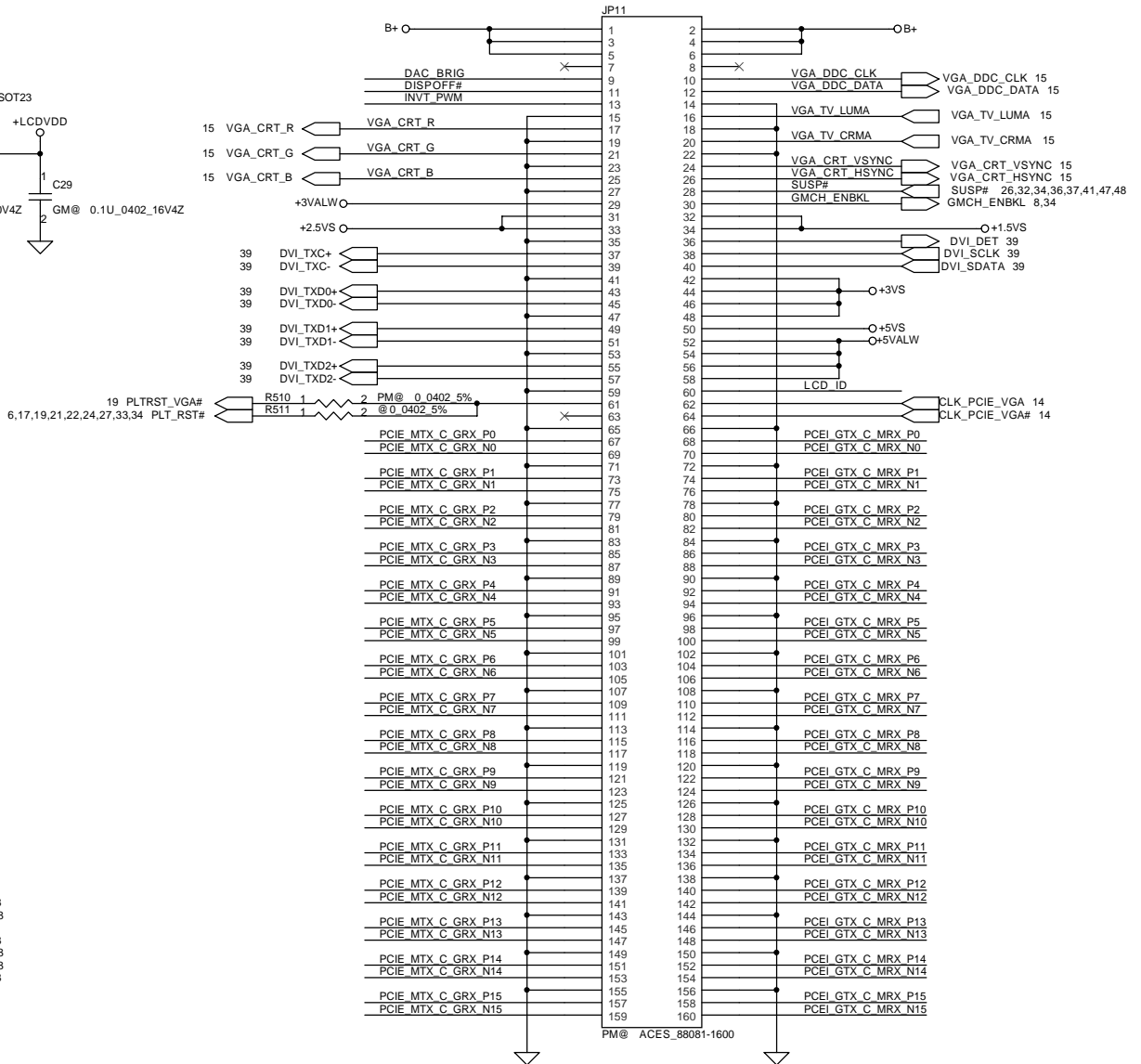
LCD POWER CIRCUIT



LCD/PANEL BD. Conn.



VGA BOARD Conn.



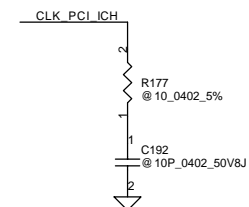
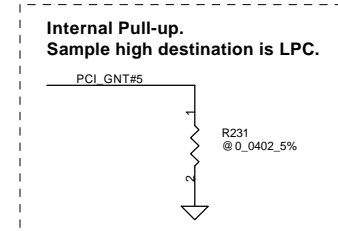
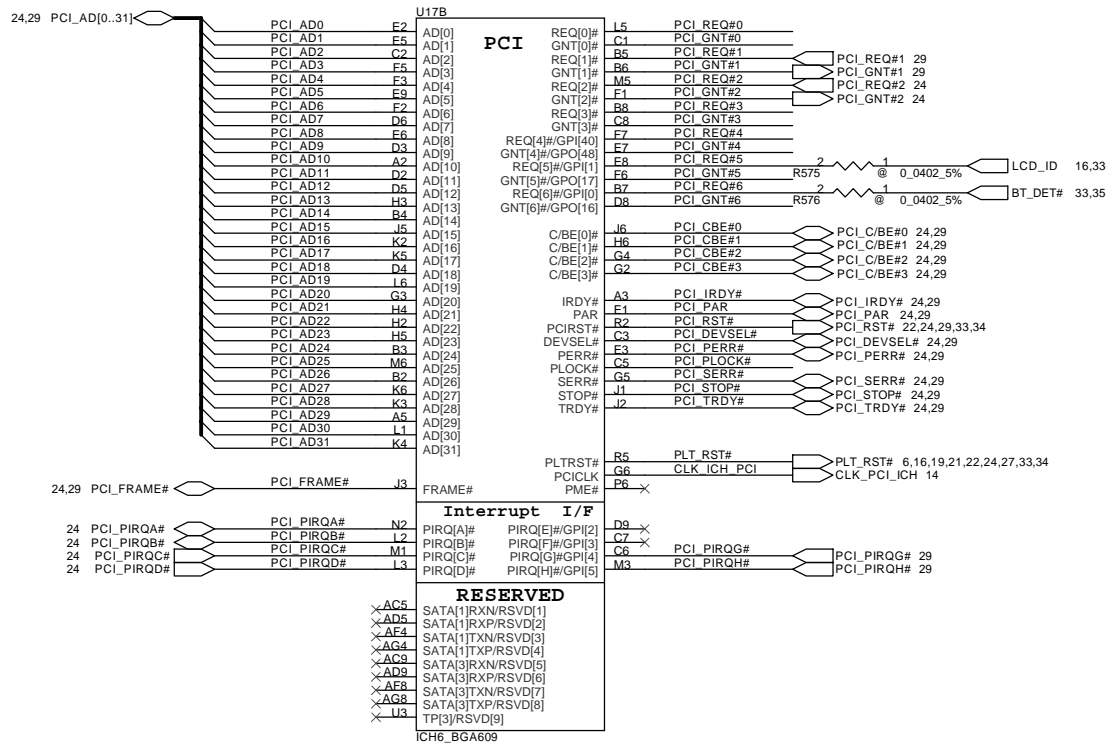
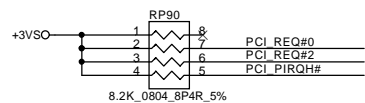
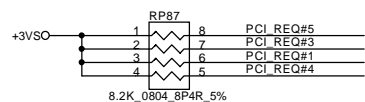
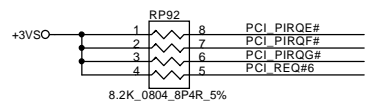
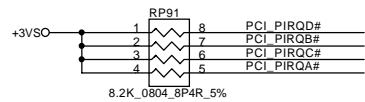
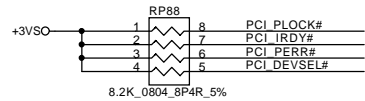
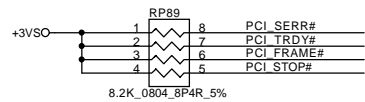
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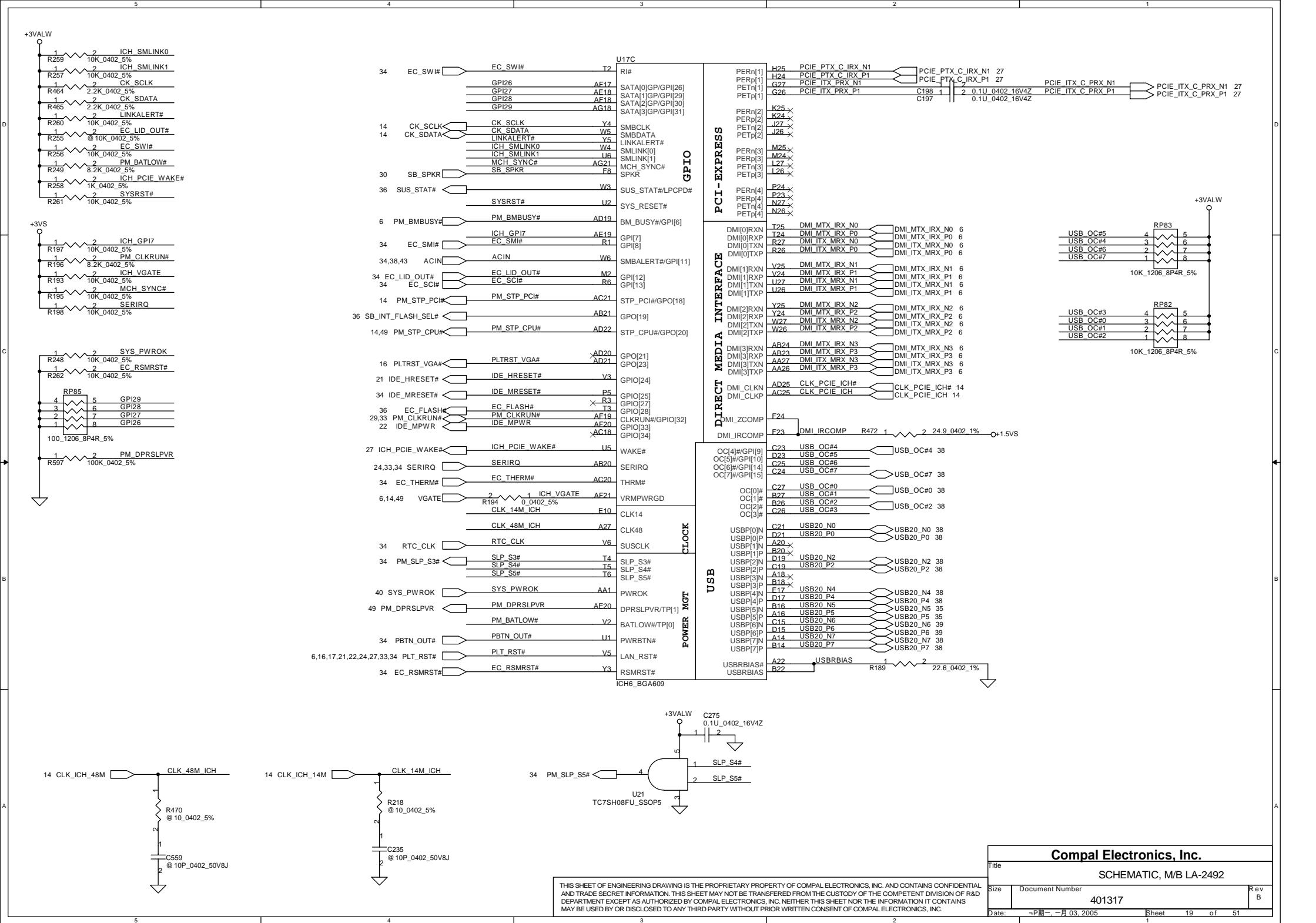
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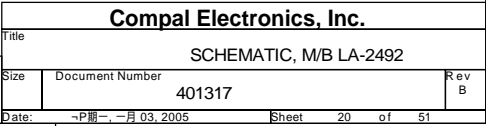
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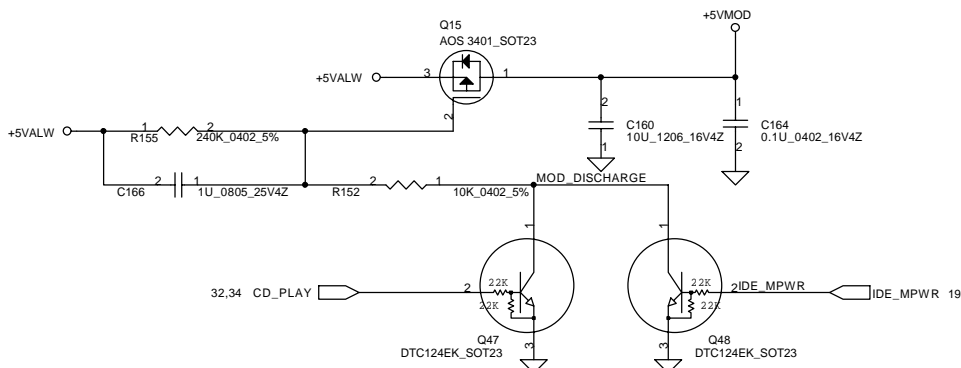
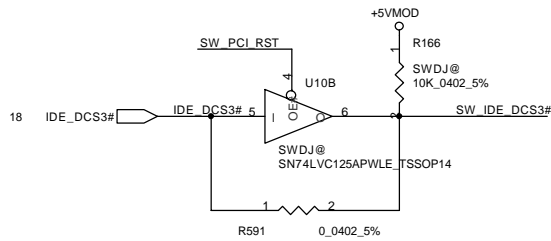
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57

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59

60

61

62

63

64

65

66

67

68

69

70

72

+5VMOD

+3VALW

R158

SWDJ@

10K_0402_5%

SEC_CSEL

@ 475_0402_1%

CD_ROM_R

CD_ROM_L

CD_AGND

MODULE_RST#

IDE_DD7

IDE_DD8

IDE_DD6

IDE_DD9

IDE_DD5

IDE_DD10

IDE_DD4

IDE_DD11

IDE_DD3

IDE_DD12

IDE_DD2

IDE_DD13

IDE_DD1

IDE_DD14

IDE_DD0

IDE_DD15

IDE_DDREQ

IDE_DIOW#

IDE_DIOR#

IDE_DIORDY

IDE_DDACK#

IDE_IRQ

IDE_DA1

IDE_DA0

IDE_DA2

SW_IDE_DCS1#

SW_IDE_DCS3#

SHDD_LED#

MID2

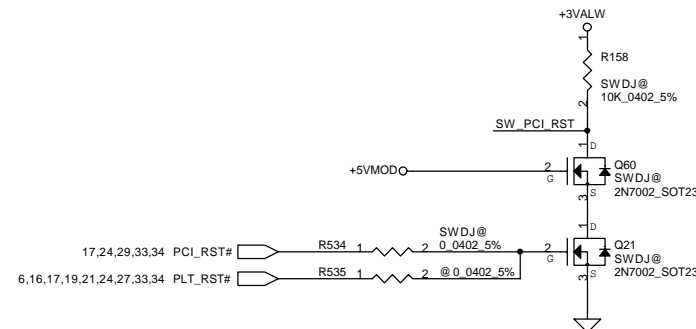
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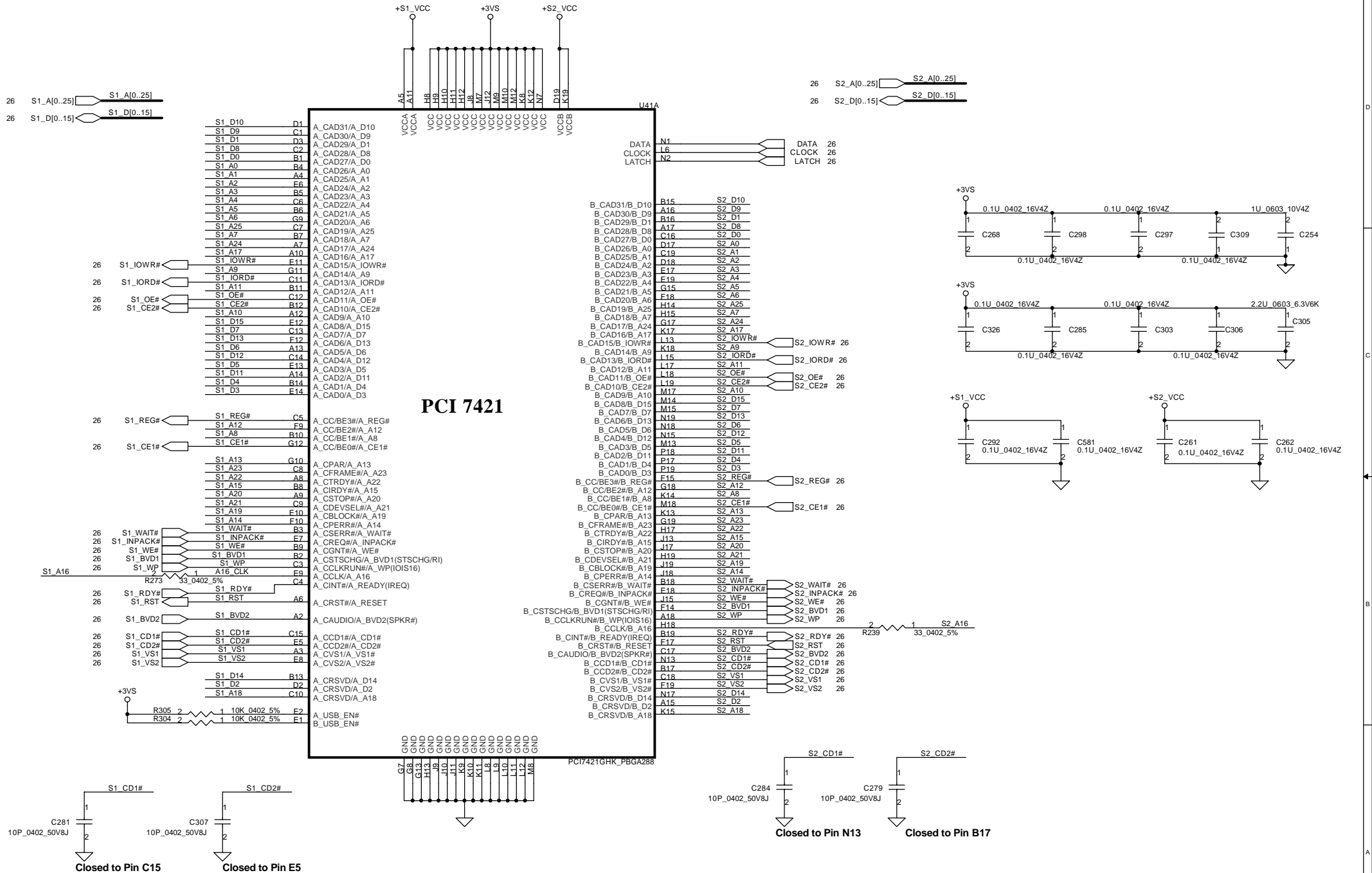
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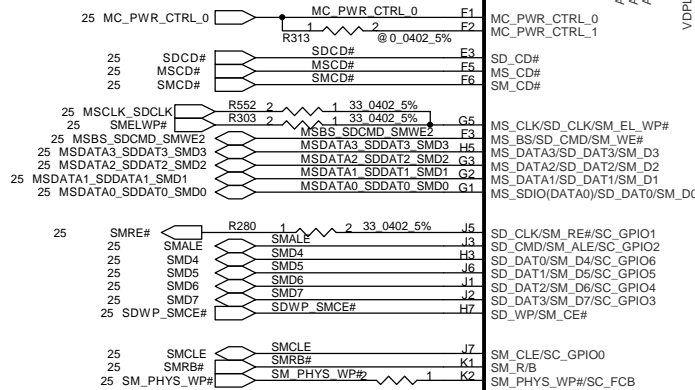
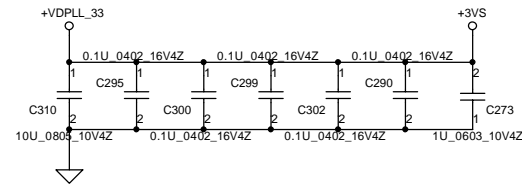
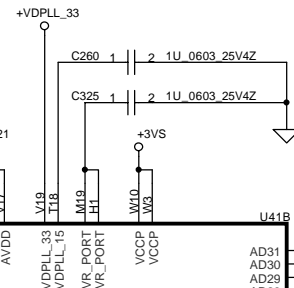
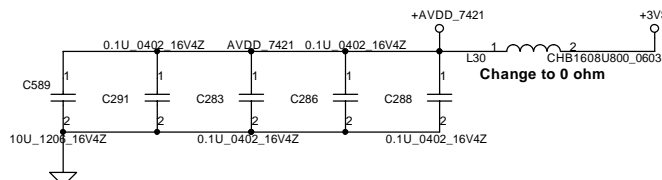
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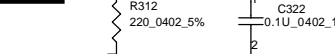
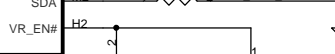
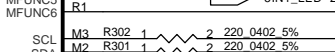
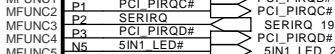
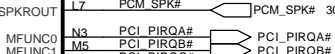
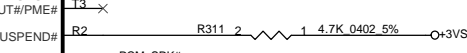
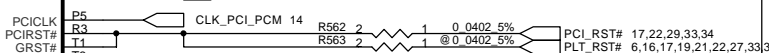
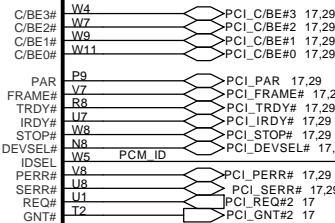
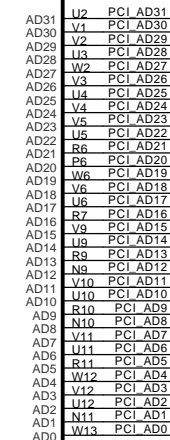
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PCI7421



LED R MAY CHANGE TO 150OHM

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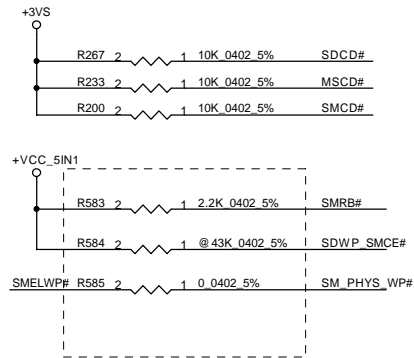
SCHEMATIC, M/B LA-2492

401317

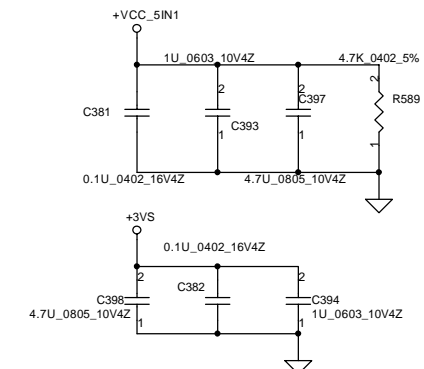
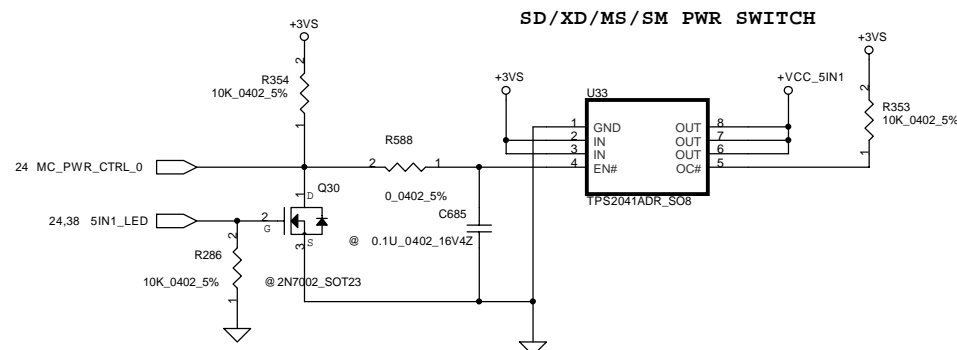
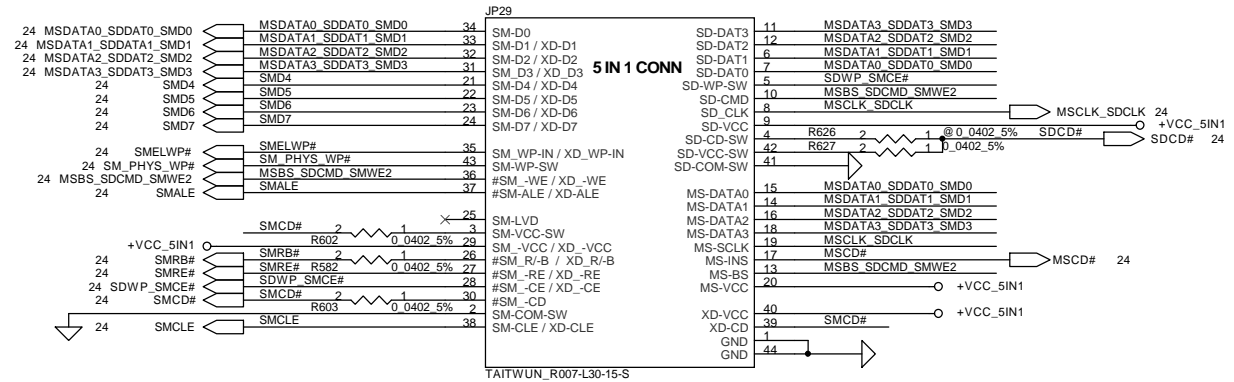
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5 in 1 CardReader Conn.

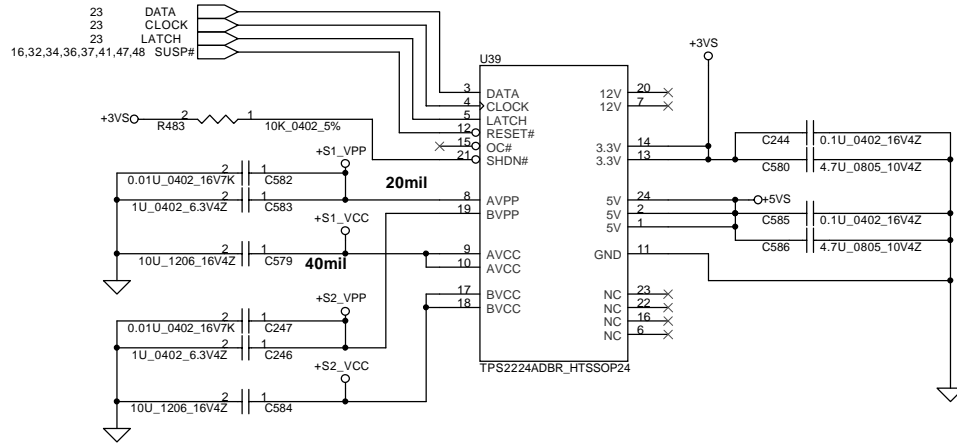


TI Workaround need check

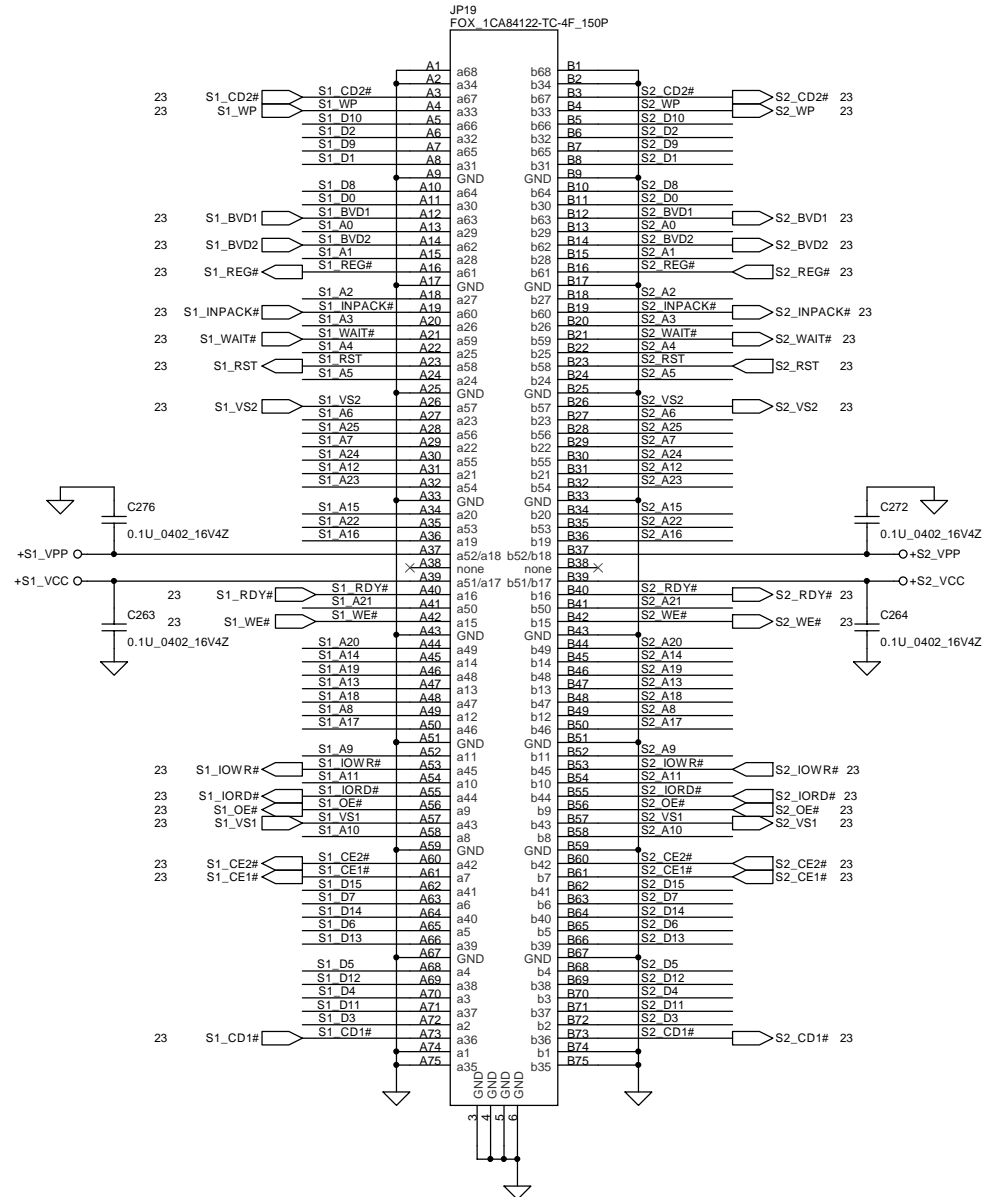


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Power Switch for PCMCIA



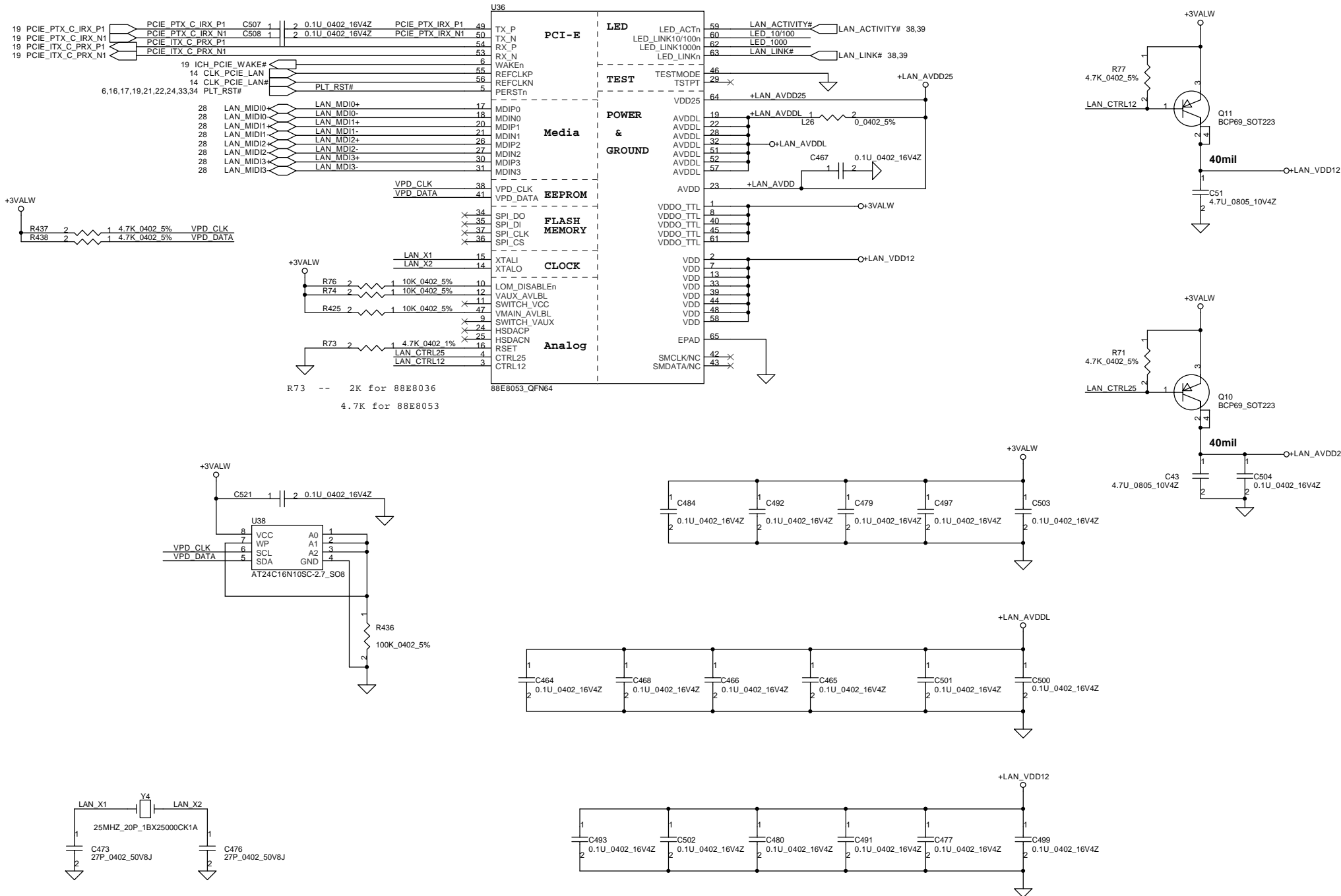
CardBus Socket



Compal Electronics, Inc.

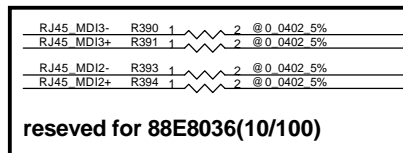
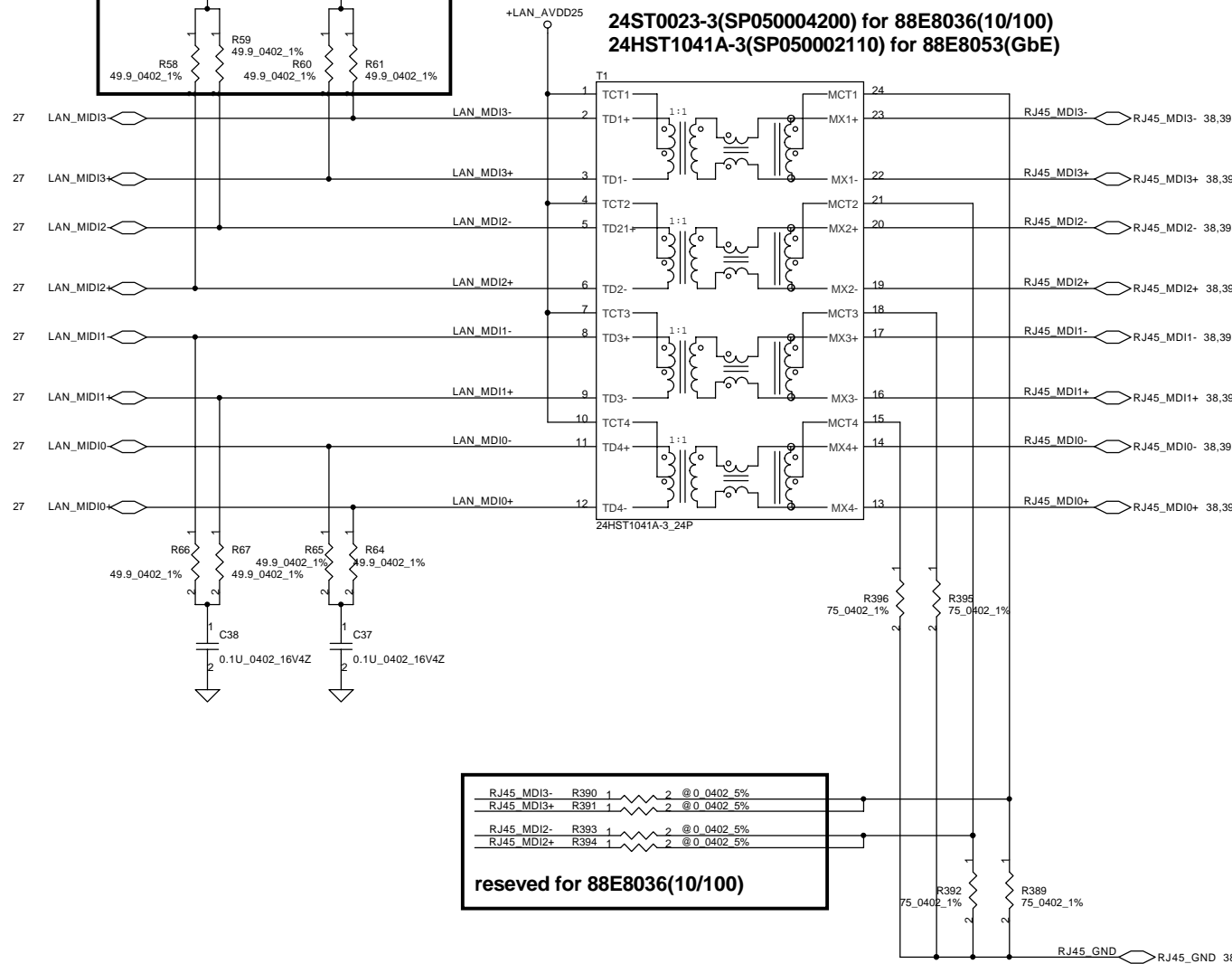
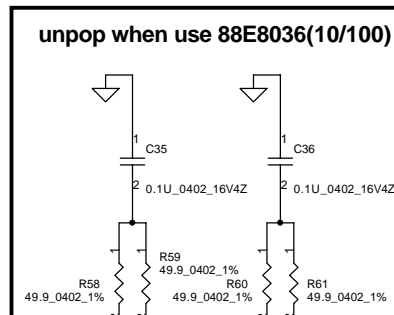
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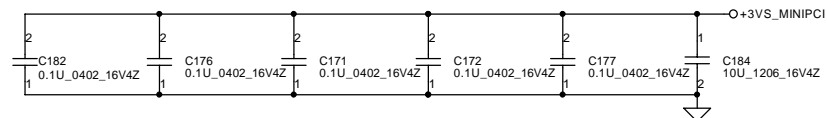
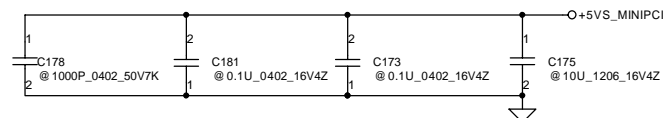
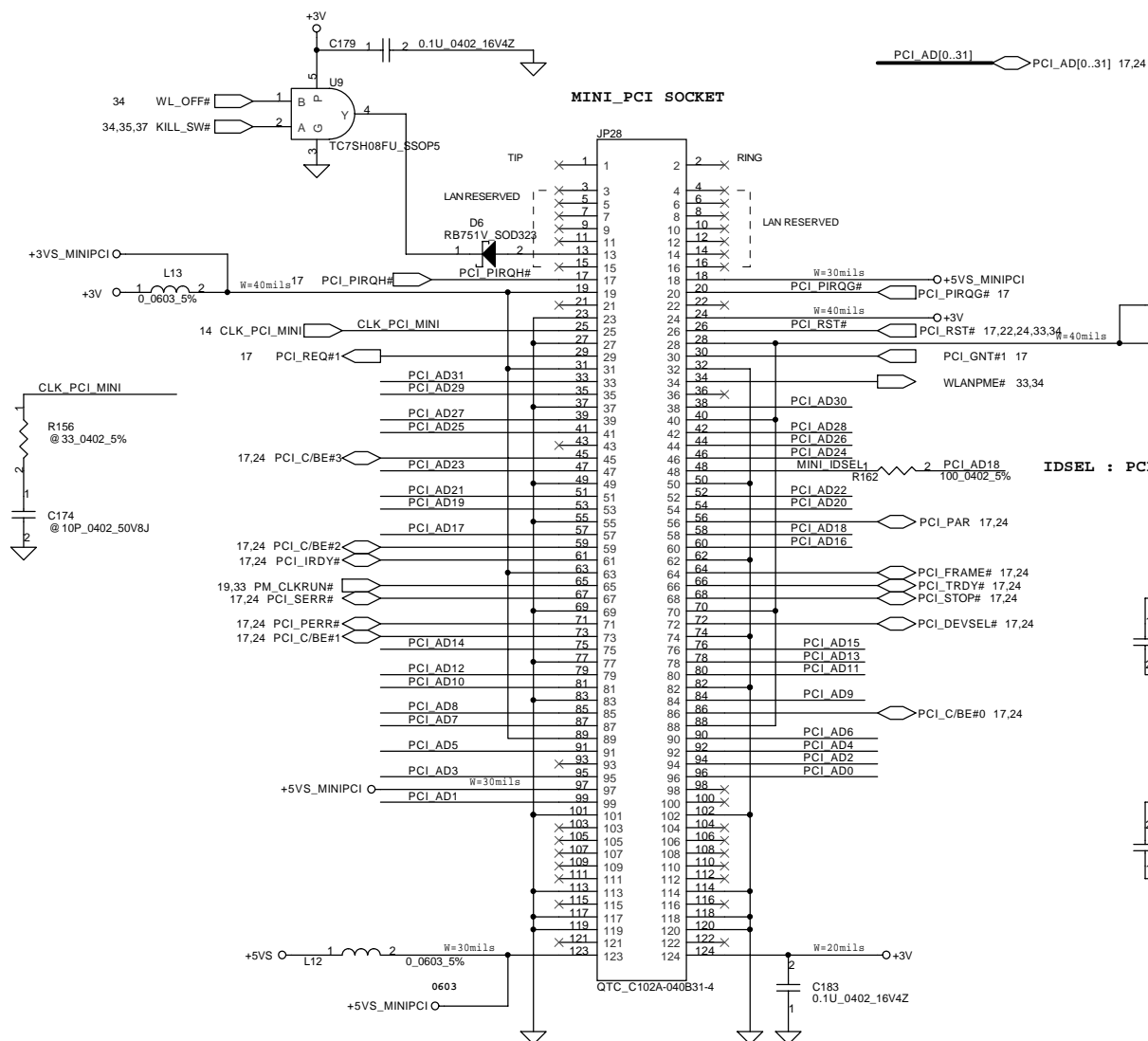
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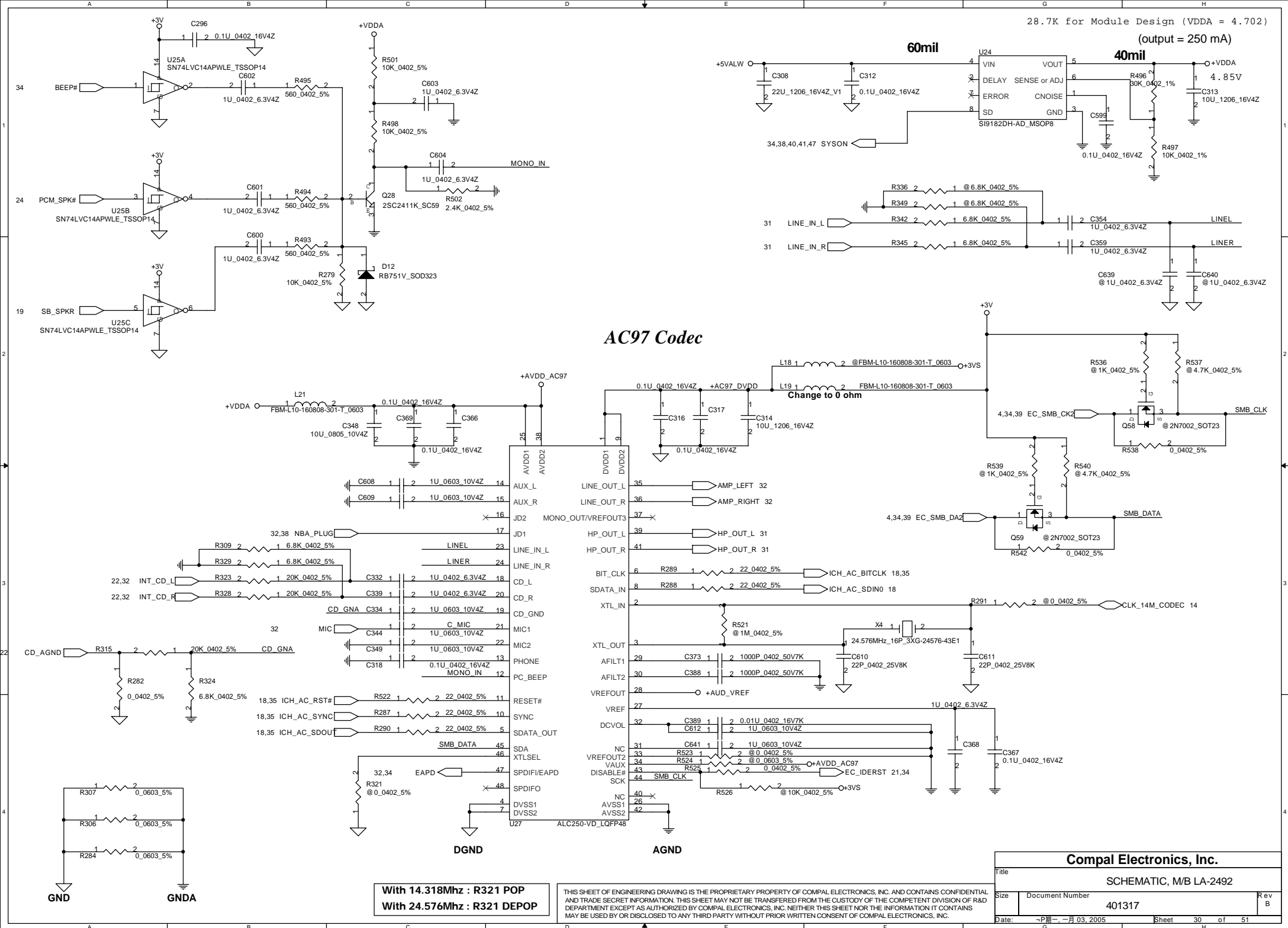
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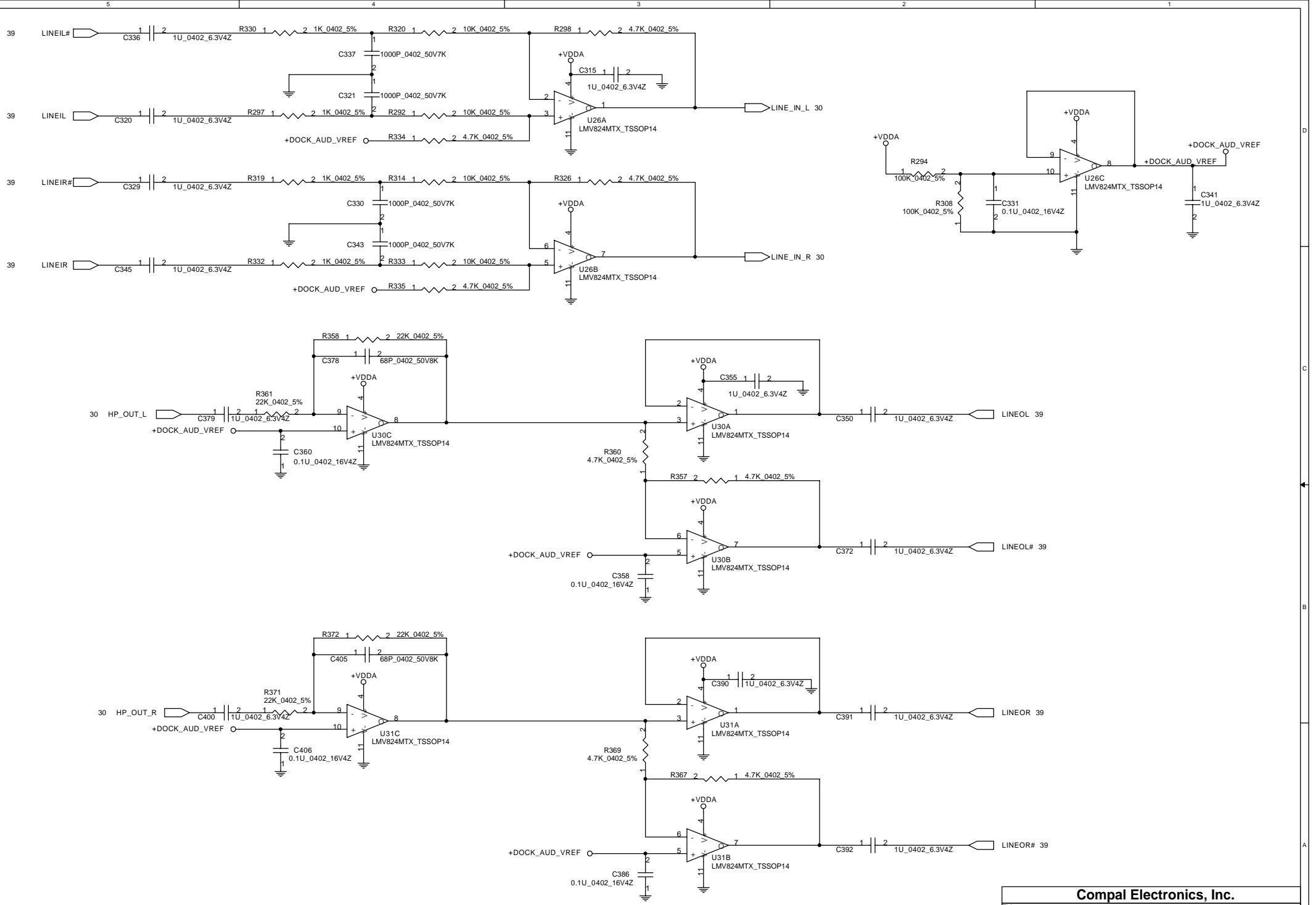


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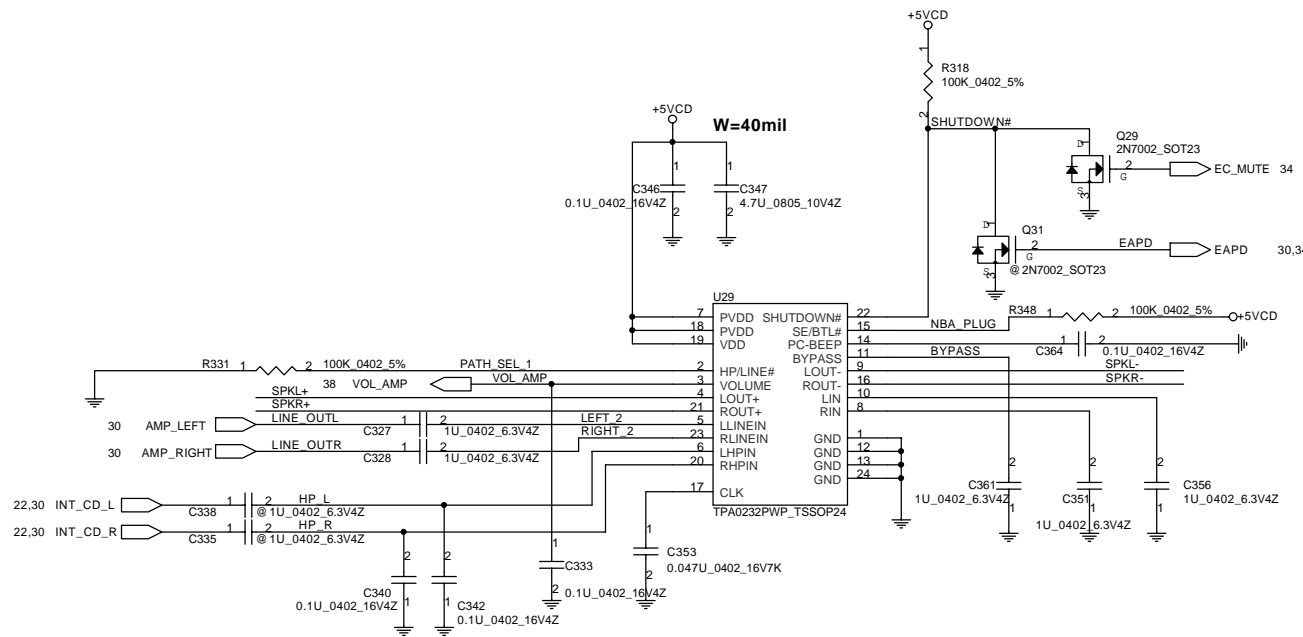
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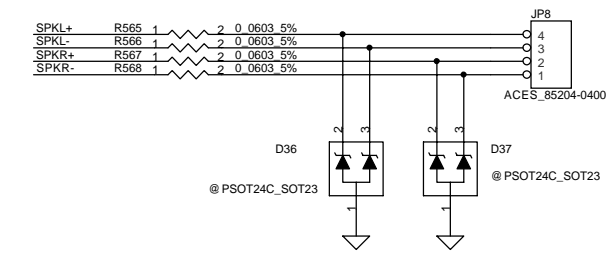


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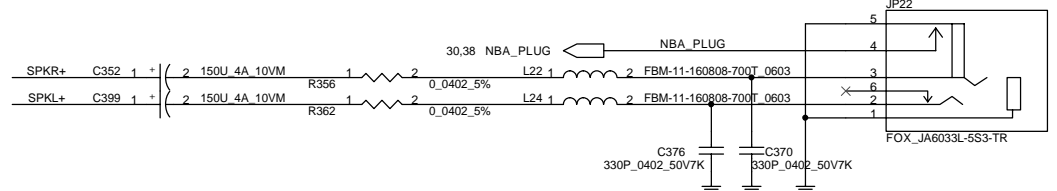
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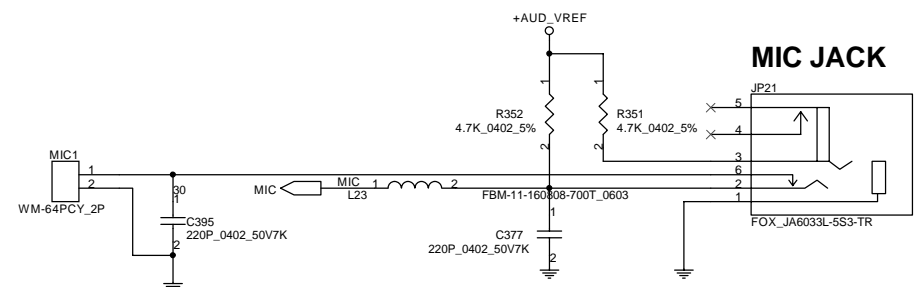
Speaker Conn.



HeadPhone JACK



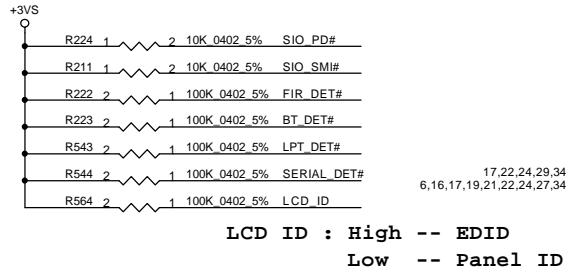
MIC JACK



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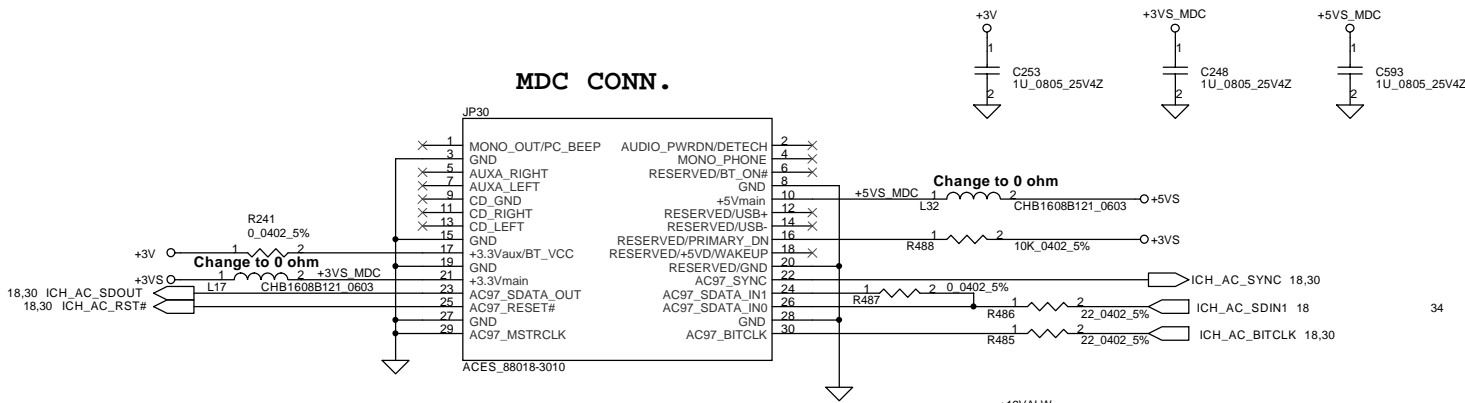
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SUPER I/O SMsC LPC47N217

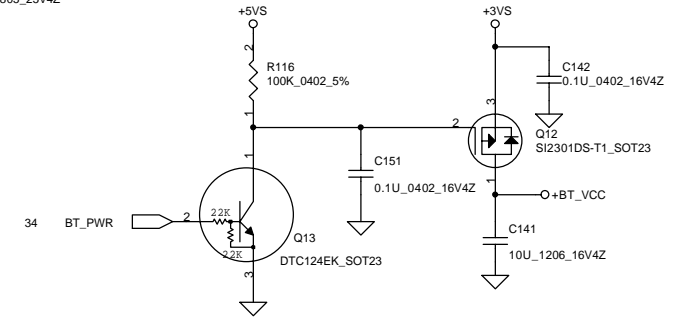




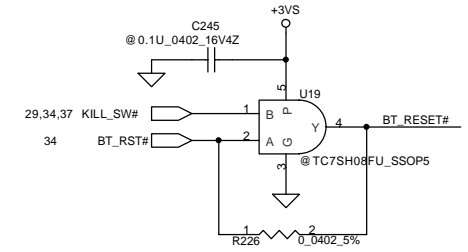
MDC CONN.



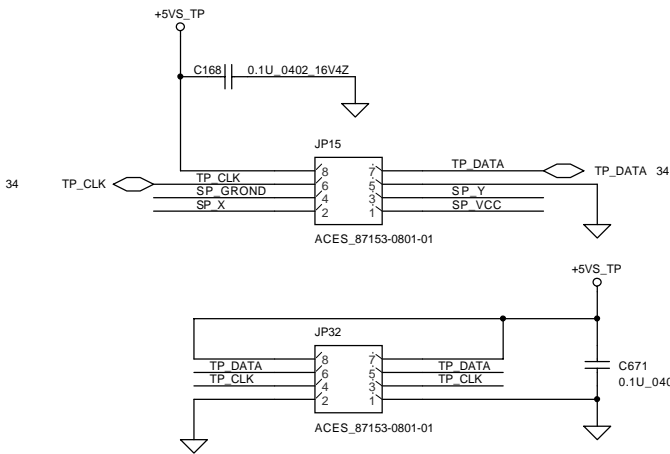
BlueTooth Interface



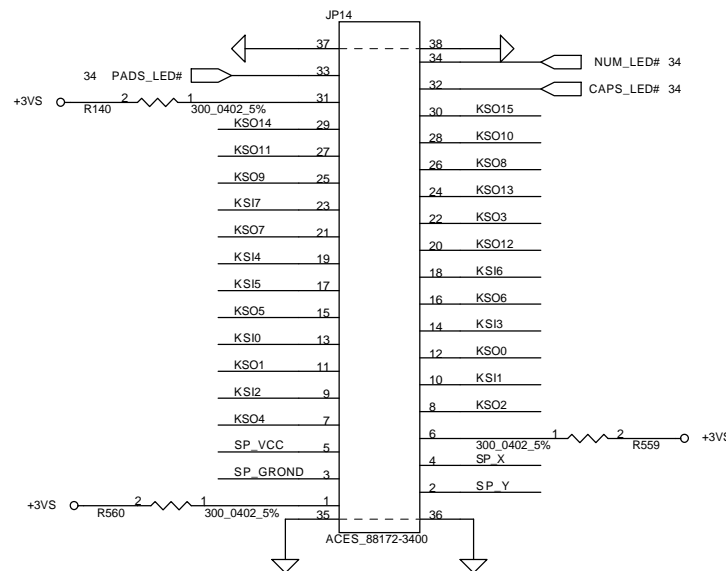
Module ID
Indication for polarity of reset
Reset input High Active -> Low
Reset input Low Active -> Open



TP CONN.



INT_KBD CONN.

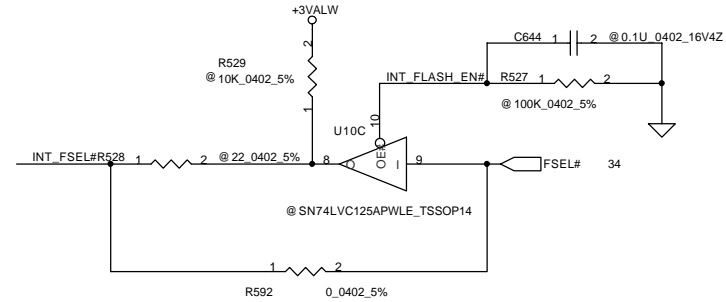
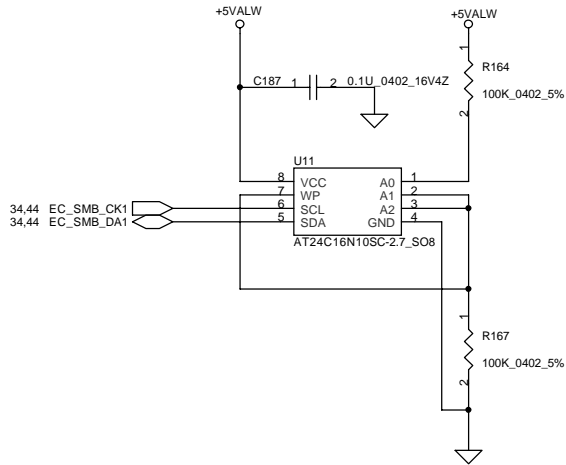
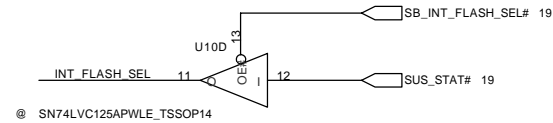
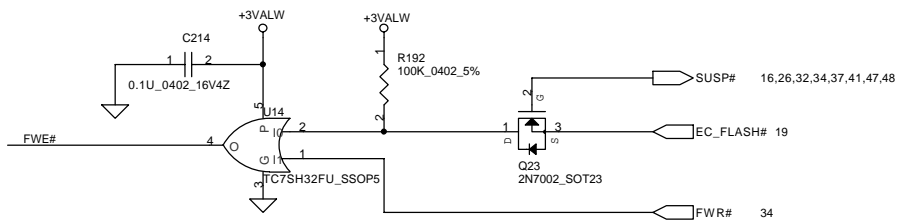


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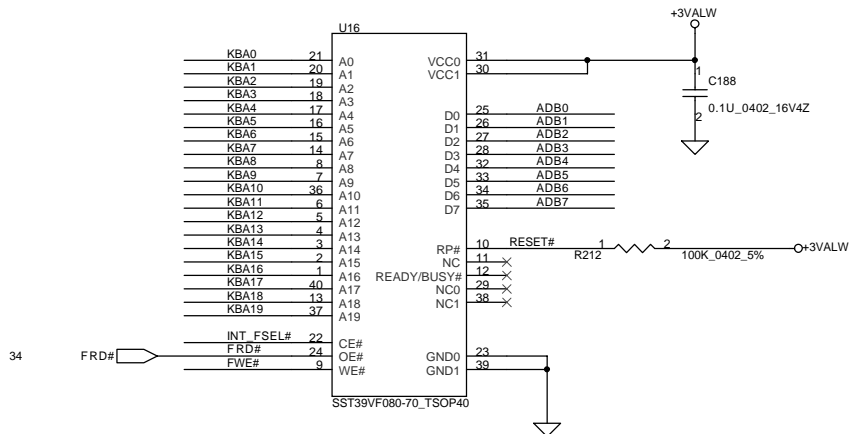
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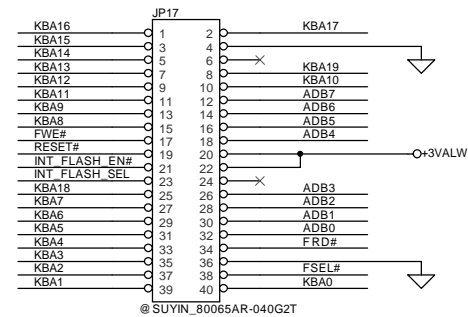


34 KBA[0..19] KBA[0..19]
34 ADB[0..7] ADB[0..7]

1MB Flash ROM



1MB ROM Socket



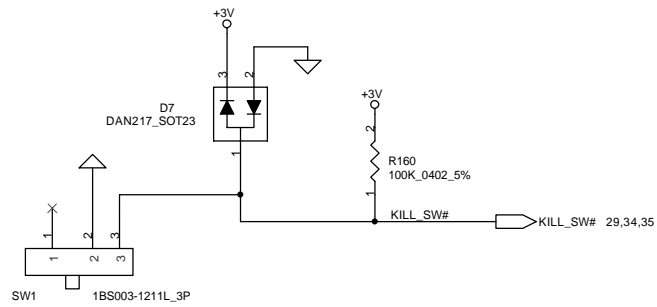
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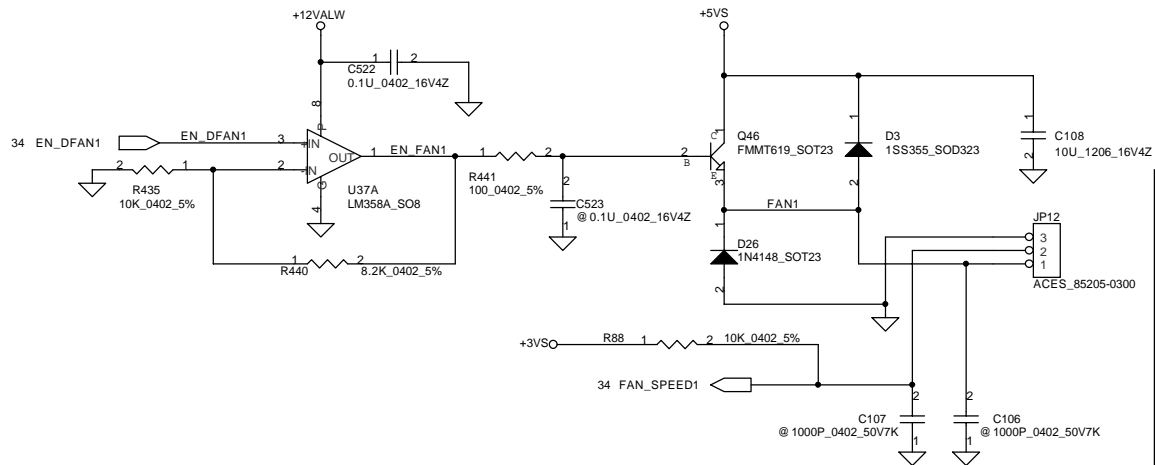
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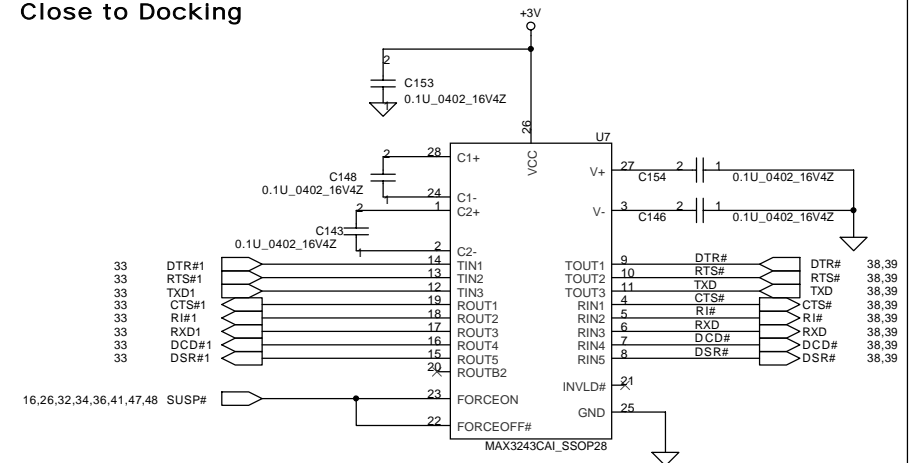
Kill SWITCH



FAN Conn



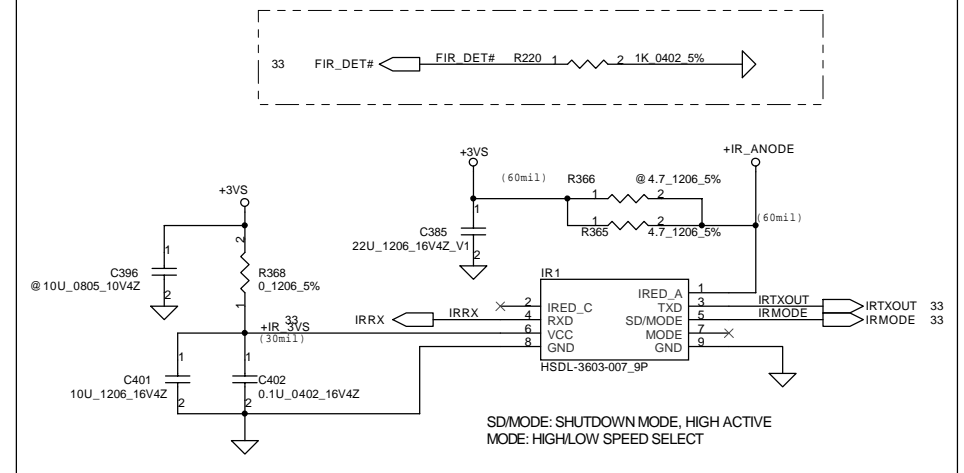
Close to Docking



No Docking and Serial Port -----> Del

FIR Module

```
L: R POP; FIR Enable
H: R De-POP/FIR Disable
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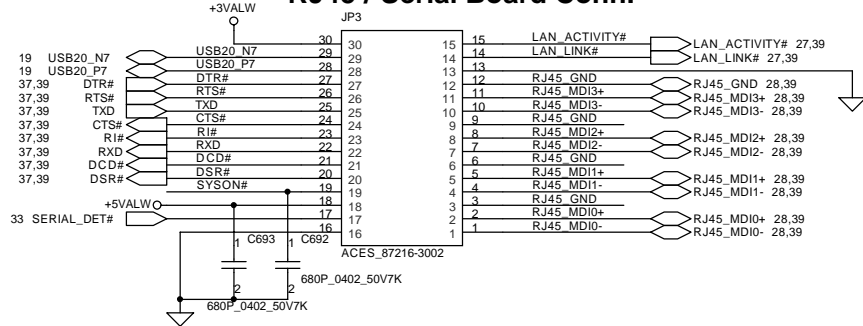
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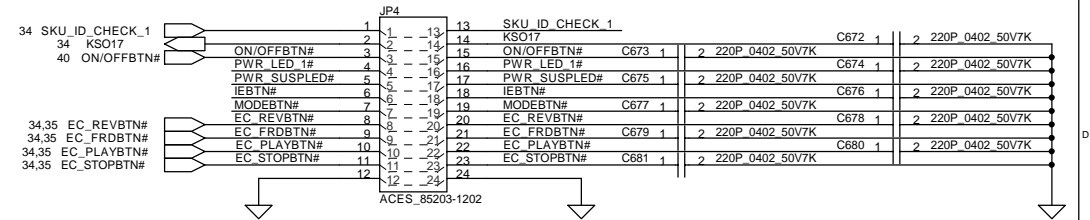
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RJ45 / Serial Board Conn.



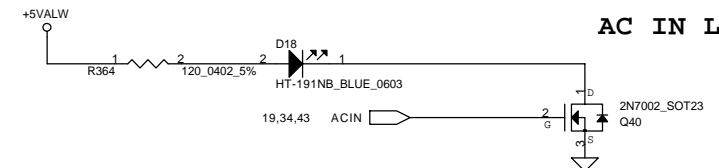
Power / LED Board Conn.



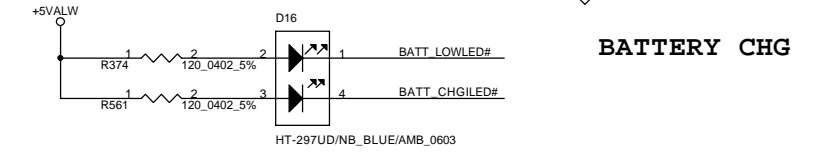
POWER/ON LED



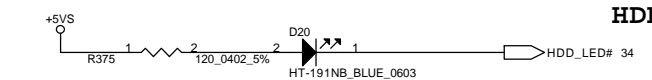
POWER/SUSP LED



AC IN LED



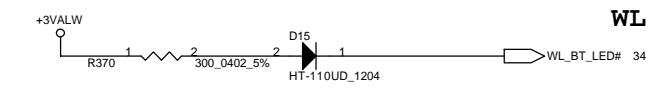
BATTERY CHG



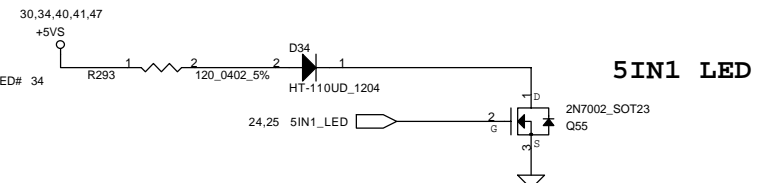
HDD LED



MODE LED

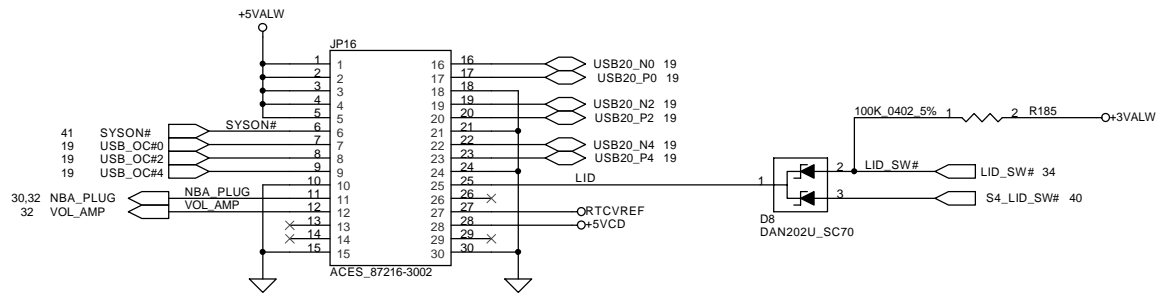


WL LED

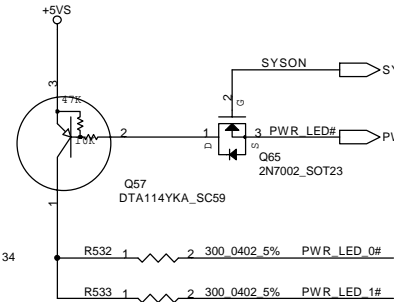
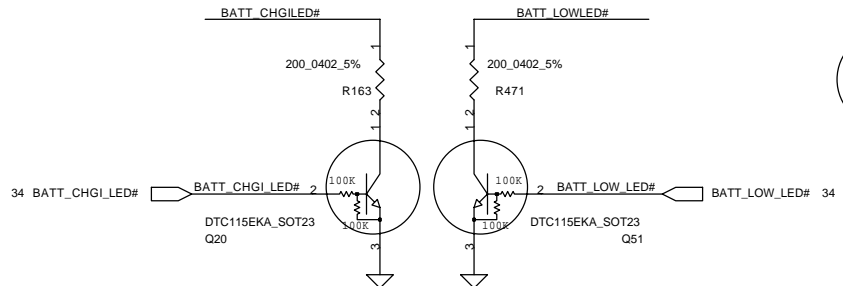


5IN1 LED

USB Board Conn.



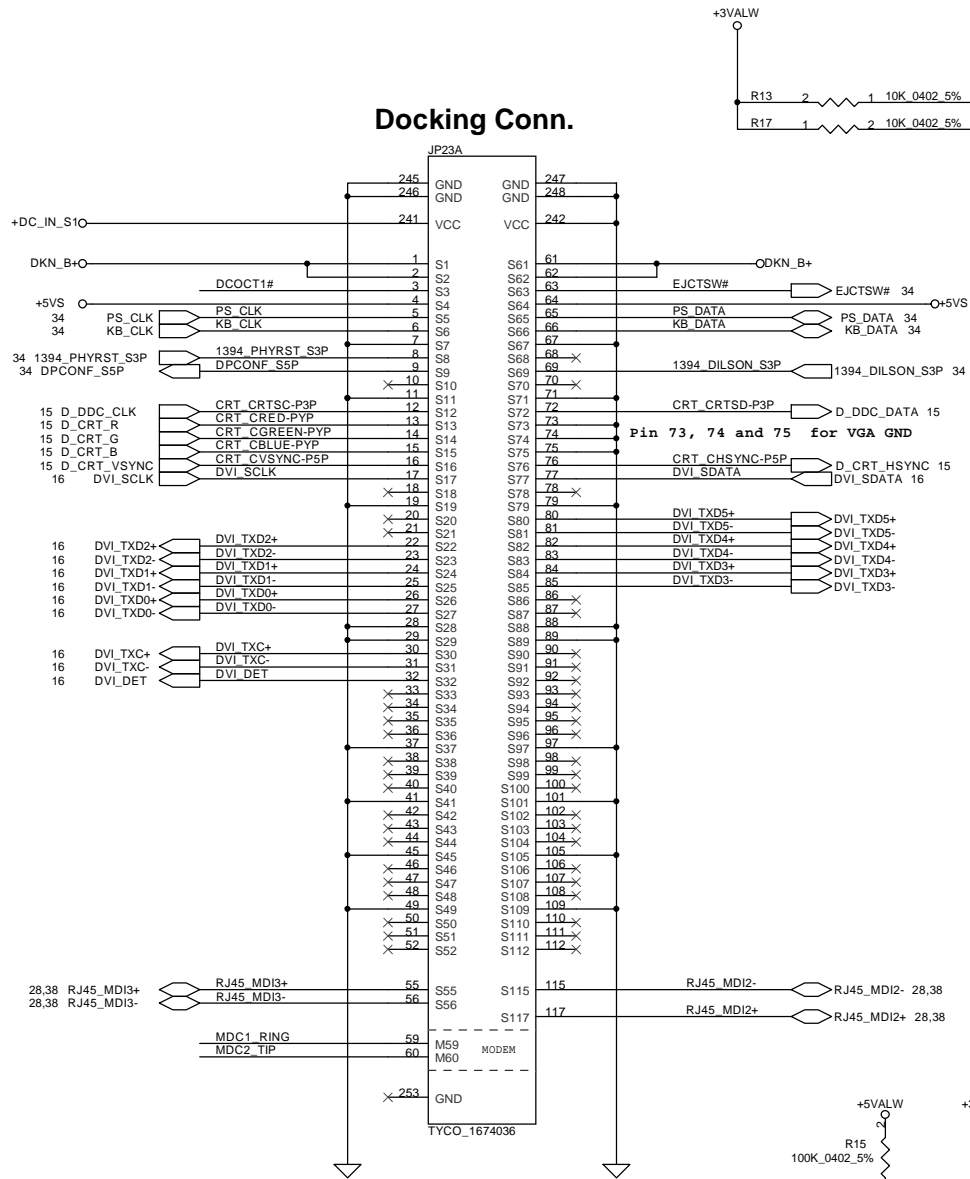
BATTERY CHG/LOW LED



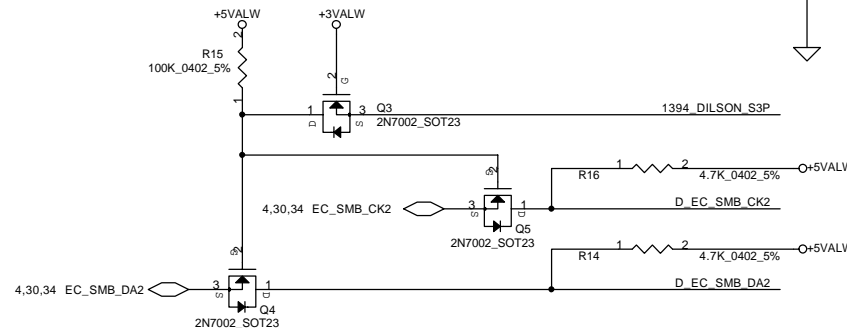
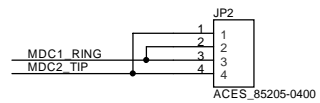
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Docking Conn.



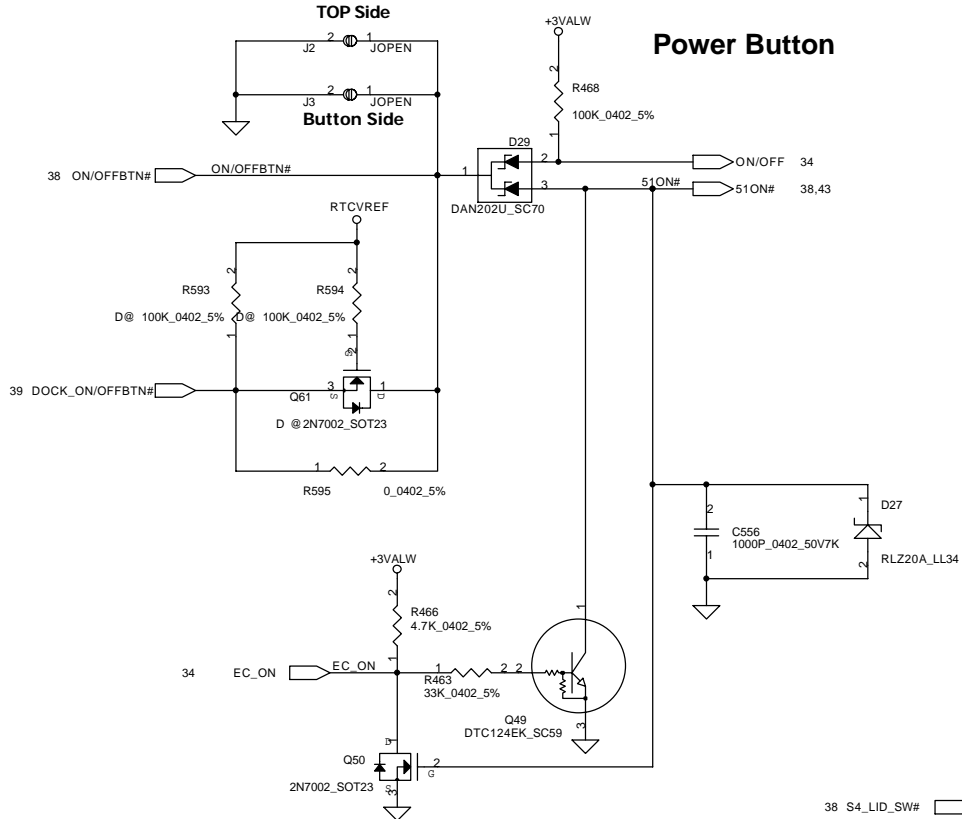
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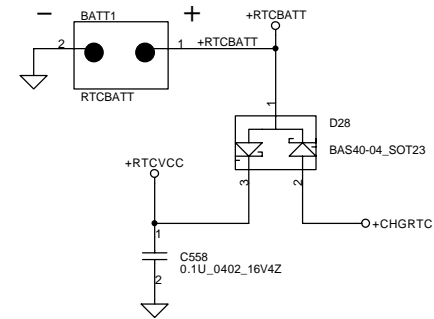
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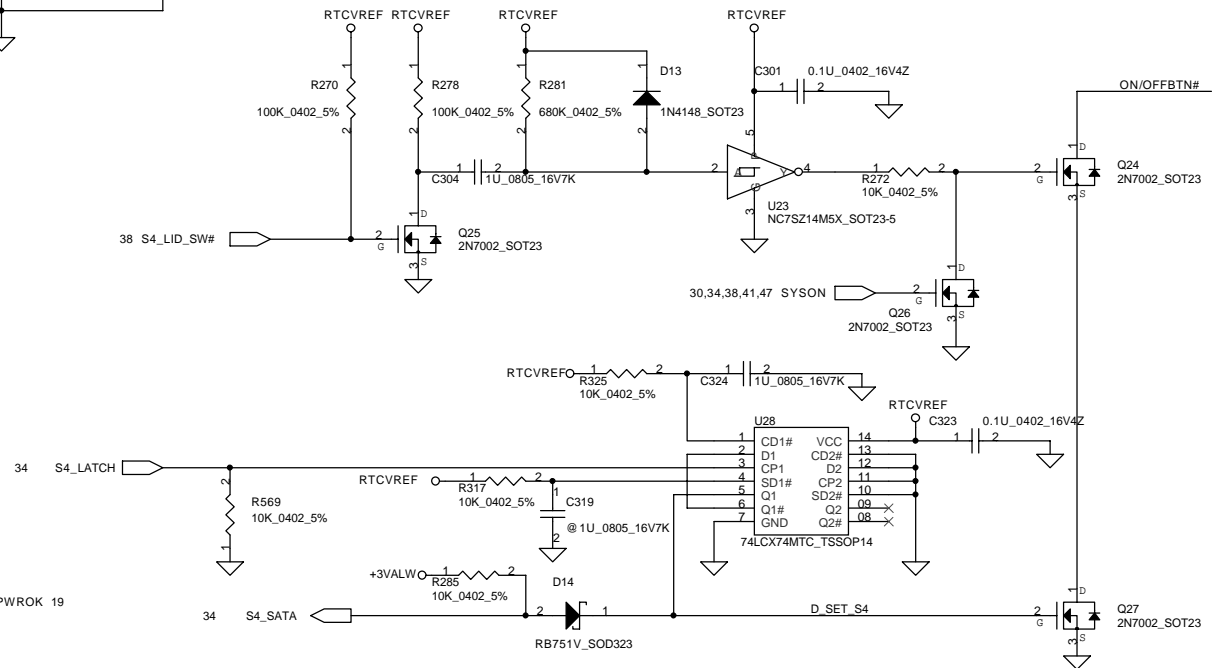
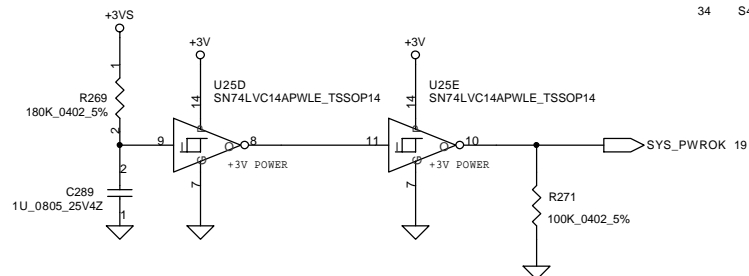
Power Button



RTC Battery



Power ON Circuit



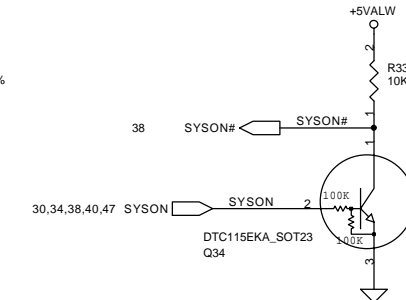
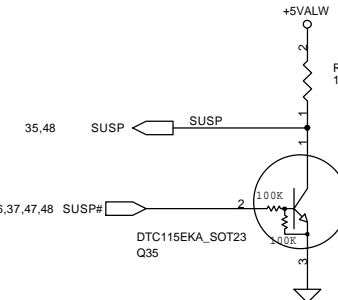
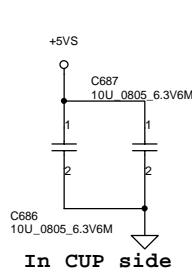
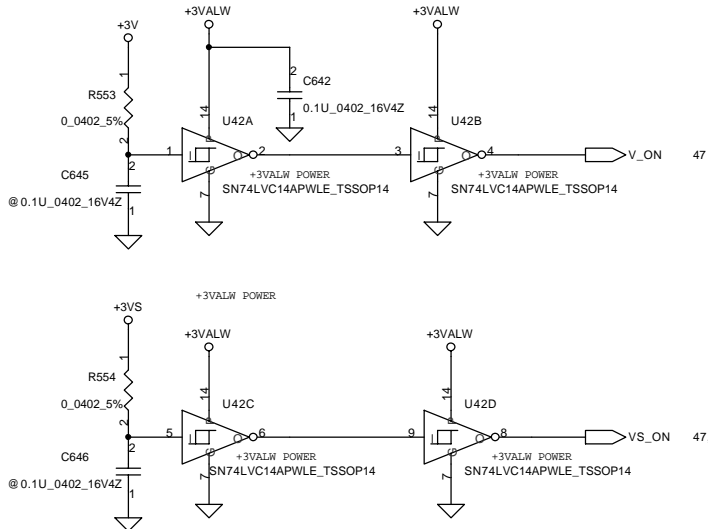
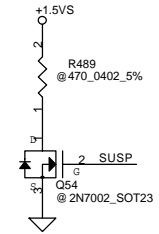
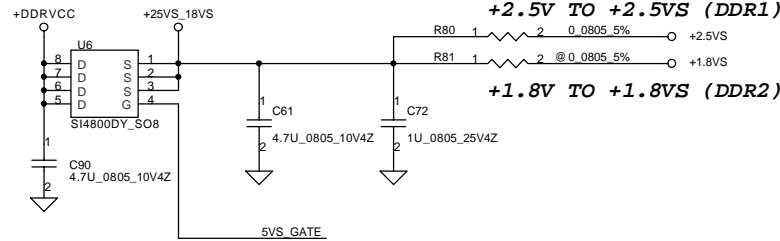
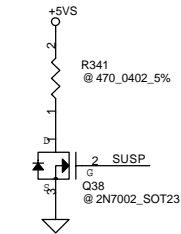
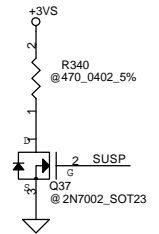
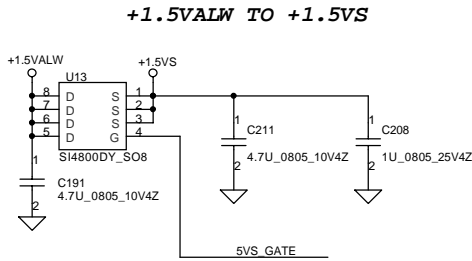
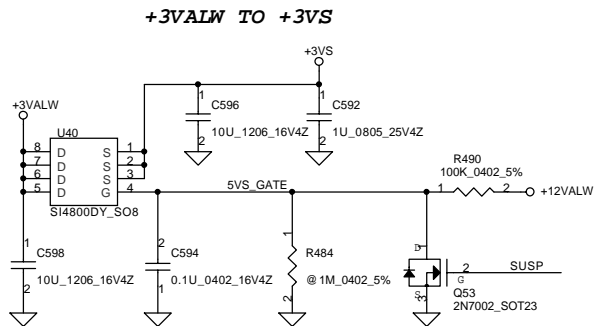
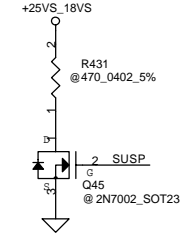
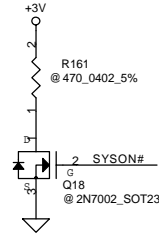
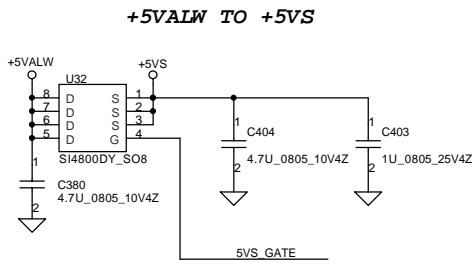
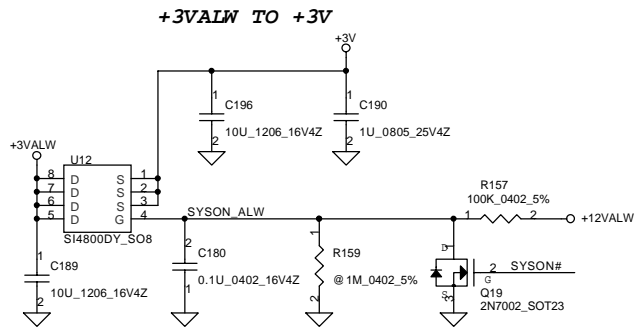
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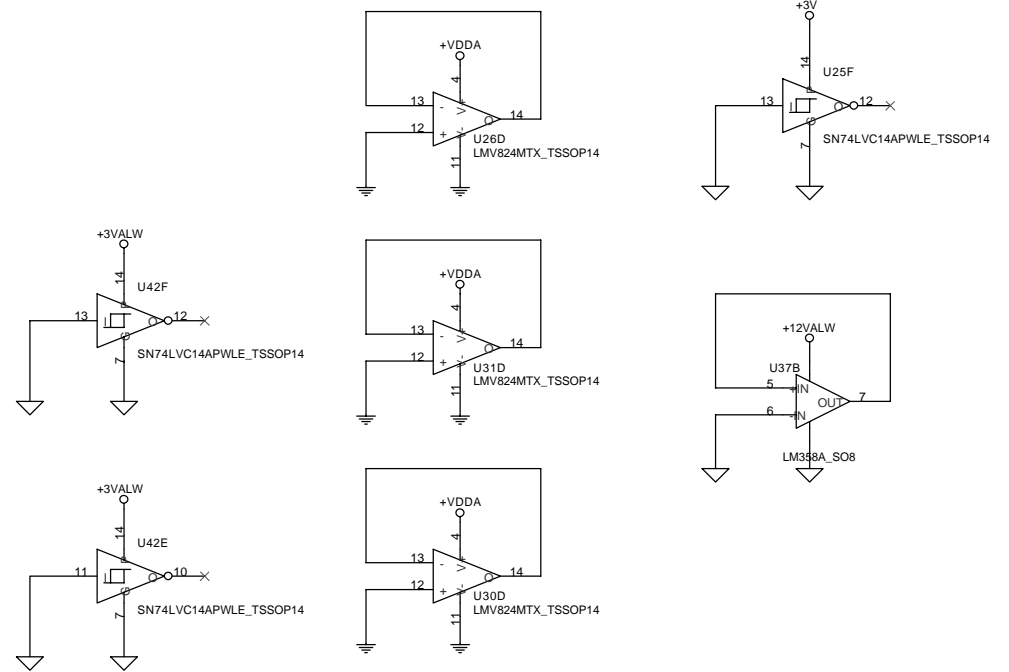
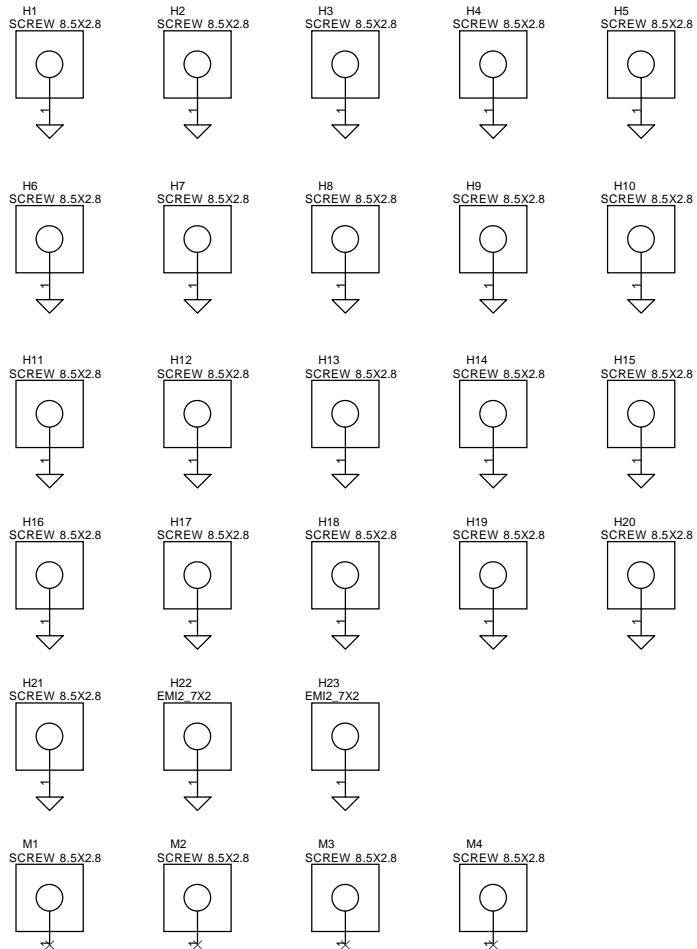
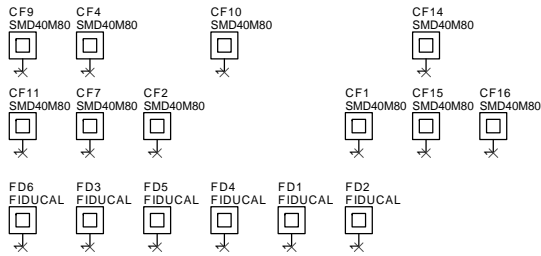
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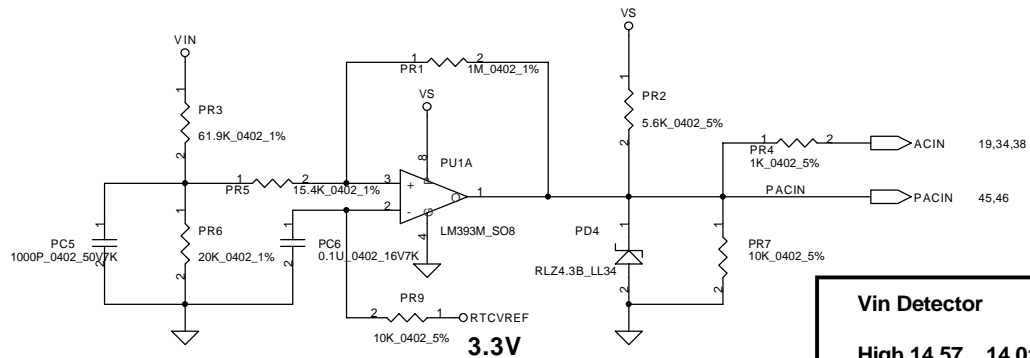
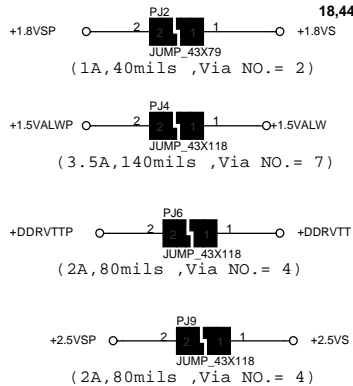
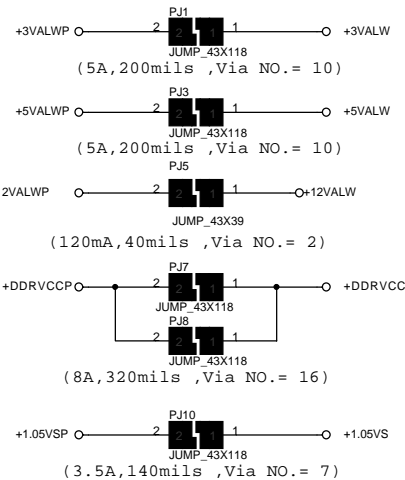
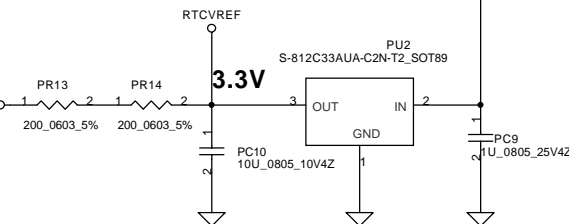
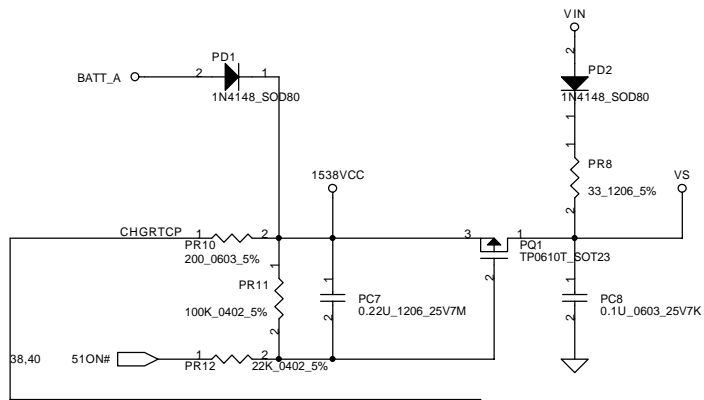
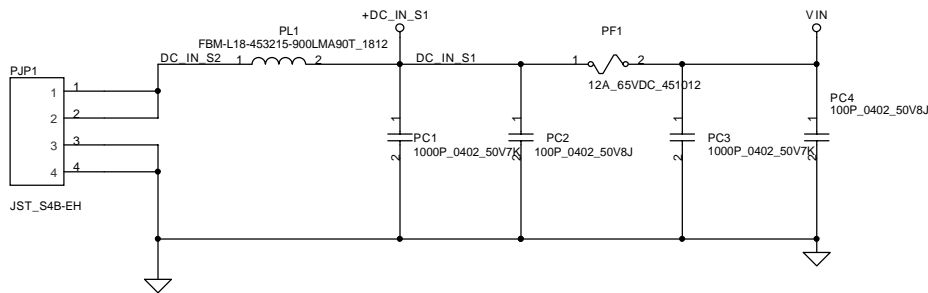
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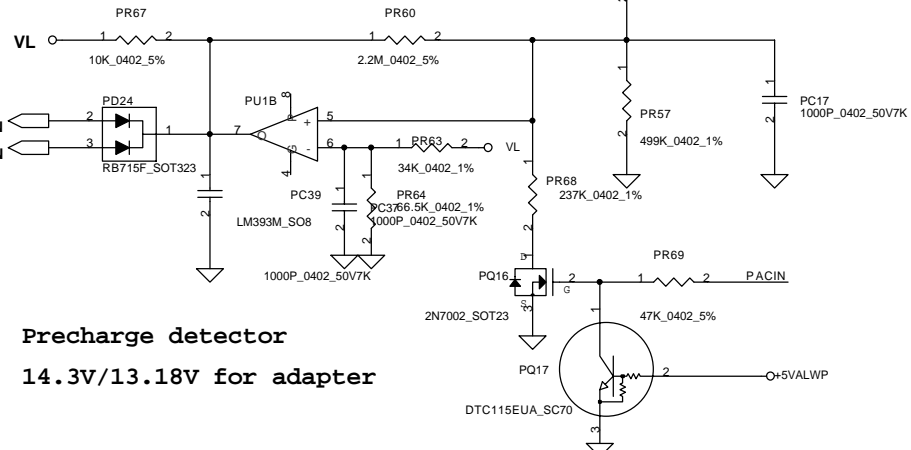
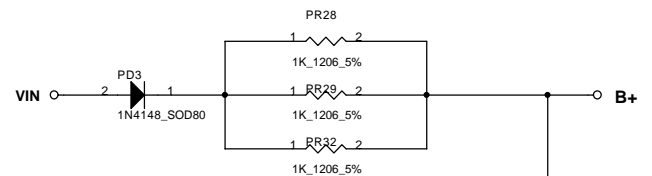
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Vin Detector

High 14.57 14.01 13.46
Low 14.06 13.51 12.98



Precharge detector

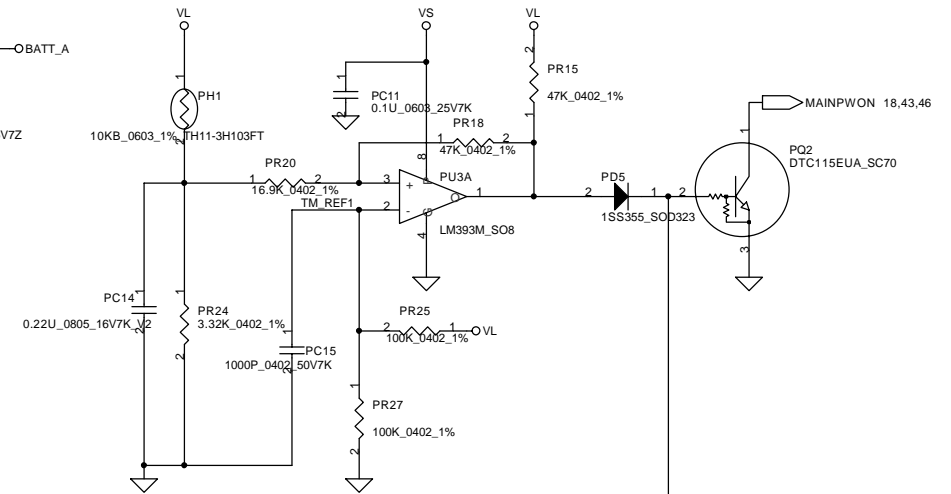
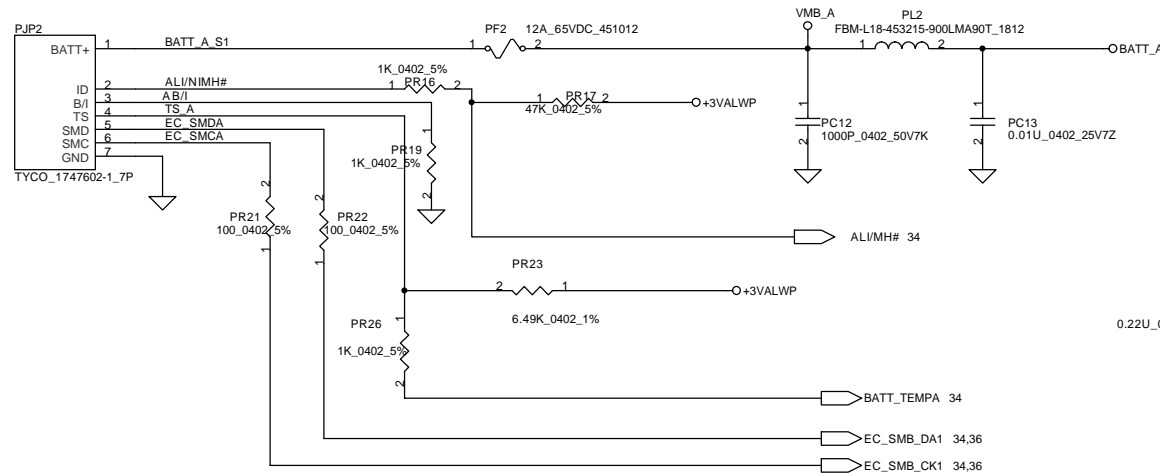
14.3V/13.18V for adapter

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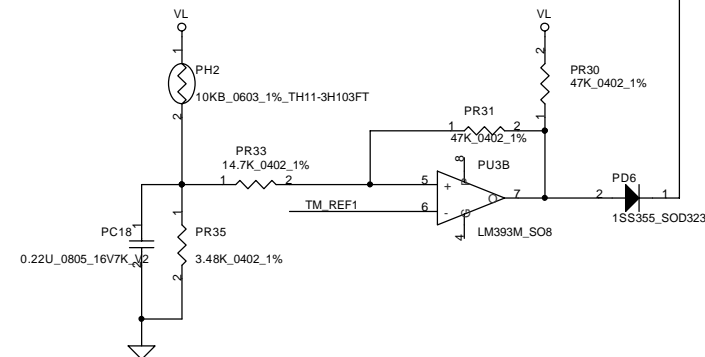
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PH1 under CPU botten side :
CPU thermal protection at 84 degree C
Recovery at 45 degree C

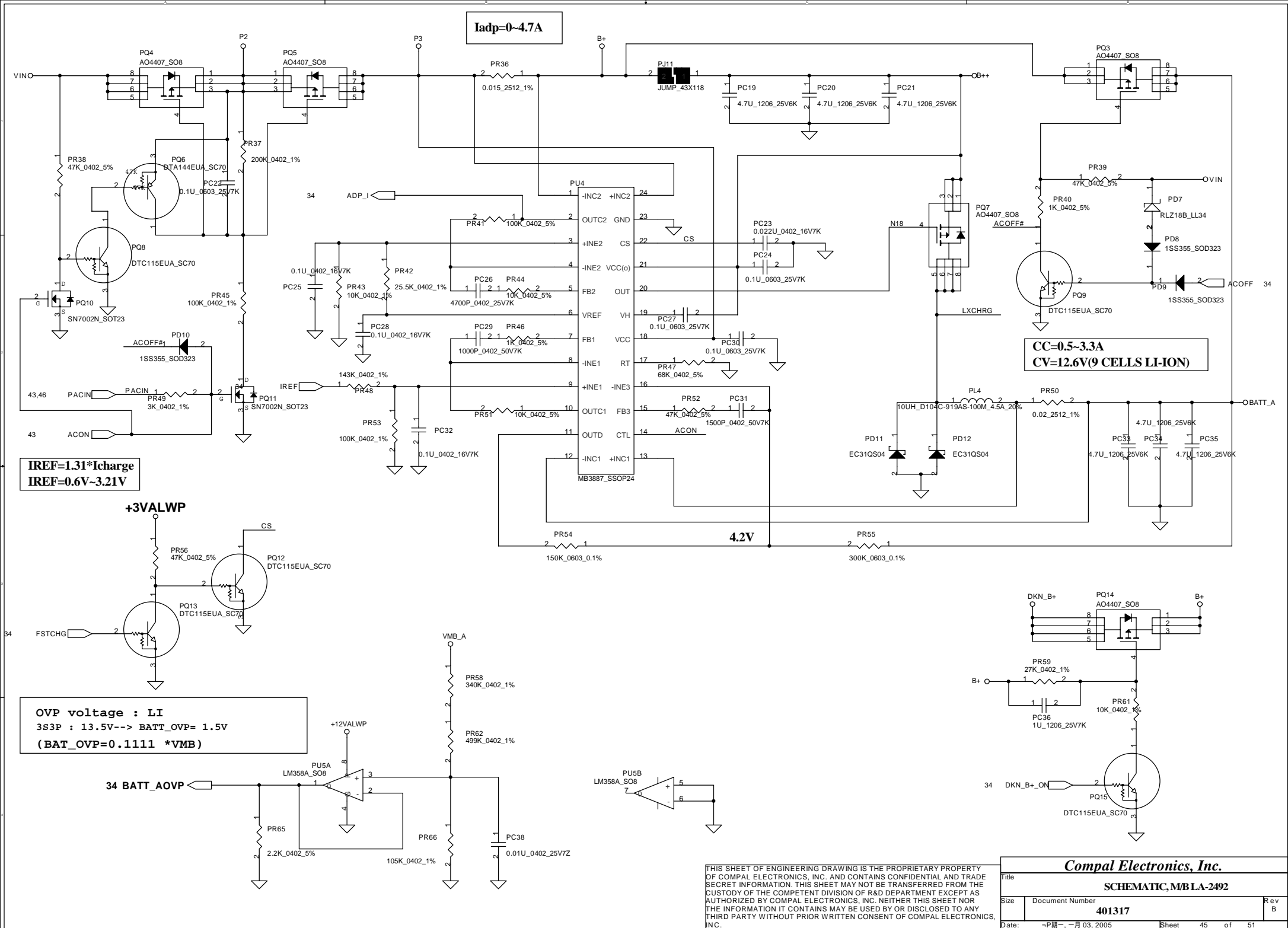


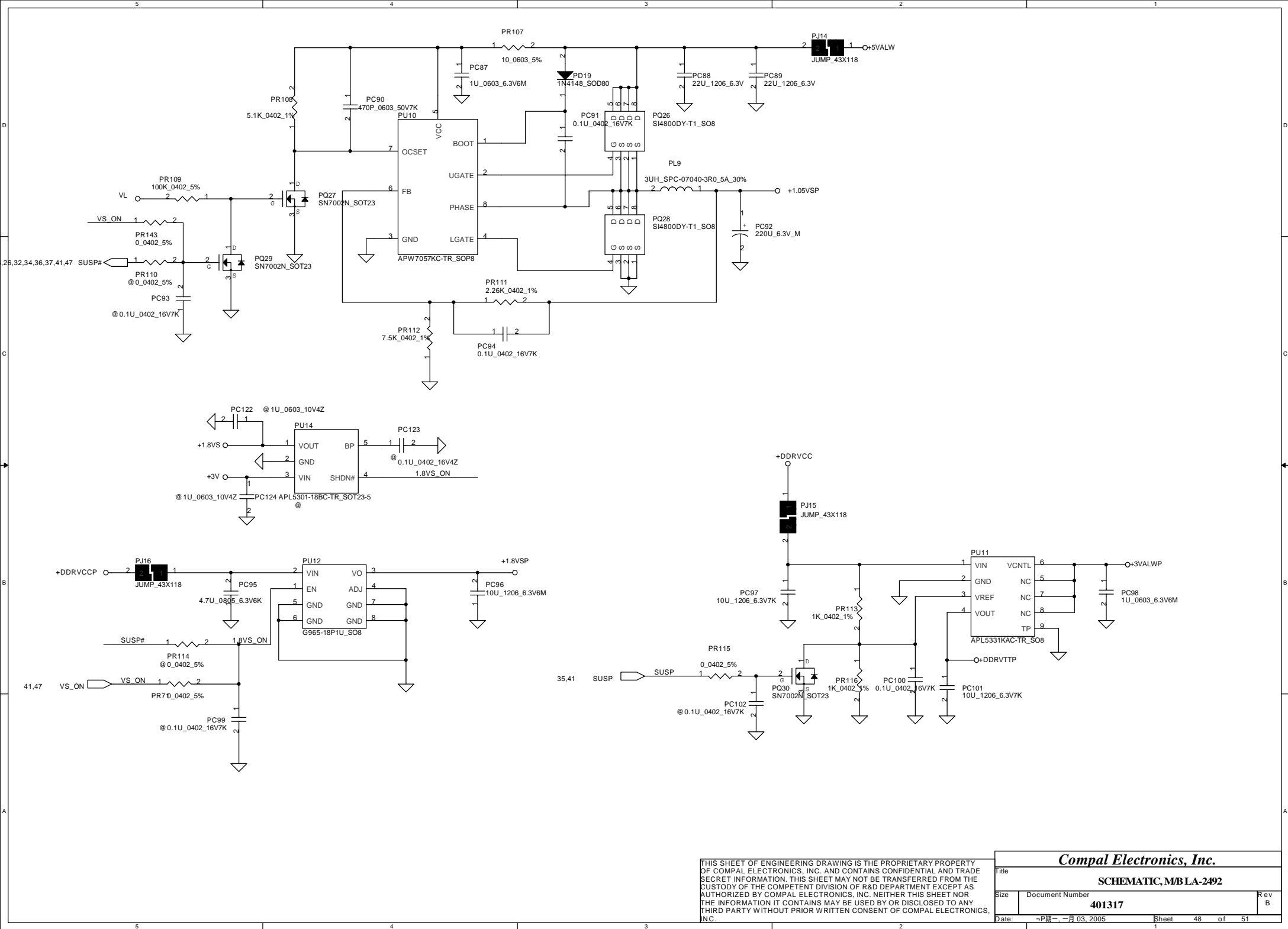
PH2 near main Battery CONN :
BAT. thermal protection at 79 degree C
Recovery at 45 degree C



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EAT10 PIR List

***** Rev:0.2 PIR List 2004/10/26 Writer by Sam Tsai *****

P04:Add @ in R28	Intel Recommend
P06:Add @ in C441, C427 D12J29 C460 Change Value from 220U to 330U	Power Team testing OK
P12:+3VS change from JP25.196 to JP25.194	Intel Recommend
P15:New add R570, R571 & R572 New add L33 Del D2 & D25	RGB without Docking EMI EMI
P16:Change U44 from 7404 to 74125	LCDVDD Soft-Start
P18:New add R573 R439 Change Value from 180K to 20K C271 Change Value from 0.1U to 1U	Intel Recommend Intel Recommend Intel Recommend
P20:R214 Change Value from 1K to 10ohm	Intel Recommend
P22:New add @R , @R& Q	SWDJ testing
P24:New add R586 New add @R581	TI Recommend
P25:New add R582, R583, @R584, R585, R588, R589 & @C685	TI Recommend
P27:R73 Change Value from 4.99K to 4.7K	Marvwl Recommend
P31:R361 & R371 Change Value from 47K to 22K	Design Change
P33:New add R543, R544 P32:Modify C399 Net to SPKL+	Design Change
P33:New add L34 add@ in C647 ~ C662	EMI
P34:New add R587	Design Change
P35:New add JP32 & C671 New add C682 ~ C684 JP13 reverse	Design Change EMI Design Change
P36:New add	SWDJ testing
P37:SW1 change to 1BS003-1211L_3P	Design Change
P38:Q52.3 change from +3VALW to +3V Q57.3 change from +5VALW to +5VS Lid Switch IC Power change from JP16.26 +3VALW to JP16.27 New add C672 ~ C681	Design Change RTCVREF EMI
P39:New add R574	Design Change
P40:Del D11	Design Change

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

[illegible]

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