

Compal Confidential

DCL51 Schematics Document

Banias uFCBGA/uFCPGA Package with Montara-GM Core Logic

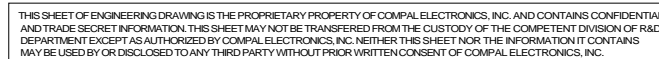
2003-06-12

REV: 1.0

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Fan Control page 31



Voltage Rails

Power Plane	Description	S0-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
+VCCP	1.05V rail for Processor I/O	ON	OFF	OFF
+1.2VS	1.2VS switched power rail for GMCH	ON	OFF	OFF
+1.25VS	1.25V switched power rail	ON	OFF	OFF
+1.5VALW	1.5V power rail	ON	ON	ON
+1.5V	1.5V power rail	ON	ON	OFF
+1.5VS	1.5V power rail for GMCH	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+2.5V	2.5V power rail	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*
+5V	5V power rail	ON	ON	OFF
+5VS	5V switched power rail	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.

Board ID Table

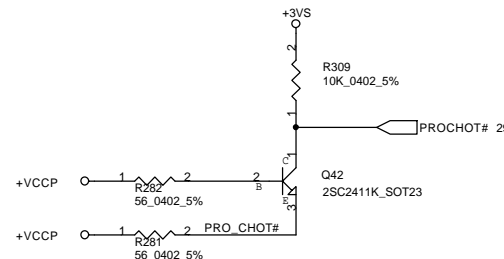
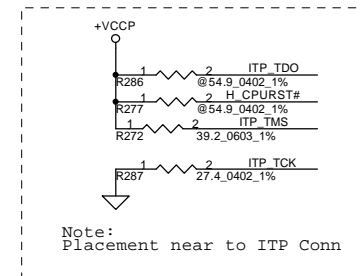
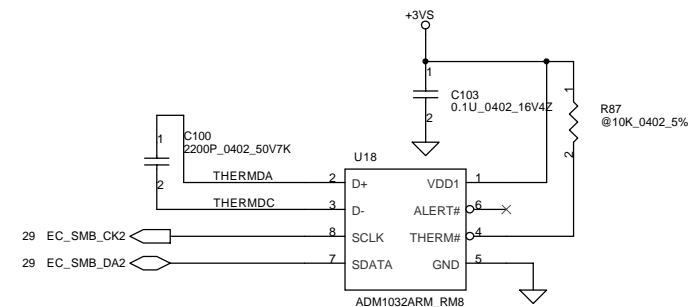
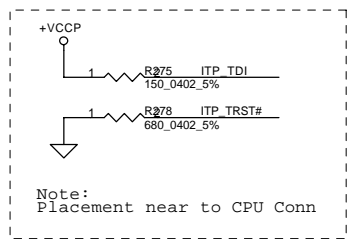
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0	1	0	0.3 (For 030)
0	1	1	1.0 (For 030)
1	0	0	0.1 (For ABO)
1	0	1	0.2 (For ABO)
1	1	0	0.3 (For ABO)
1	1	1	1.0 (For ABO)

External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
CardBus	AD20	2	PIRQA
LAN	AD17	3	PIRQF
Mini-PCI	AD18/AD20	1/4	PIRQG/PIRQH
1394	AD16	0	PIRQE

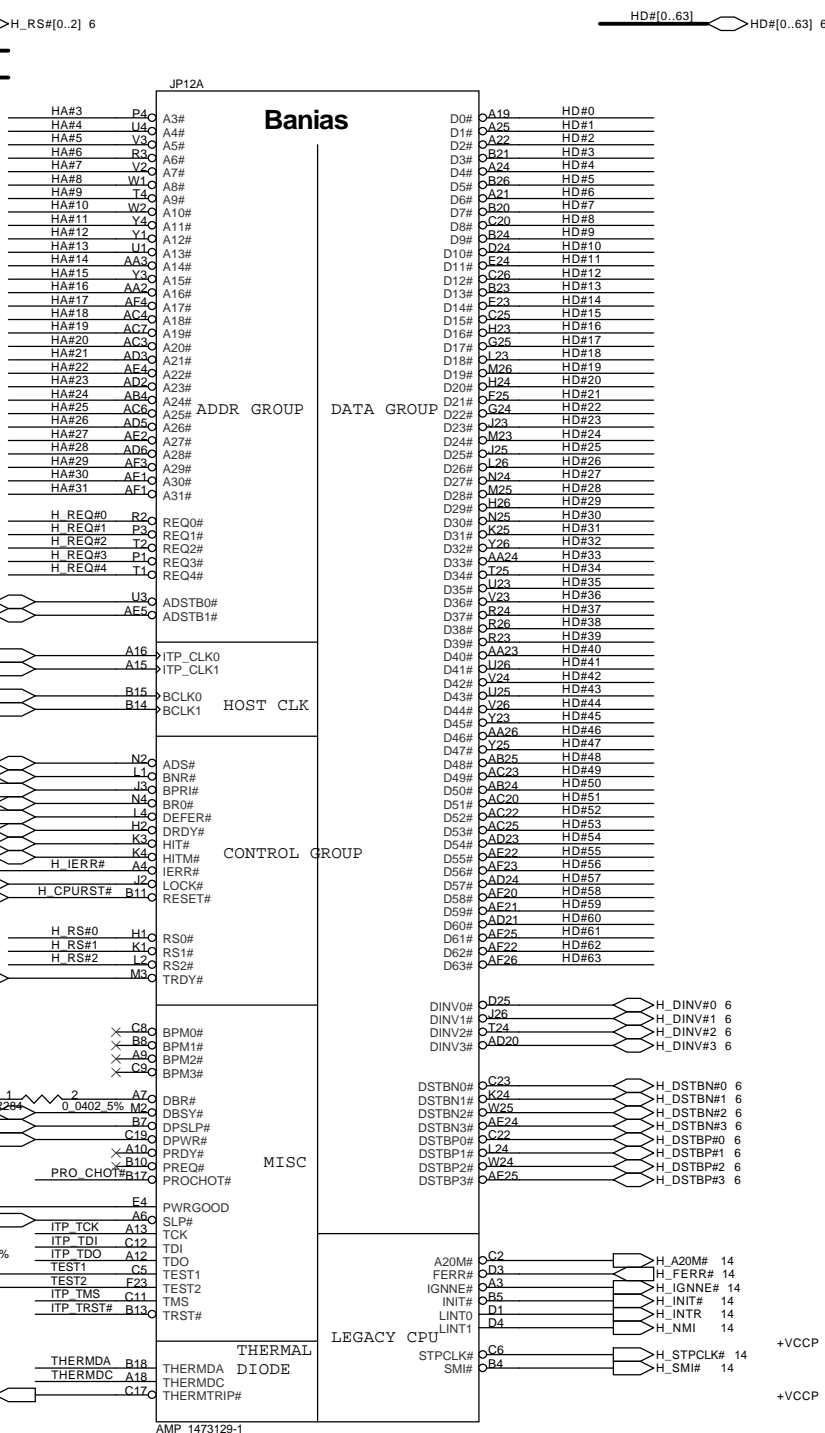
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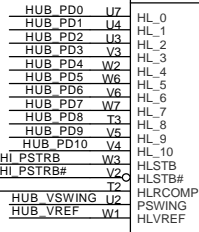
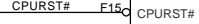
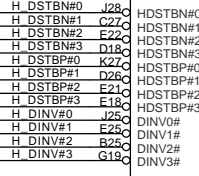
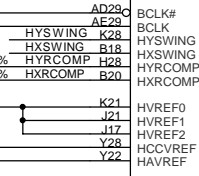
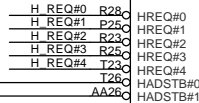
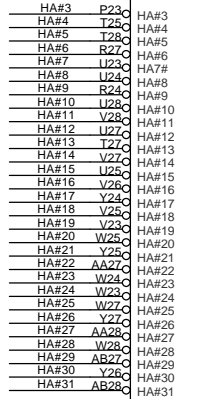
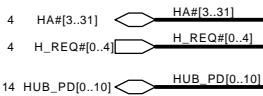


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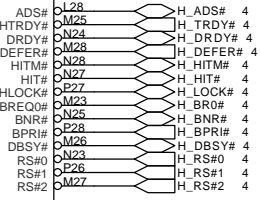
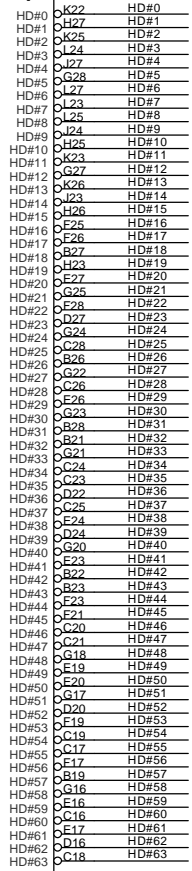
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Banias



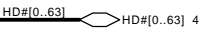
Montara-GM(L)



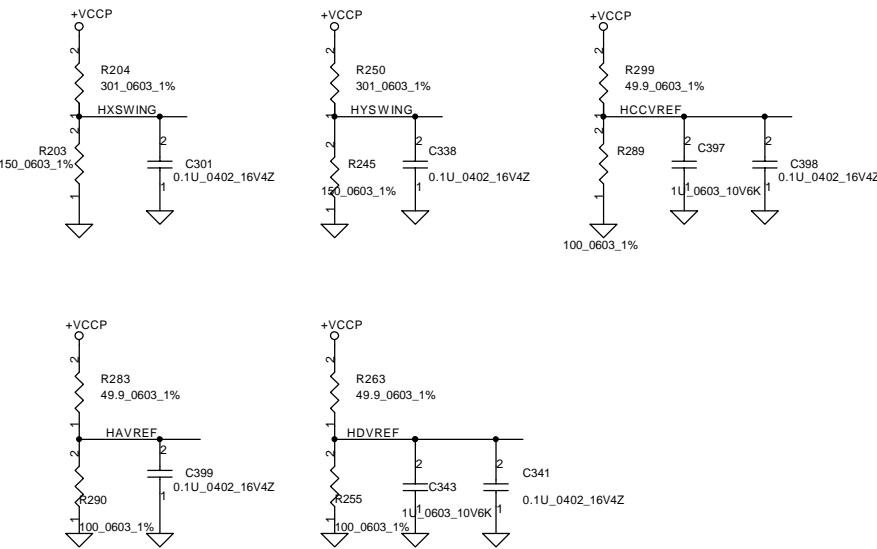
HOST

HUB I/F

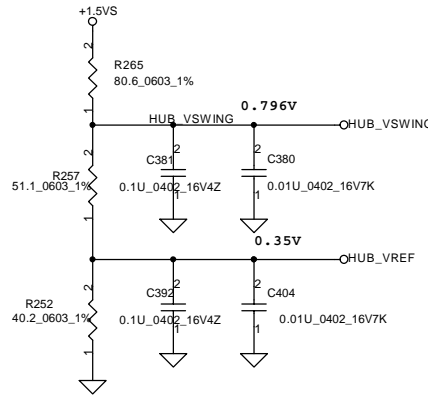
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HOST REF VOLTAGE



HUB I/F REF VOLTAGE



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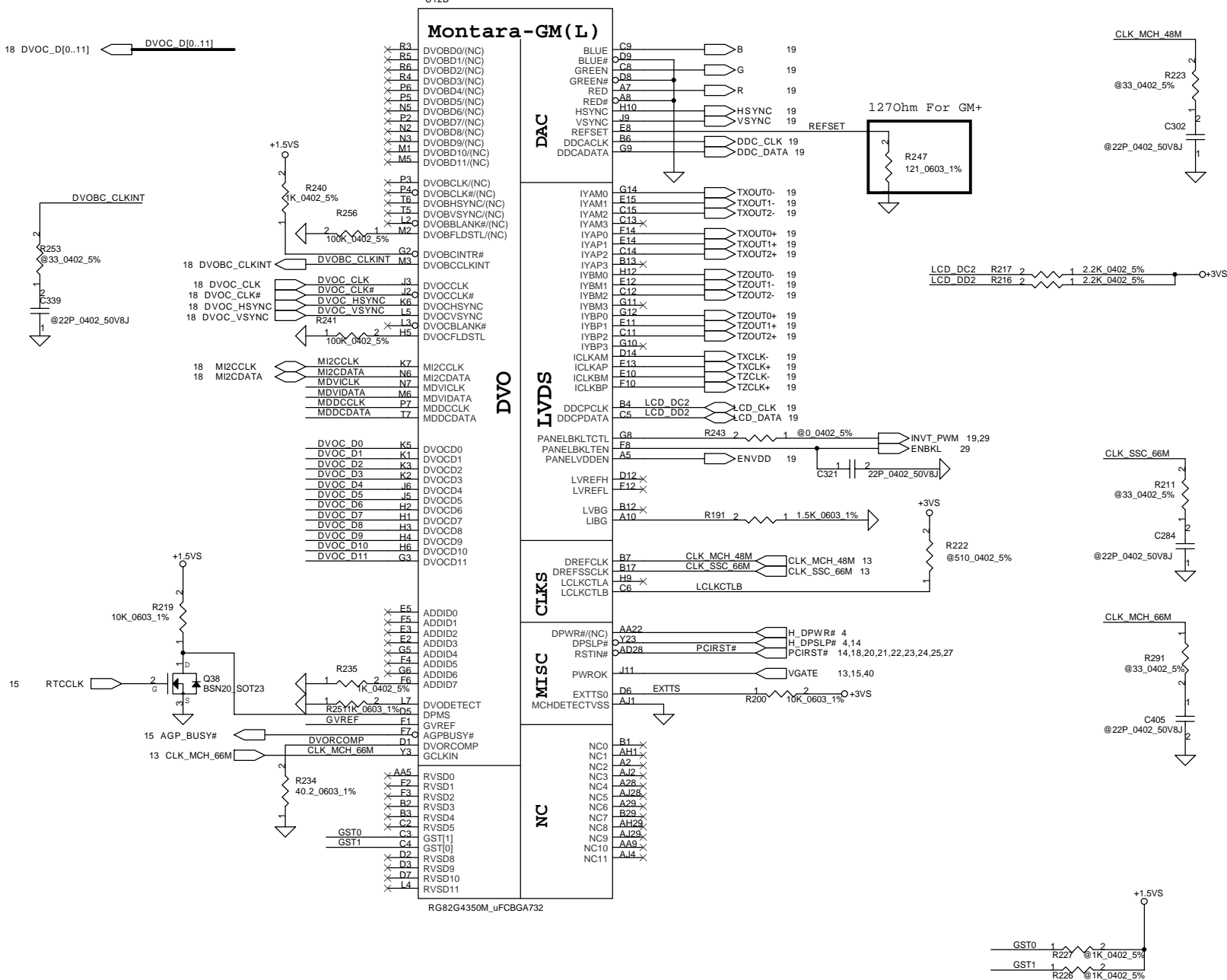
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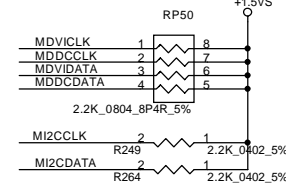
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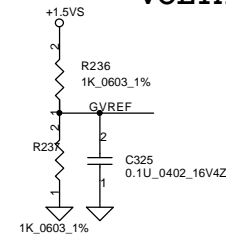
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I2C BUS PULL UP



DVO REF VOLTAGE



Starp pin list

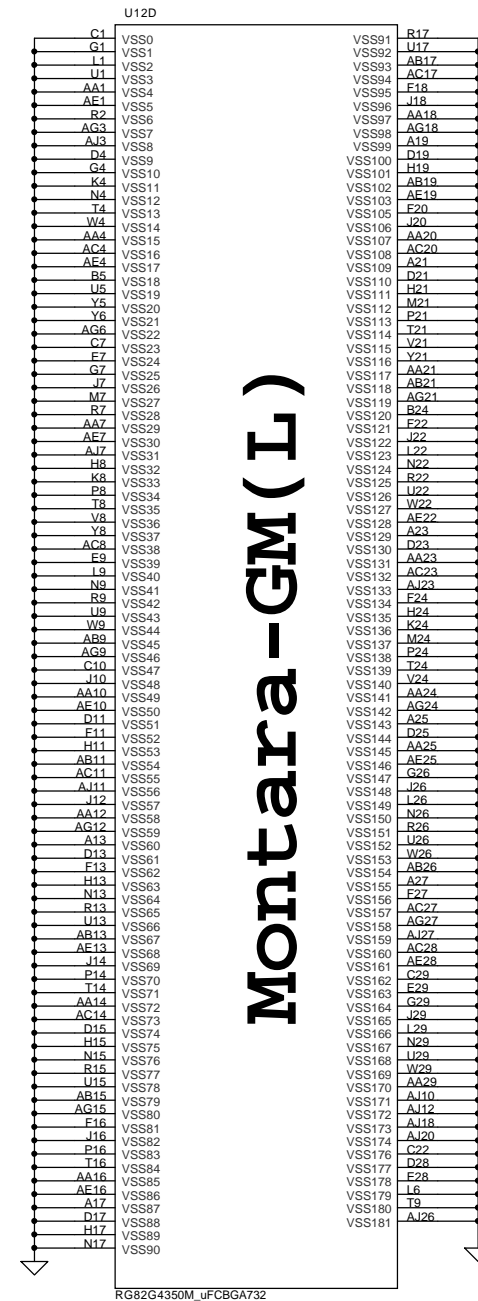
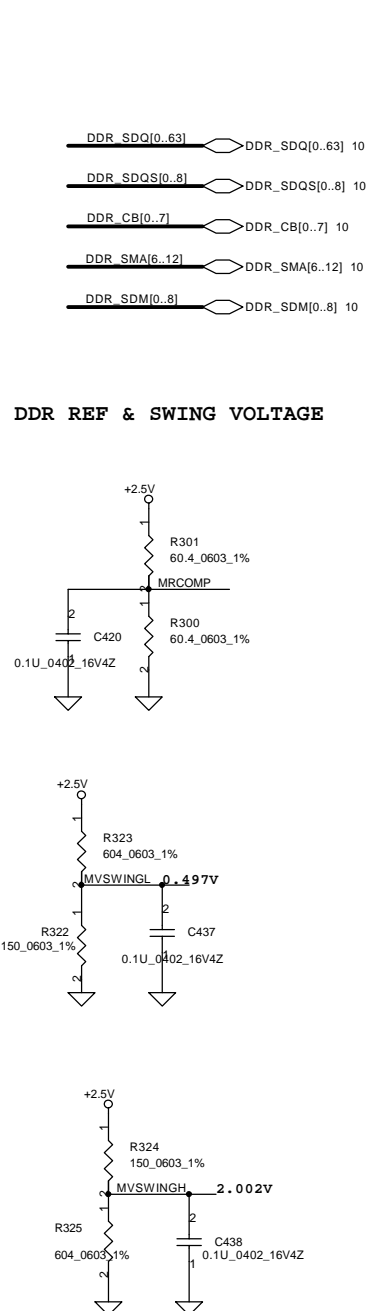
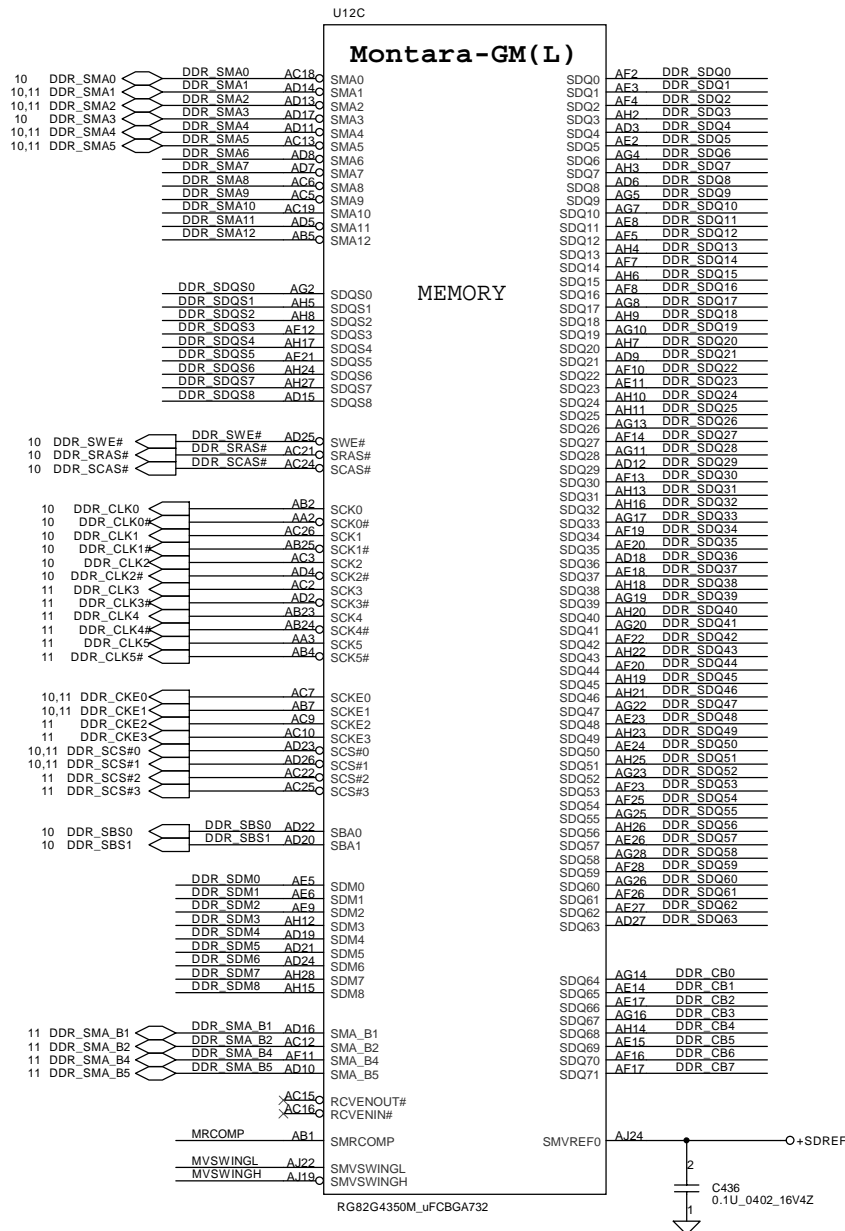
LCLKCTLB: High for P4
N.C. for Banias(default low)
DVO DETECT: Low to enable DVO
High to disable DVO

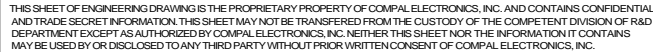
GST0	GST1	PSB/Sys Mem/ GFX Core
0	0	400/266/200 (default)
0	1	400/200/200
1	0	400/200/133

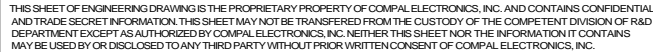
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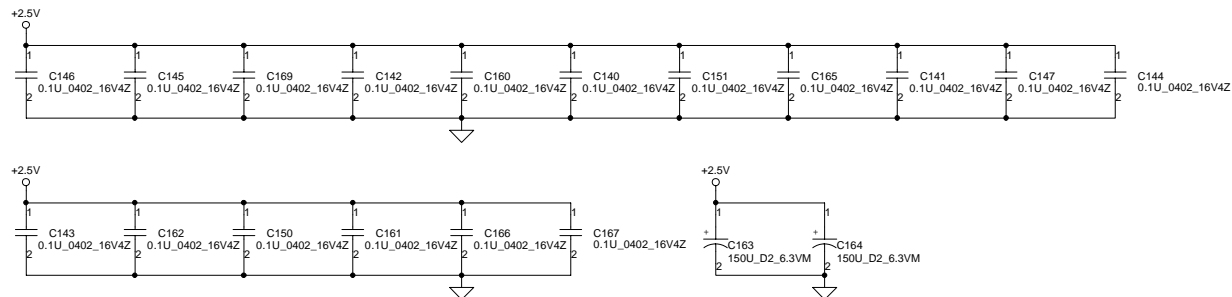
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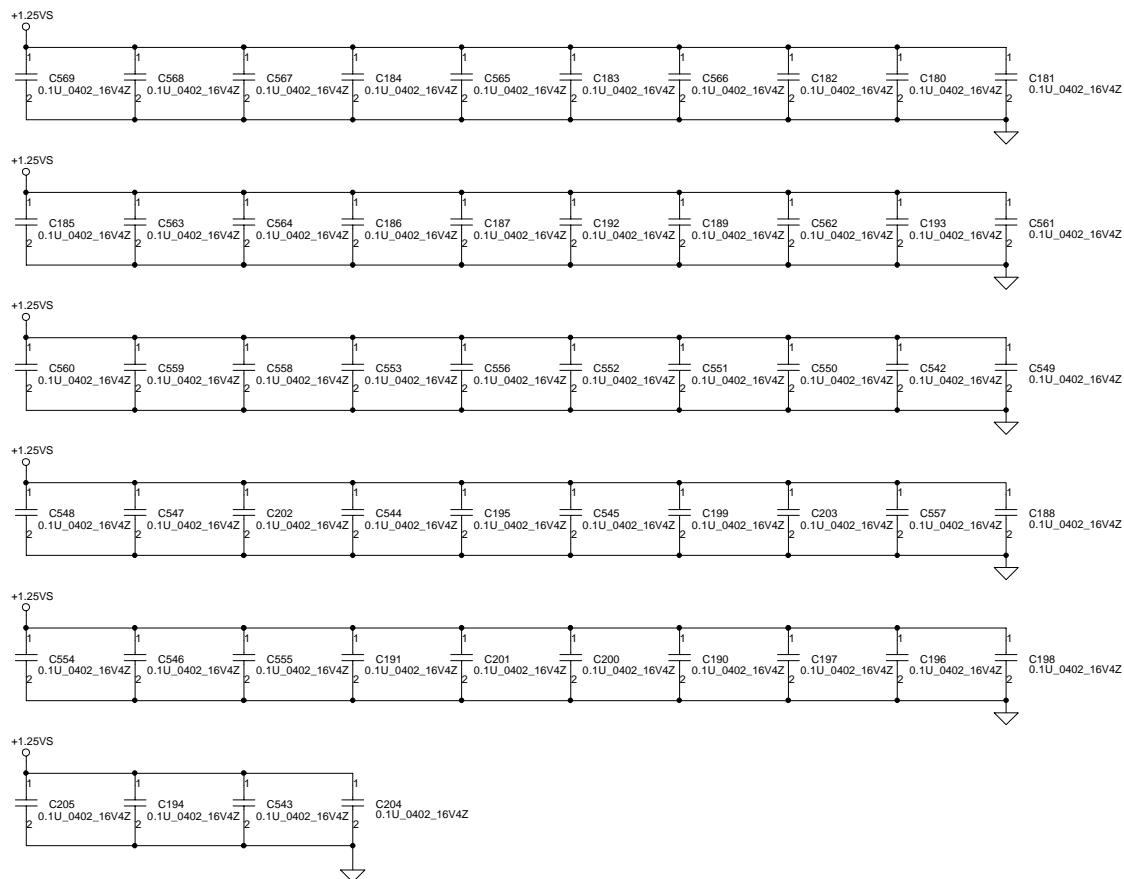




Layout note :
Distribute as close as possible
to DDR-SODIMM.



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



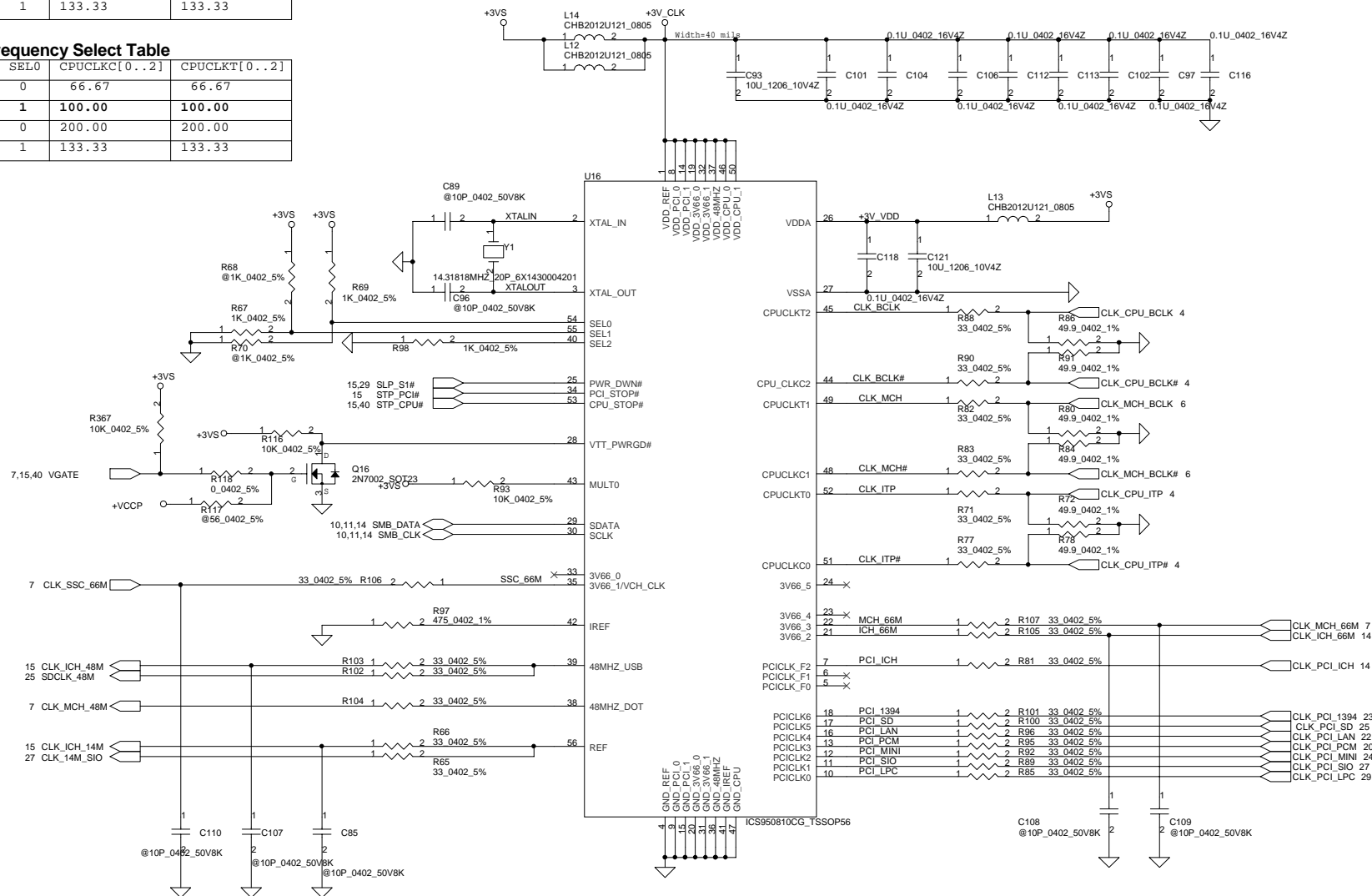
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Clock Generator

SEL2	SEL1	SEL0	CPUCLKC[0..2]	CPUCLKT[0..2]
0	0	0	166.67	166.67
0	0	1	100.00	100.00
0	1	0	200.00	200.00
0	1	1	133.33	133.33

SEL2	SEL1	SEL0	CPUCLKC[0..2]	CPUCLKT[0..2]
0	0	0	66.67	66.67
0	0	1	100.00	100.00
0	1	0	200.00	200.00
0	1	1	133.33	133.33

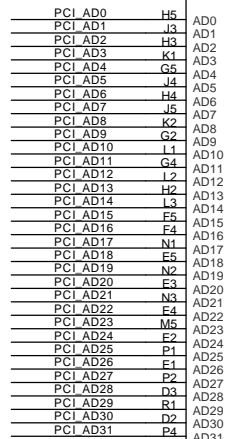
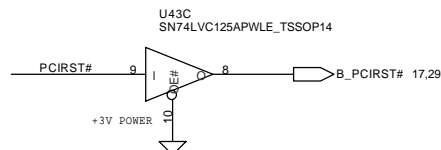
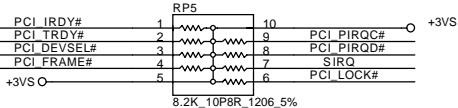
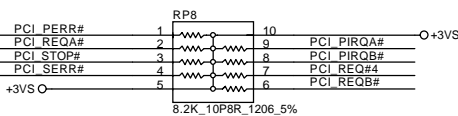
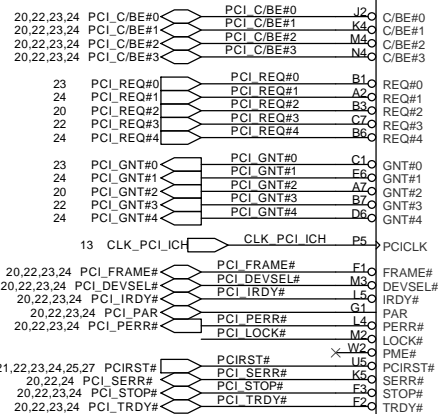
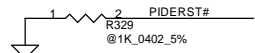
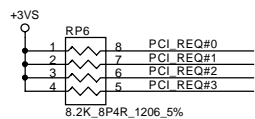
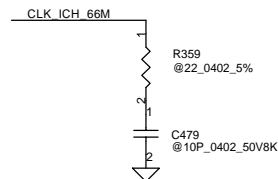
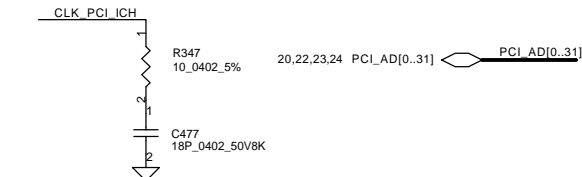


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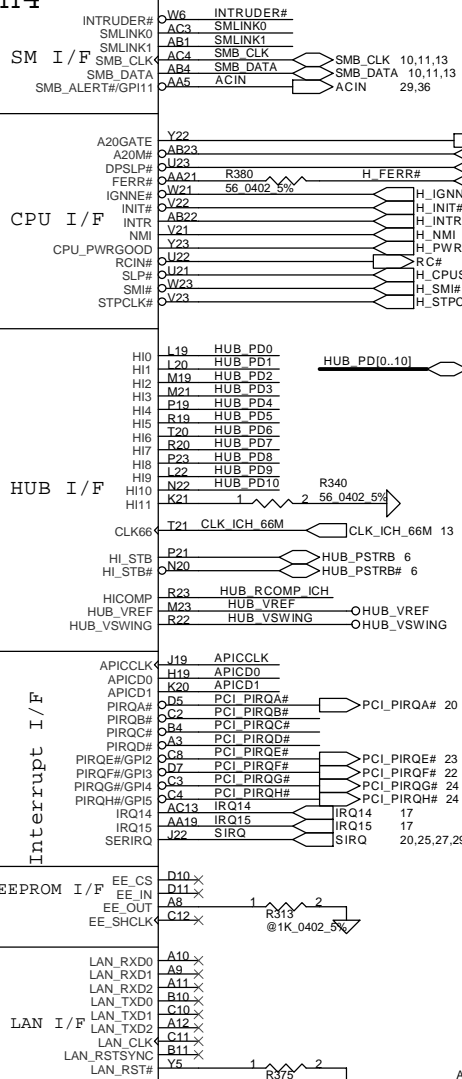
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PCI I/F

ICH4

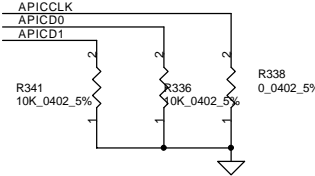
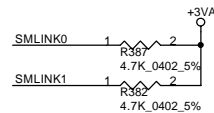
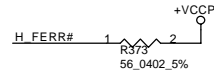
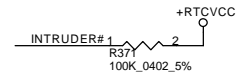
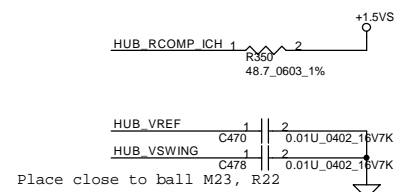
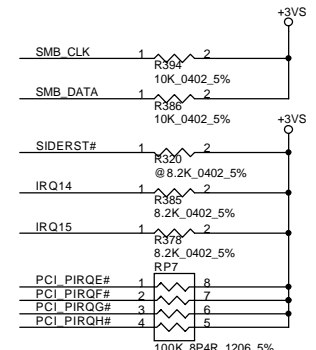


HUB I/F

Interrupt I/F

EEPROM I/F

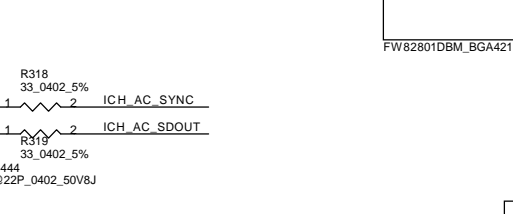
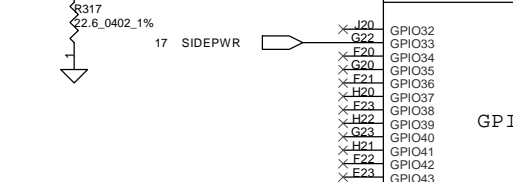
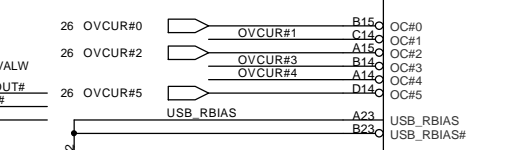
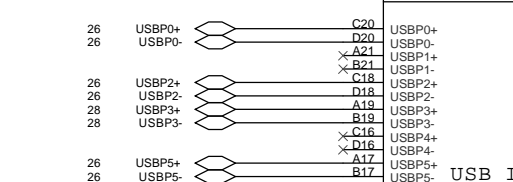
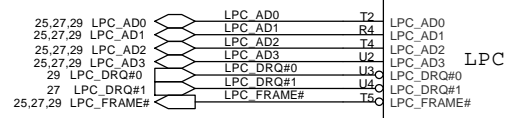
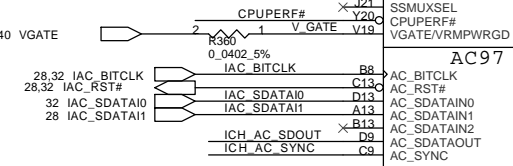
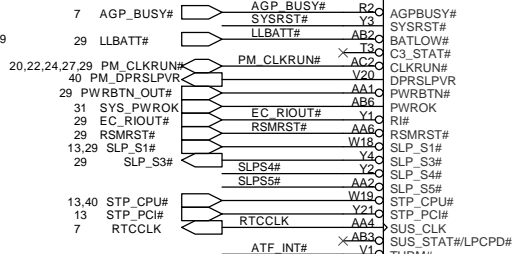
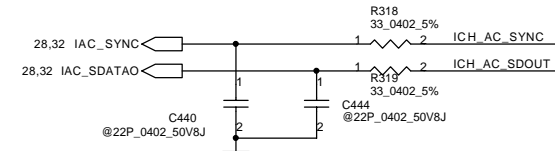
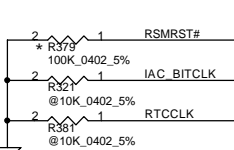
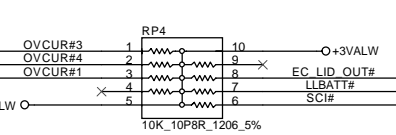
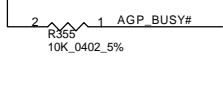
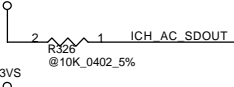
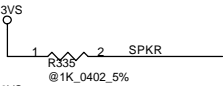
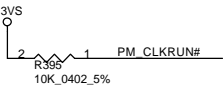
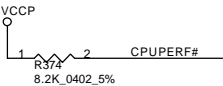
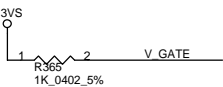
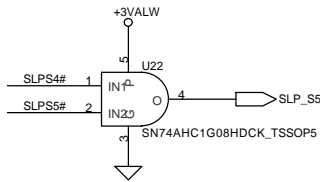
LAN I/F



PCI Pullups

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ICH4

GPIO

PM

IST

AC97 I/F

IDE I/F

LPC I/F

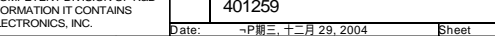
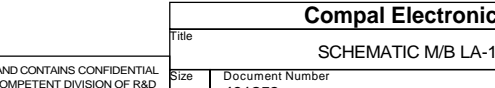
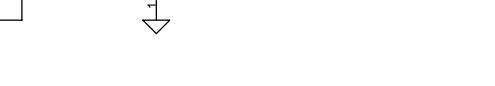
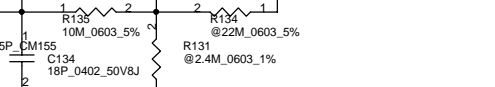
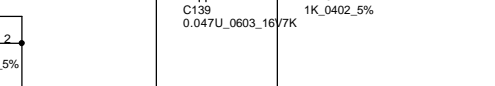
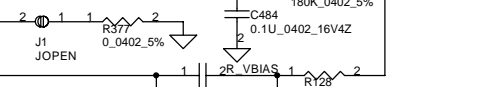
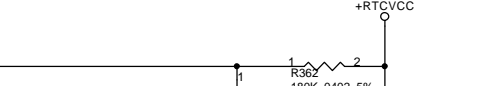
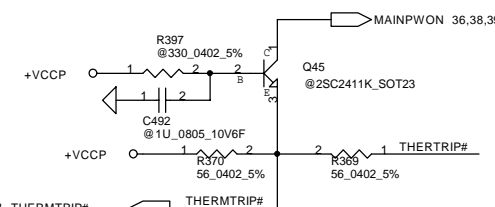
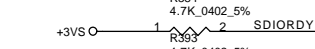
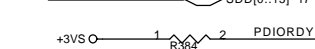
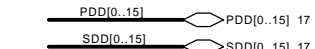
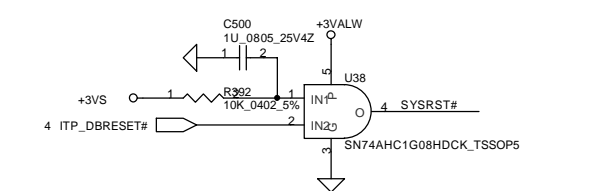
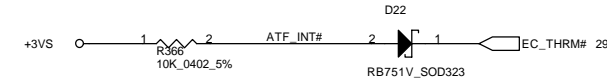
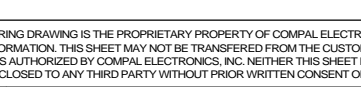
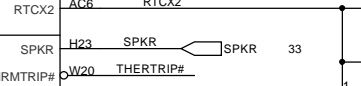
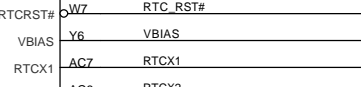
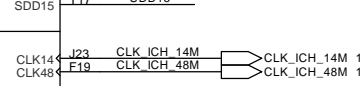
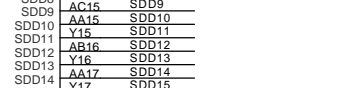
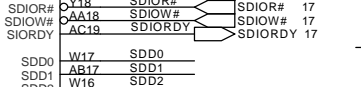
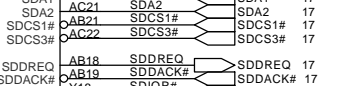
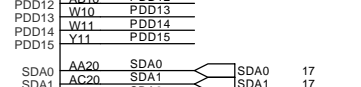
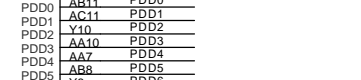
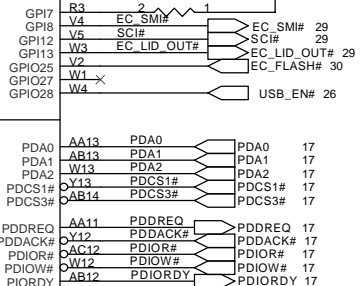
USB I/F

CLOCK

GPIO

MISC

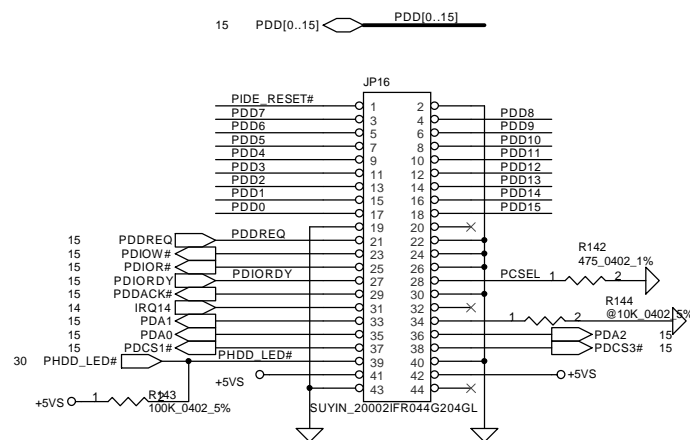
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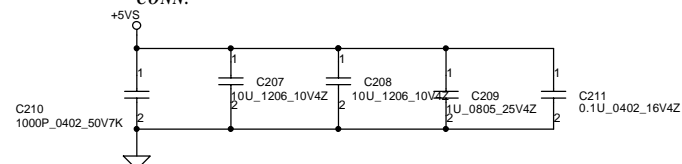
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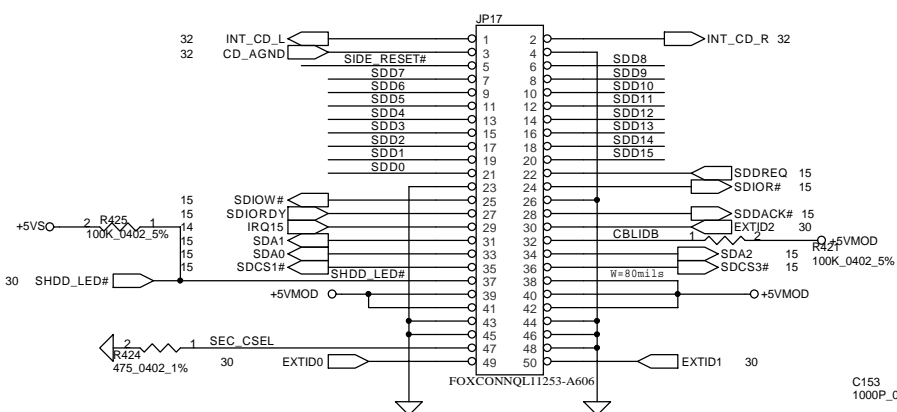
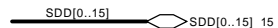
HDD Connector



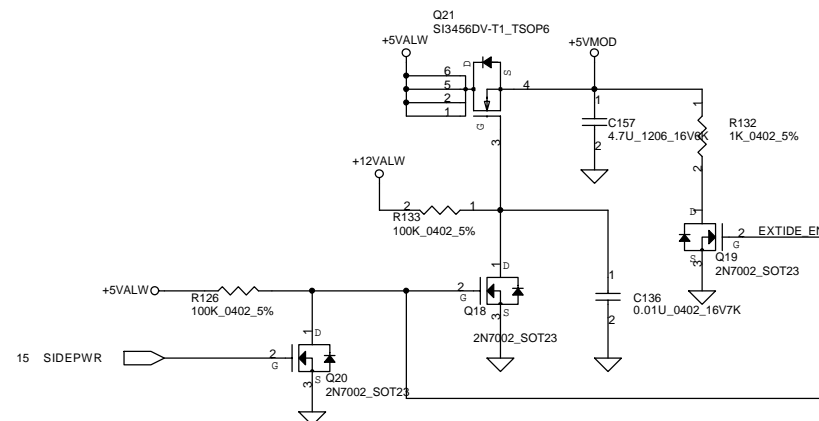
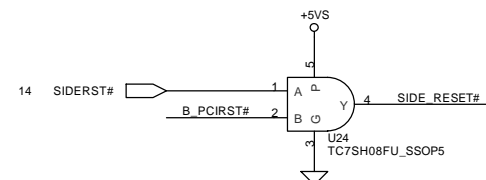
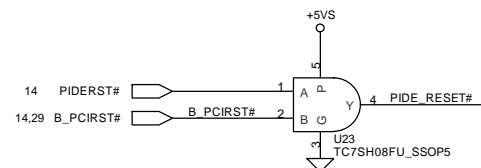
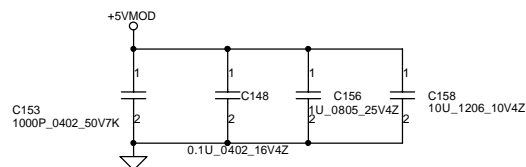
Placea caps. near HDD
CONN.



CD-ROM Connector

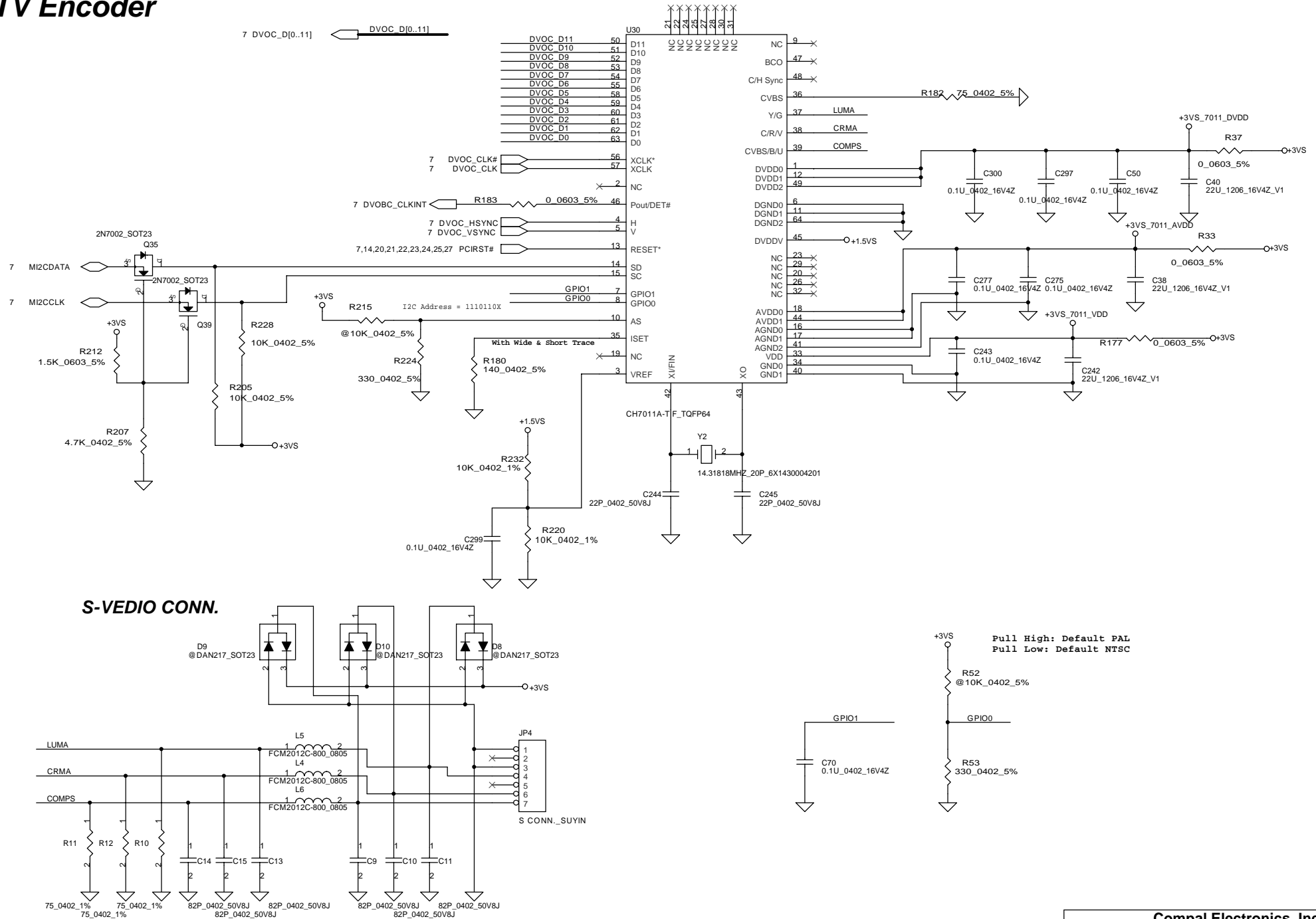


*Placea caps. near CDROM
CONN.*



SI3456DV: N CHANNEL
VGS: 4.5V, RDS: 65 mOHM
Id(MAX): 5.1A
VGS,+20V

TV Encoder



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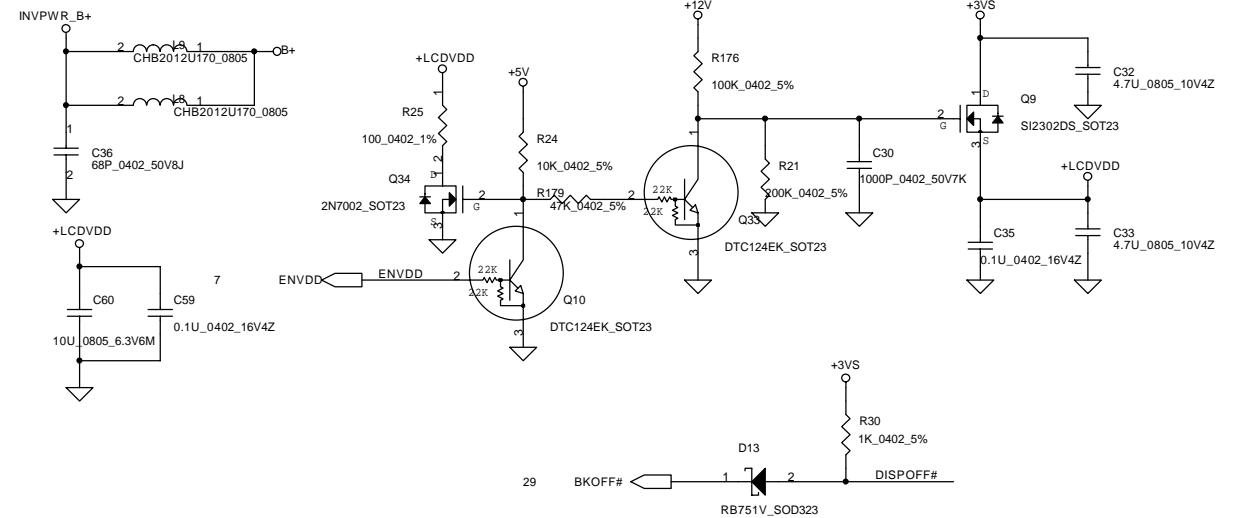
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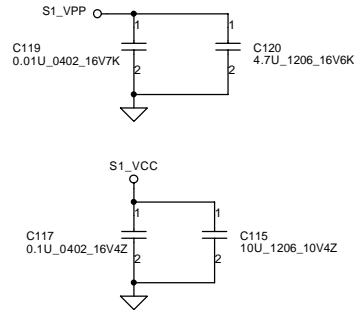
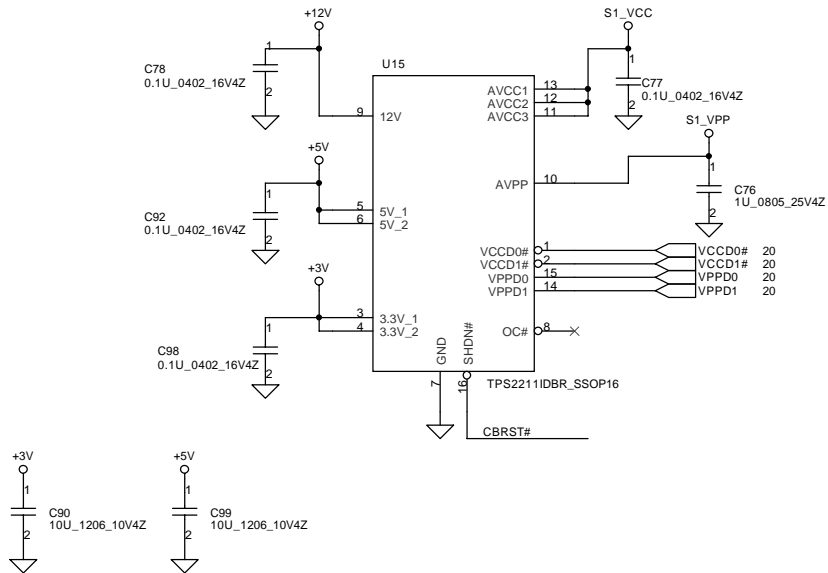
Date:	~P期三, 十二月 29, 2004	Sheet	18	of	45
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Pin	Signal	Direction
1	INV_PWR_B+	Input
2	DAC_BRIG	Input
3	INVT_PWM	Input
4	DISPOFF#	Input
5	TZOUT2+	Output
6	TZOUT2-	Output
7	TXOUT2+	Output
8	TXOUT2-	Output
9	TXCLK+	Output
10	TXCLK-	Output
11	TZOUT1+	Output
12	TZOUT1-	Output
13	ACES_88022-4000	Output
14	ACES_88022-4000	Output
15	ACES_88022-4000	Output
16	ACES_88022-4000	Output
17	ACES_88022-4000	Output
18	ACES_88022-4000	Output
19	ACES_88022-4000	Output
20	ACES_88022-4000	Output
21	ACES_88022-4000	Output
22	ACES_88022-4000	Output
23	ACES_88022-4000	Output
24	ACES_88022-4000	Output
25	ACES_88022-4000	Output
26	ACES_88022-4000	Output
27	ACES_88022-4000	Output
28	ACES_88022-4000	Output
29	ACES_88022-4000	Output
30	ACES_88022-4000	Output
31	ACES_88022-4000	Output
32	ACES_88022-4000	Output
33	ACES_88022-4000	Output
34	ACES_88022-4000	Output
35	ACES_88022-4000	Output
36	ACES_88022-4000	Output
37	ACES_88022-4000	Output
38	ACES_88022-4000	Output
39	ACES_88022-4000	Output
40	ACES_88022-4000	Output

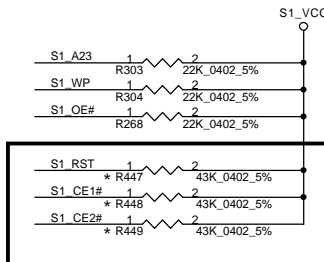
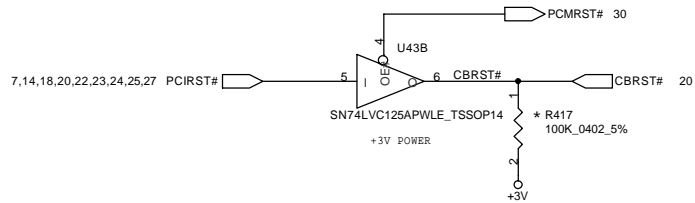
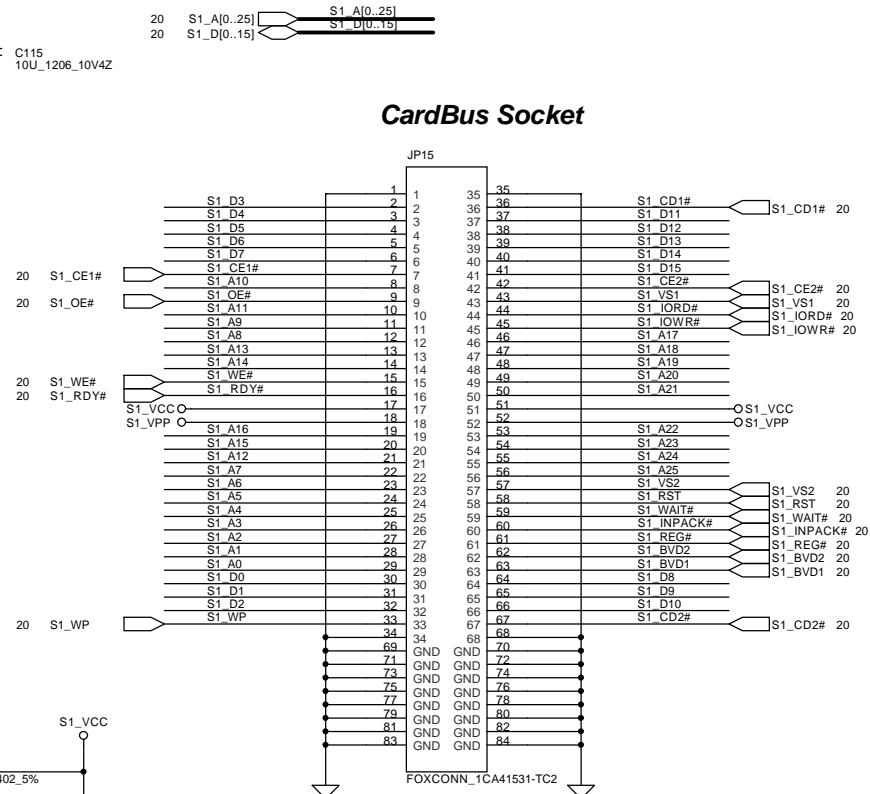


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PCMCIA Power Controller



CardBus Socket



Reserve for CB1410 B0 Version

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14,20,23,24 PCI_AD[0..31]

U6
PCI AD0 47
PCI AD1 46
PCI AD2 45
PCI AD3 43
PCI AD4 42
PCI AD5 41
PCI AD6 40
PCI AD7 39
PCI AD8 36
PCI AD9 35
PCI AD10 34
PCI AD11 33
PCI AD12 32
PCI AD13 30
PCI AD14 29
PCI AD15 28
PCI AD16 15
PCI AD17 14
PCI AD18 13
PCI AD19 12
PCI AD20 11
PCI AD21 10
PCI AD22 9
PCI AD23 8
PCI AD24 96
PCI AD25 93
PCI AD26 92
PCI AD27 91
PCI AD28 89
PCI AD29 87
PCI AD30 86
PCI AD31 85

14,20,23,24 PCI_C/BE#0
14,20,23,24 PCI_C/BE#1
14,20,23,24 PCI_C/BE#2
14,20,23,24 PCI_C/BE#3

PCI AD17.1 LAN IDSEL 98

14,20,23,24 PCI_PAR 100 0402 1% 24

14,20,23,24 PCI_FRAME# 18

14,20,23,24 PCI_IRDY# 19

14,20,23,24 PCI_TRDY# 20

14,20,23,24 PCI_DEVSEL# 21

14,20,23,24 PCI_STOP# 23

14,20,23,24 PCI_PERR# 25

14,20,23,24 PCI_SERR# 26

14 PCI_REQ#3 83

14 PCI_GNT#3 82

14 PCI_PIRQF# 1

20,23,24,29 LAN_PME# 57

7,14,18,20,21,23,24,25,27 PCIRST# 81

13 CLK_PCI_LAN 97

15,20,24,27,29 PM_CLKRUN# 50

3V O 6

22 VDD 31

37 VDD 44

49 VDD 88

90 VDD 62

95 VDD 66

AGND2 73

AGND3 73

RTL8101L_LQFP100

LAN X1

LAN X2

25MHZ_20P

C62 27P_0402_50V8J

C64 27P_0402_50V8J

U10

AT93C46-10SI-2.7_S08

CS VCC 8

SK NC 7

DI NC 6

DO GND 5

3V O 1

C75 0.1U_0402_16V4Z

LAN_EECS 1

LAN_EECLK 2

LAN_EEDI 3

LAN_EEDO 4

U4

NS0013_16P

RD+ RX+ 16

RD- RX- 15

CT CT 14

NC NC 13

NC NC 12

CT CT 11

TD+ TX+ 10

TD- TX- 9

RJ45 RX+ 16

RJ45 RX- 15

RJ45 TX+ 10

RJ45 TX- 9

RJ45 GND 16

RJ45 GND 15

RJ45 GND 14

RJ45 GND 13

RJ45 GND 12

RJ45 GND 11

RJ45 GND 10

RJ45 GND 9

RJ45 GND 8

RJ45 GND 7

RJ45 GND 6

RJ45 GND 5

RJ45 GND 4

RJ45 GND 3

RJ45 GND 2

RJ45 GND 1

RJ45 GND 0

RJ45 GND -1

RJ45 GND -2

RJ45 GND -3

RJ45 GND -4

RJ45 GND -5

RJ45 GND -6

RJ45 GND -7

RJ45 GND -8

RJ45 GND -9

RJ45 GND -10

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RJ45 GND -173

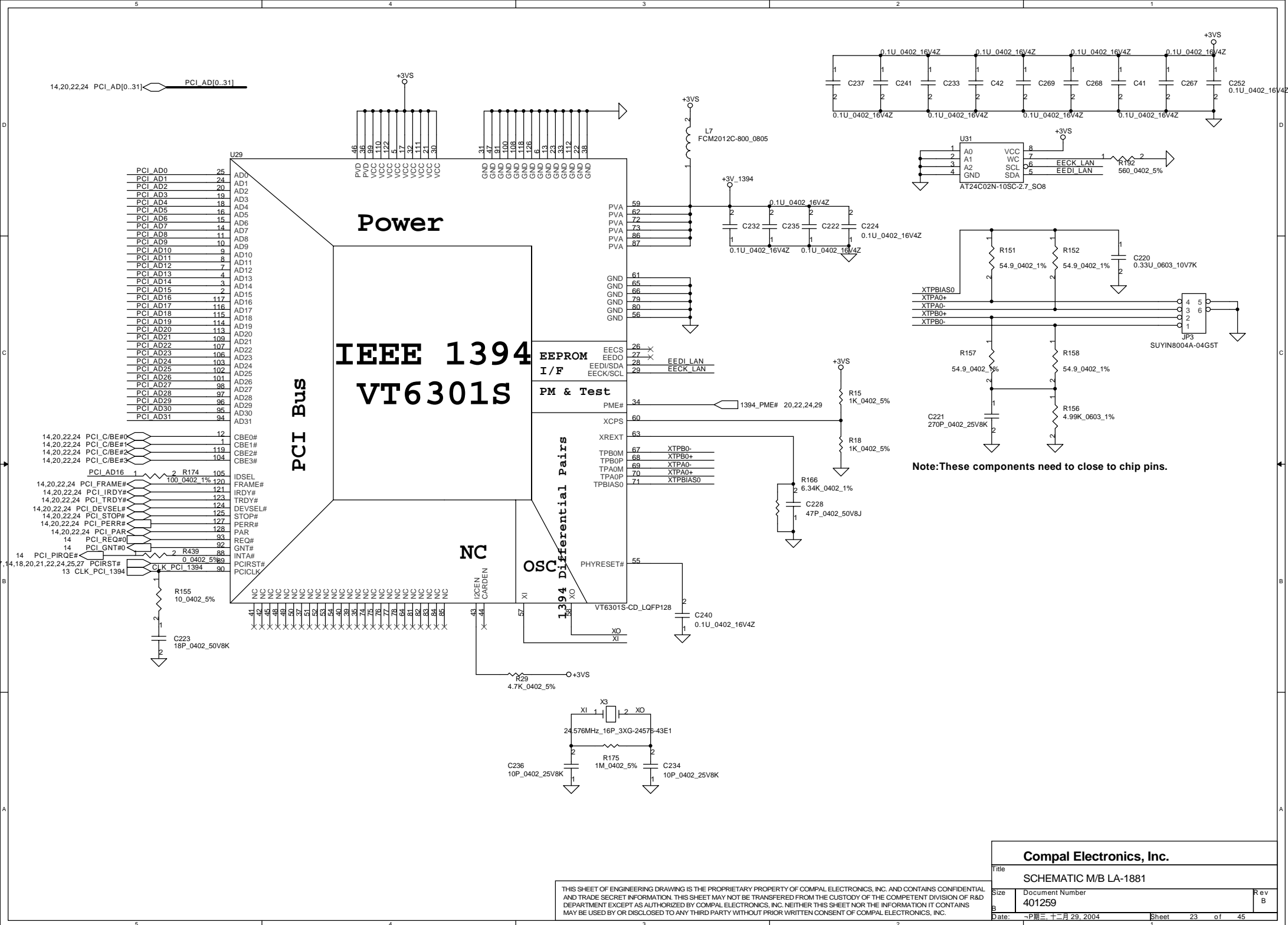
RJ45 GND -174

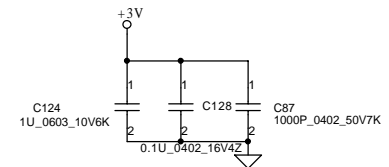
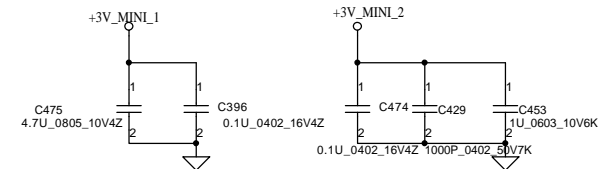
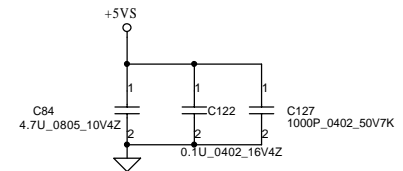
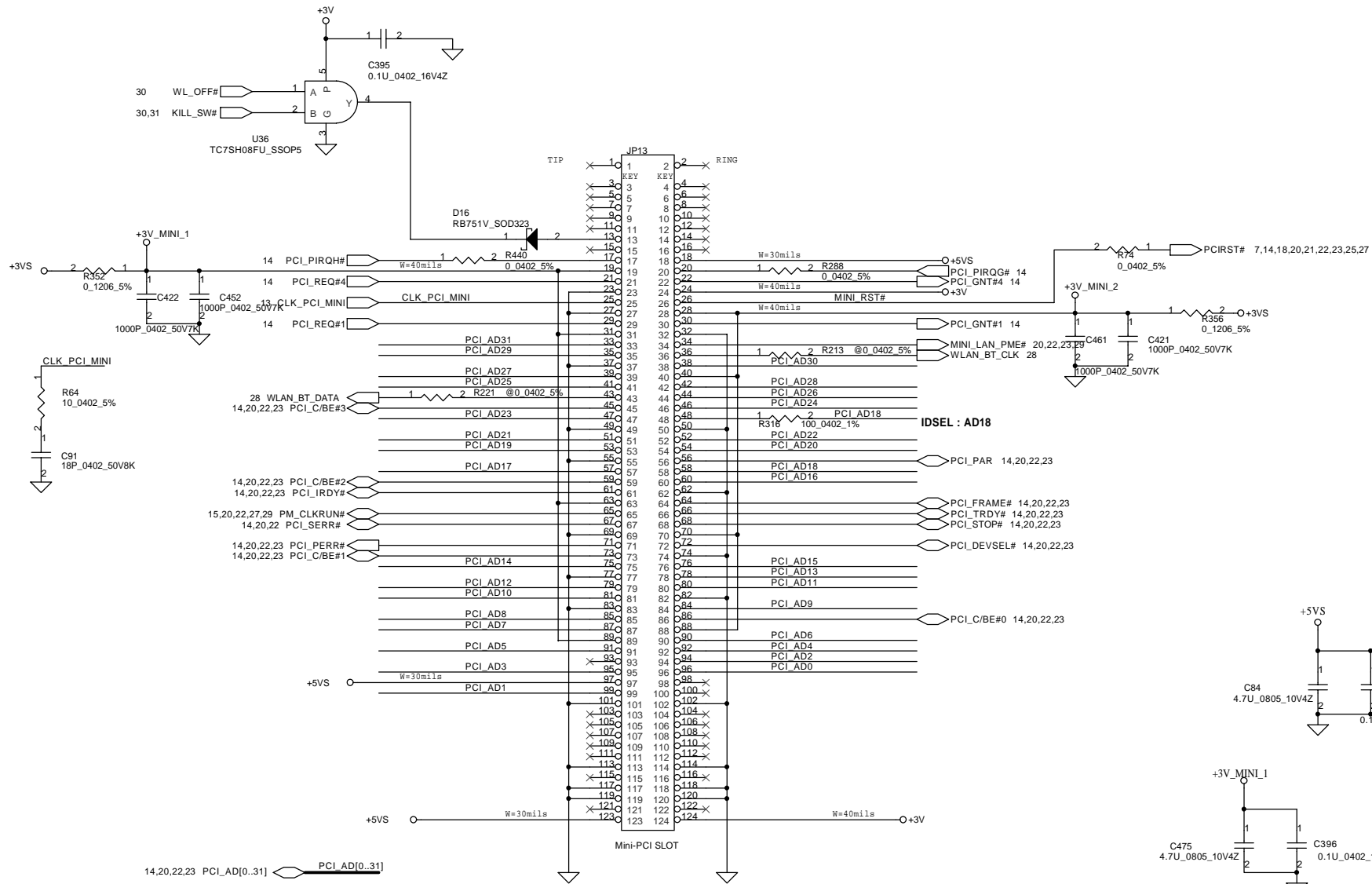
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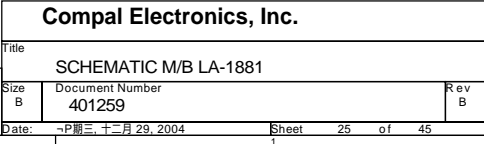




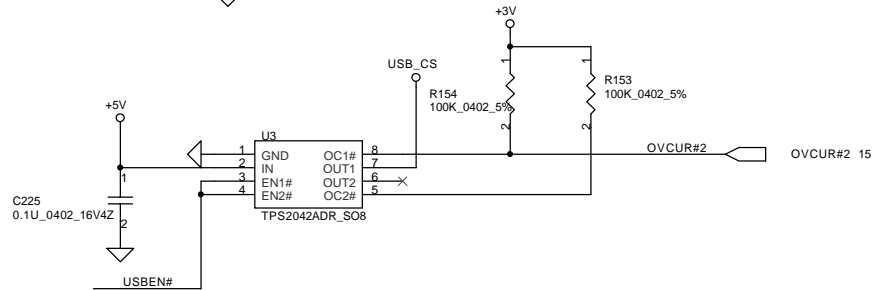
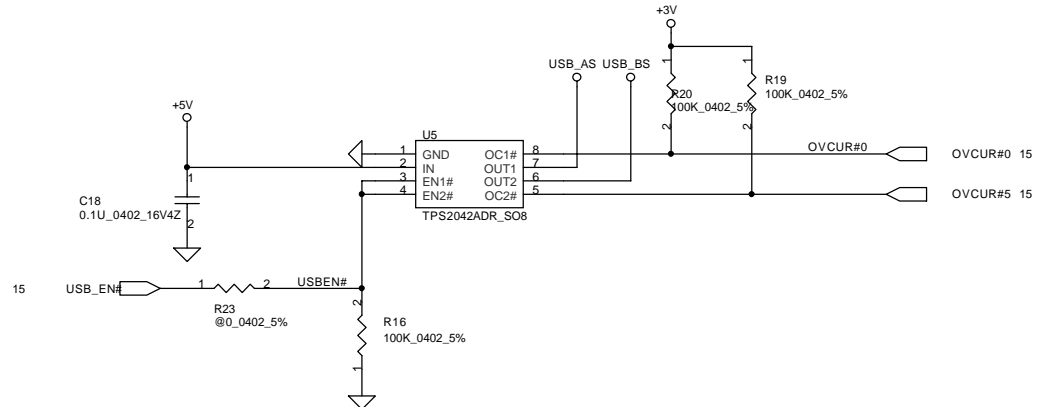
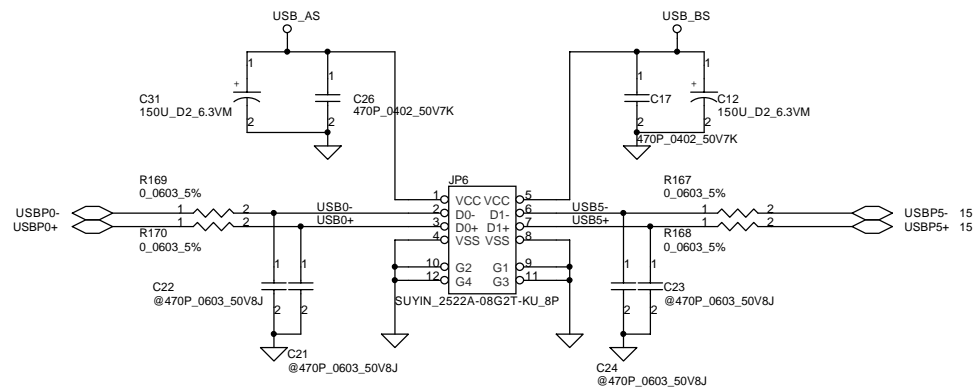
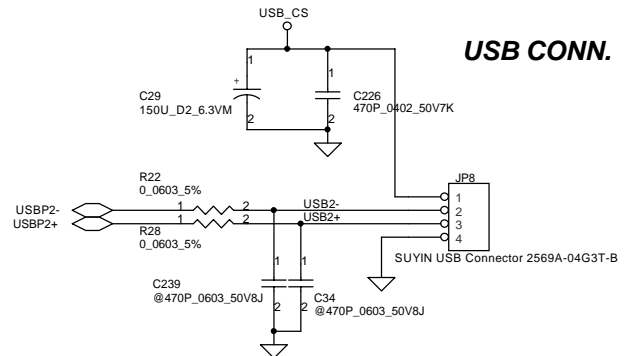
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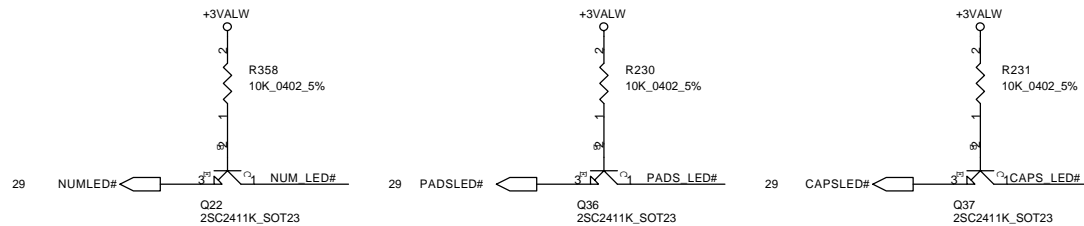
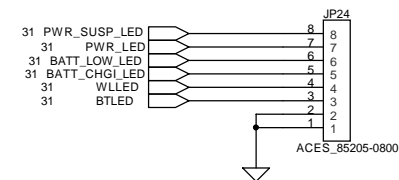
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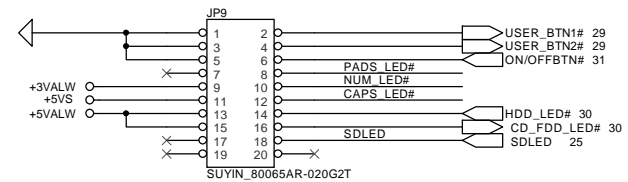
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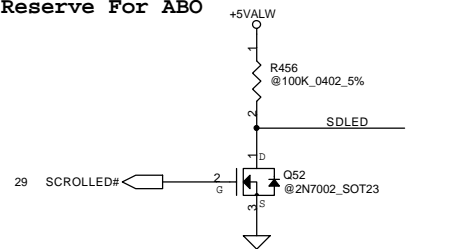
LED/B CONN.



POWER/B CONN.



Reserve For ABO

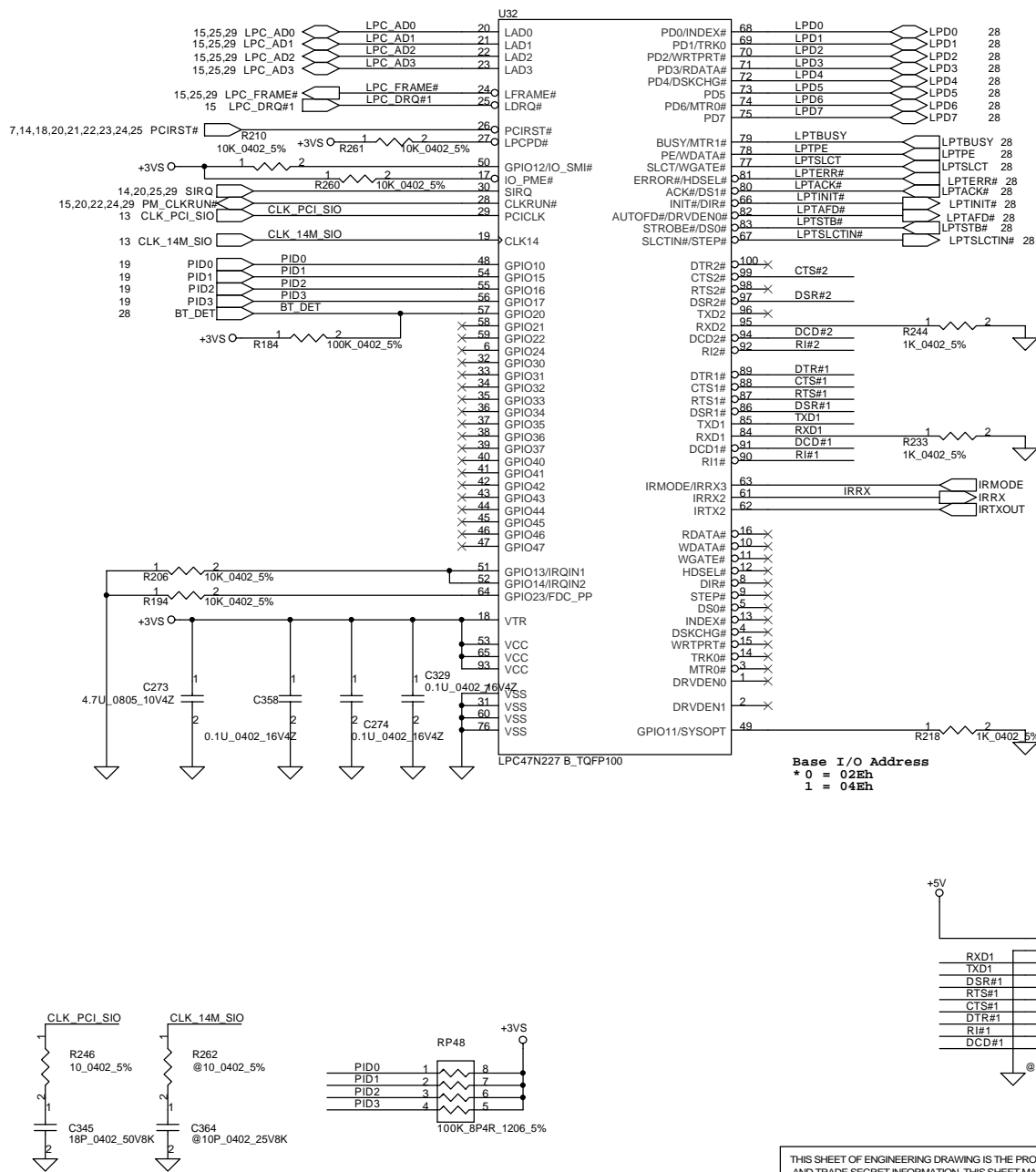


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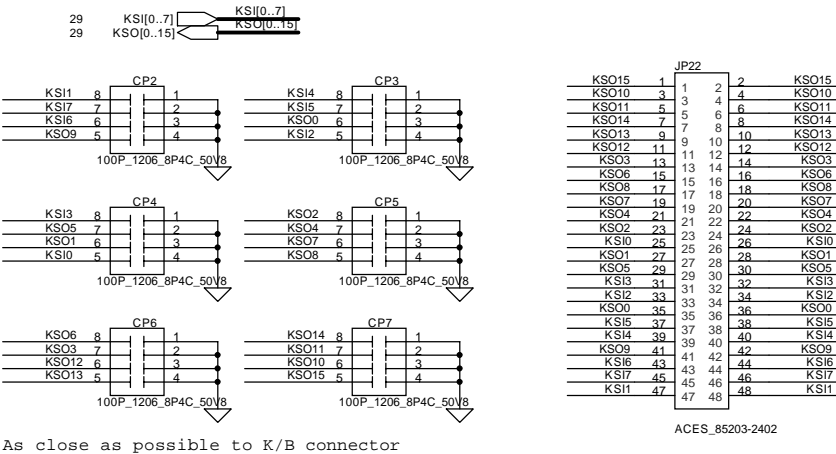
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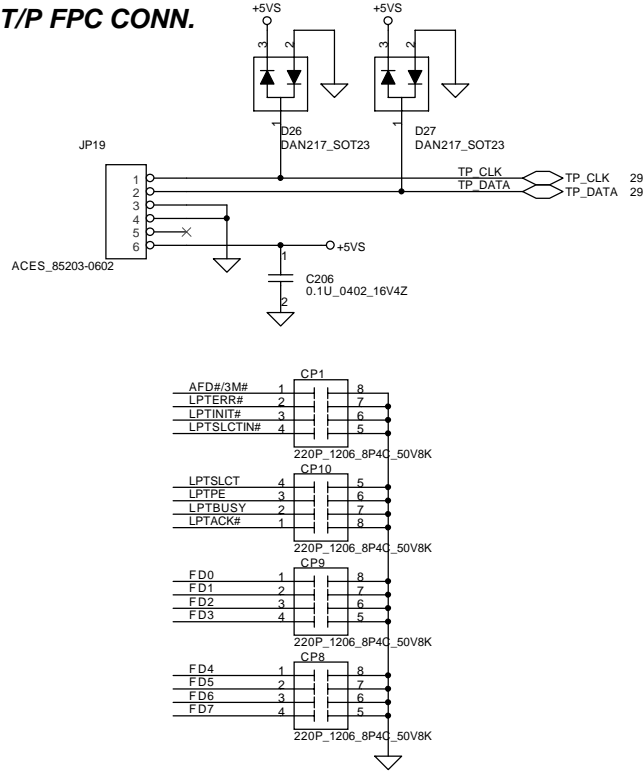
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INT_KBD CONN.

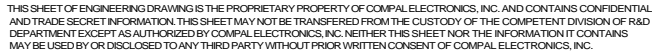


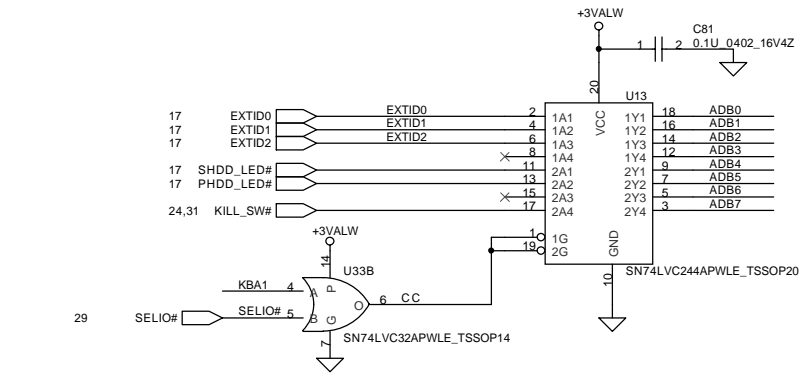
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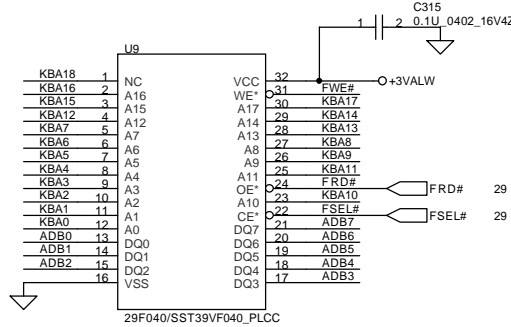
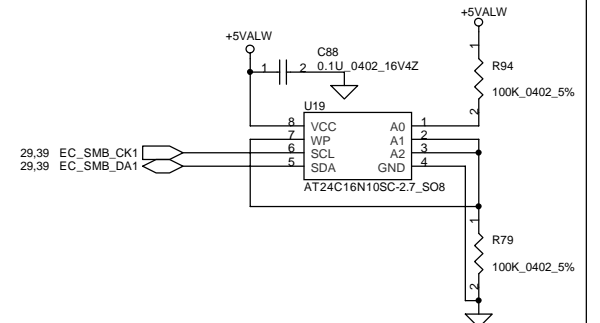
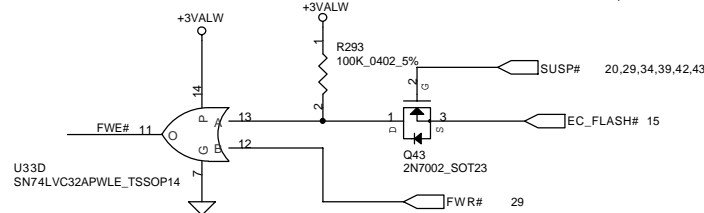
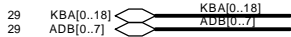
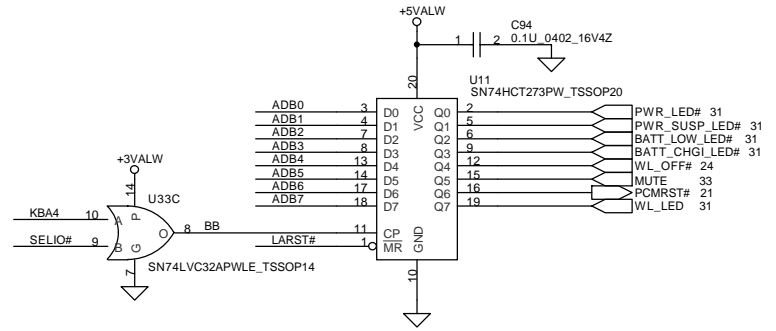
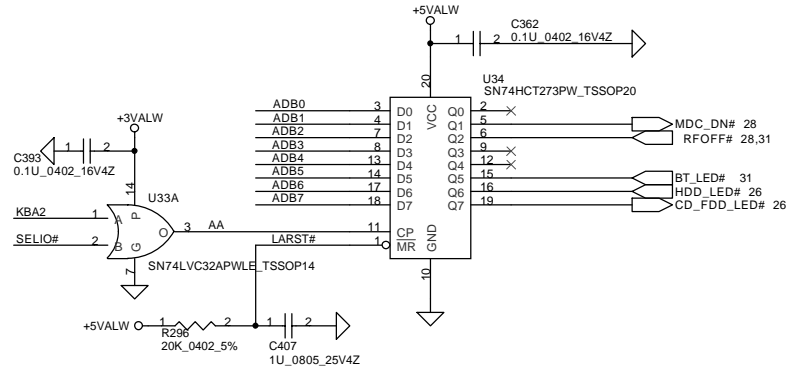
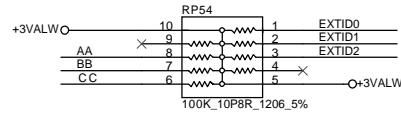
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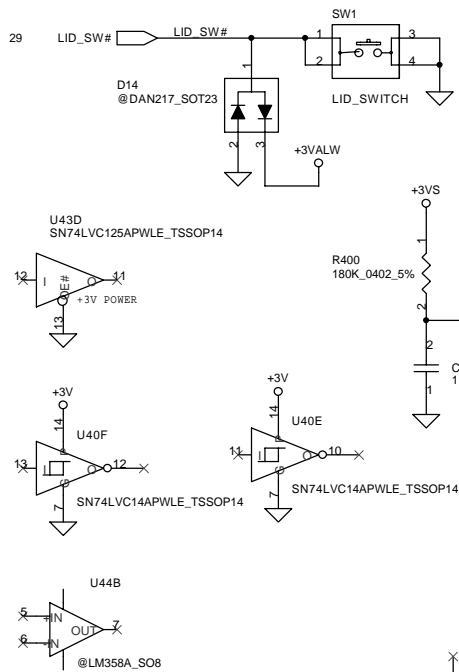


EXTID2	EXTID1	EXTID0	Module
0	0	0	FDD
0	0	1	CDROM
0	1	1	2ndHDD
1	1	1	NO Module

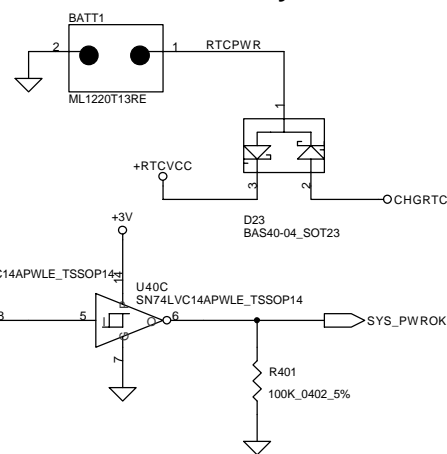


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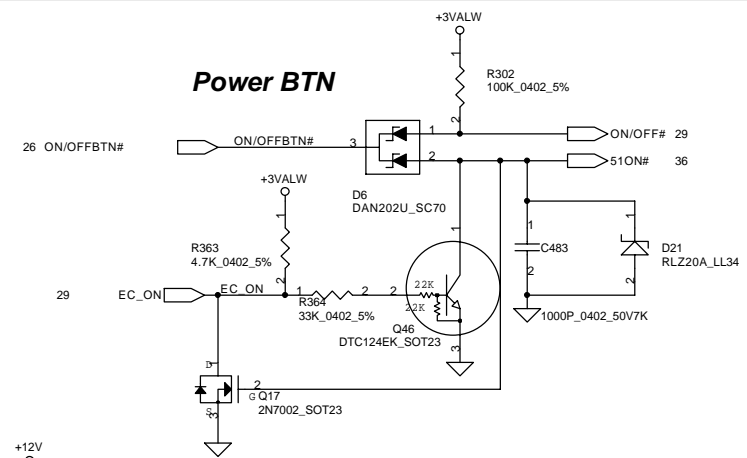
Power ON Circuit



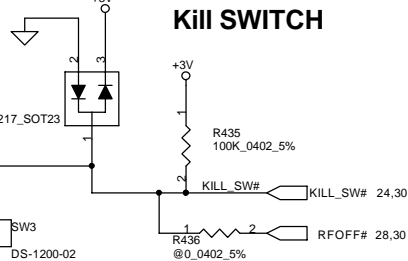
RTC Battery



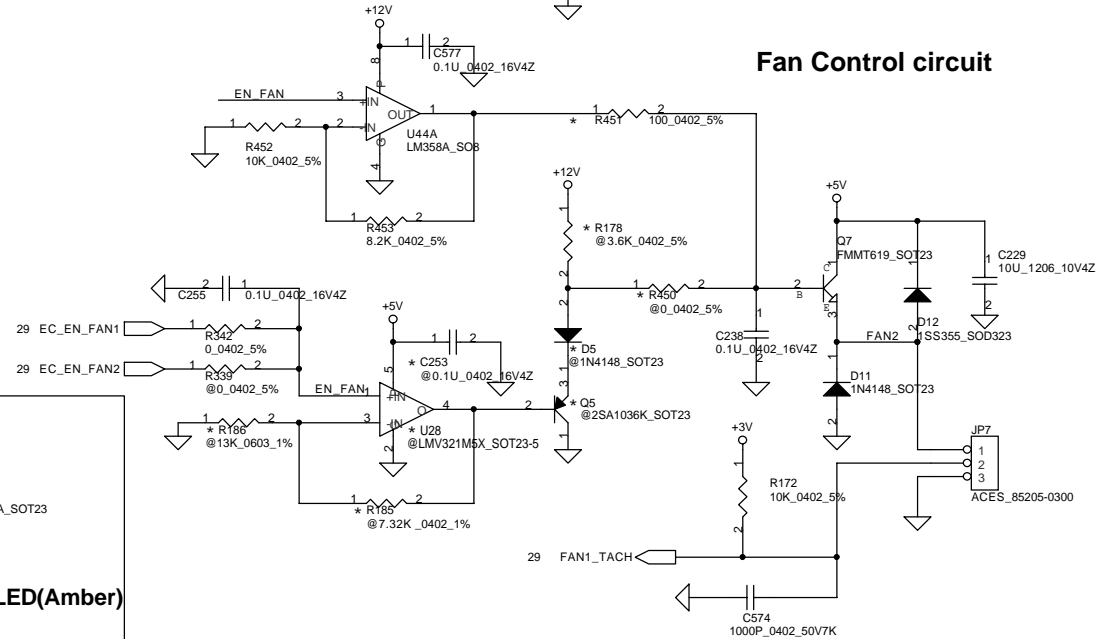
Power BTN



Kill SWITCH

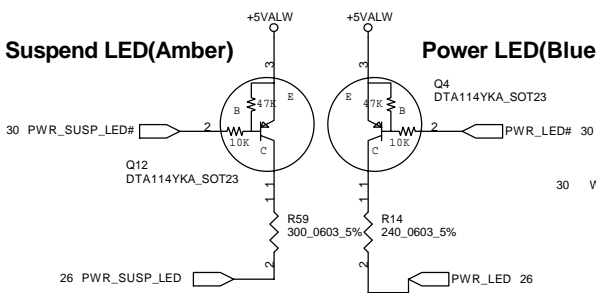


Fan Control circuit

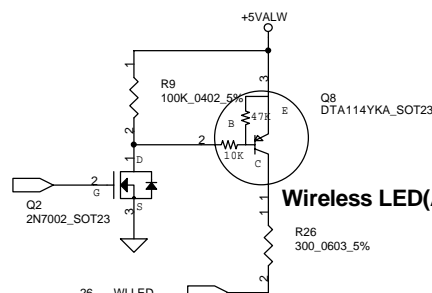


Suspend LED(Amber)

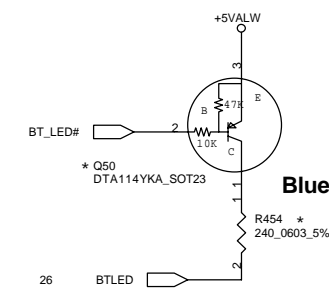
Power LED(Blue)



Wireless LED(Amber)

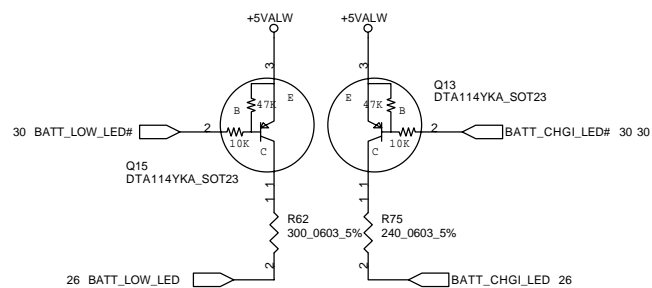


Bluetooth LED(Blue)

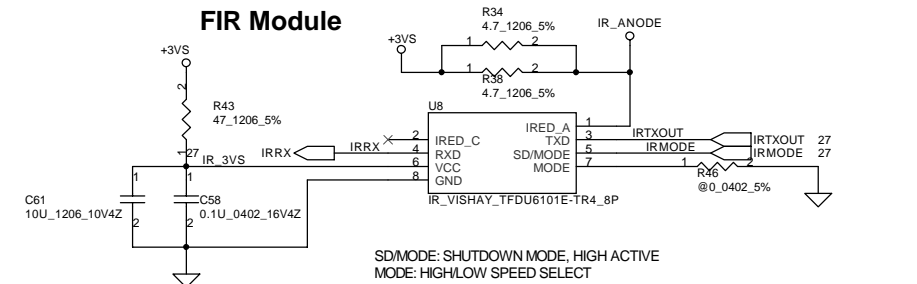


BATT Low LED(Amber)

BATT Charge LED(Blue)



FIR Module

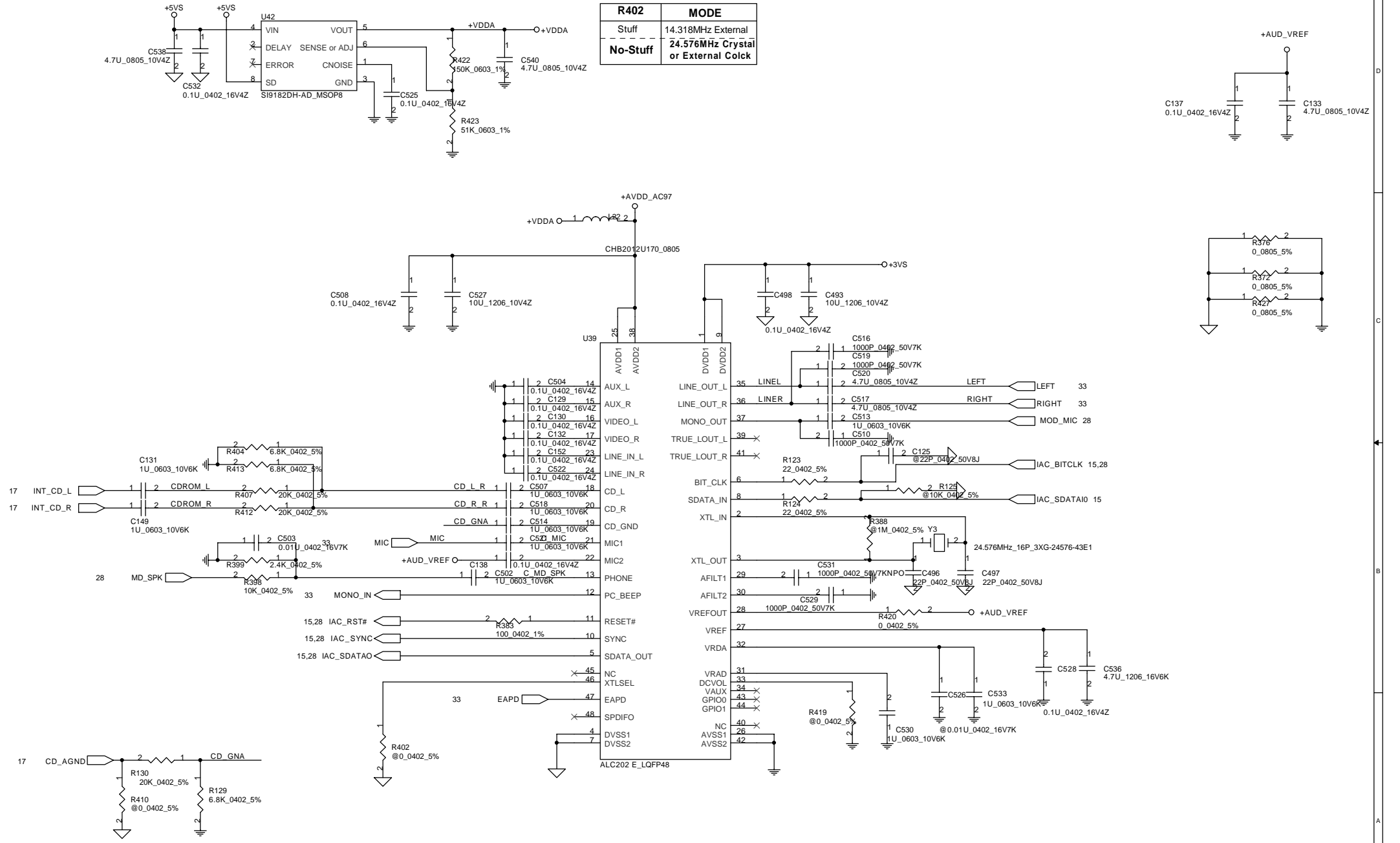


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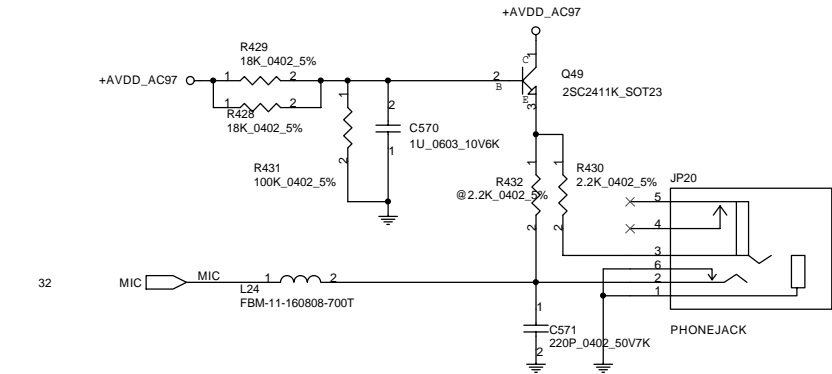
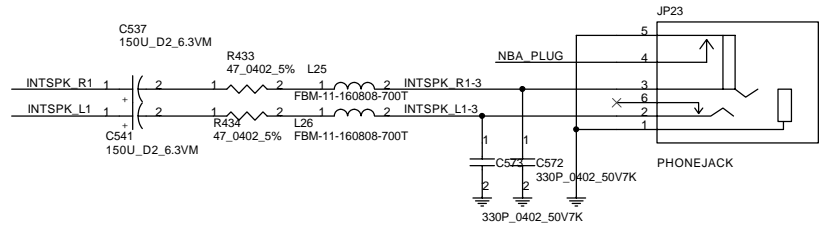
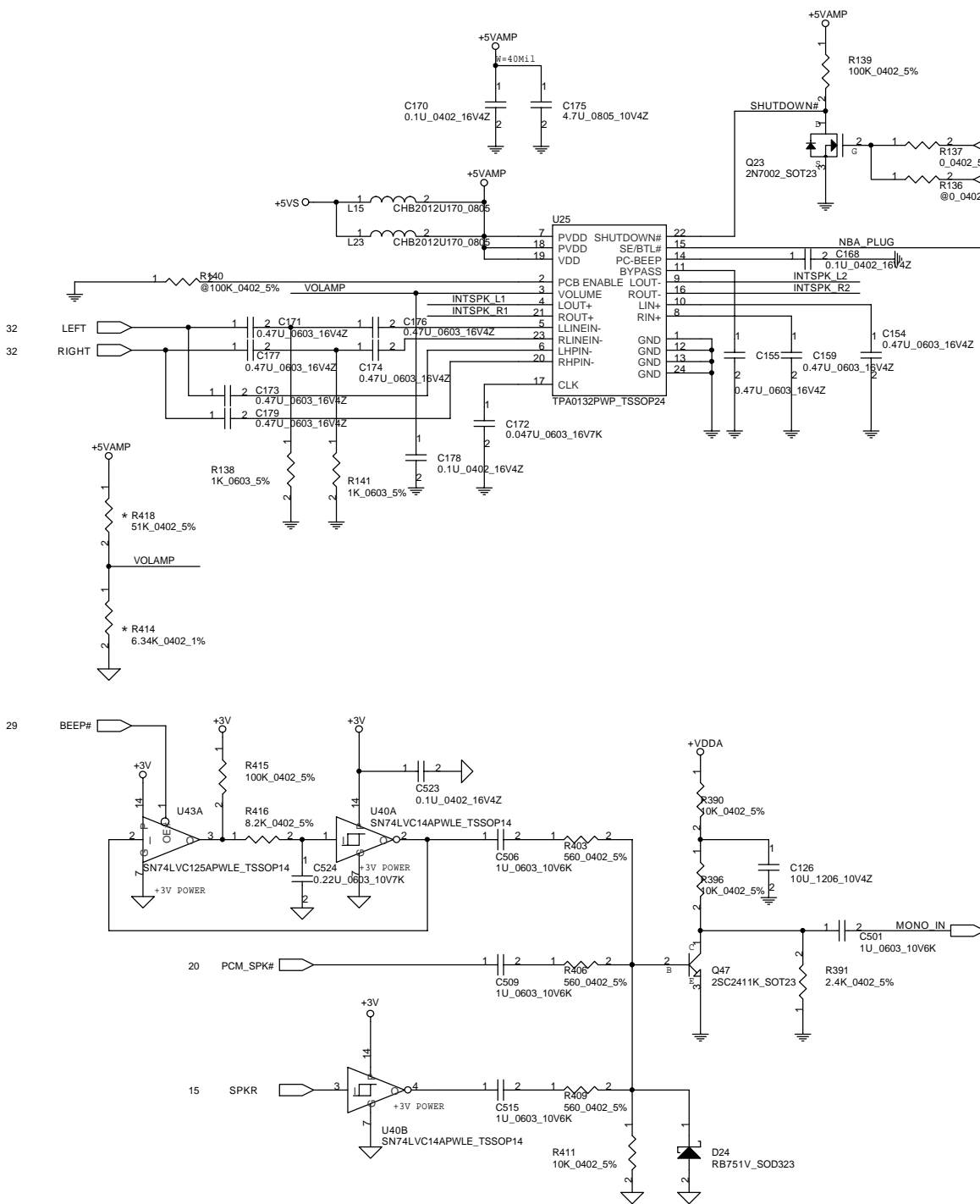
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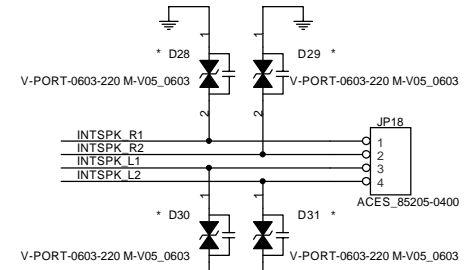
AC97 Codec



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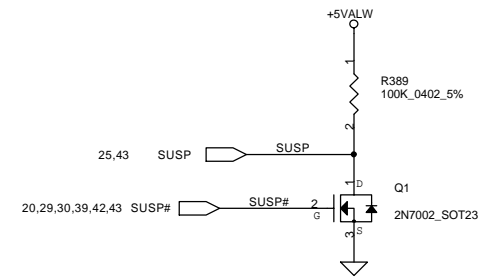
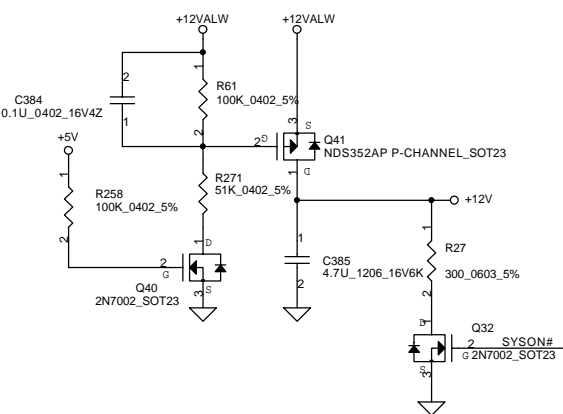
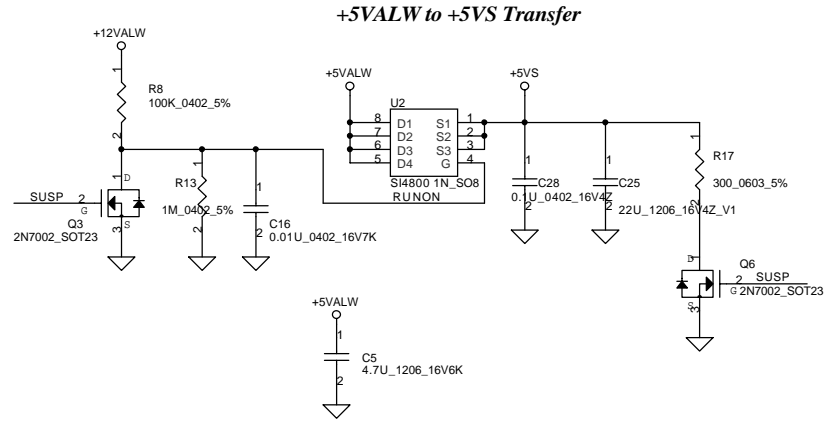
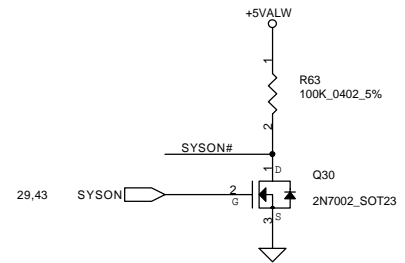
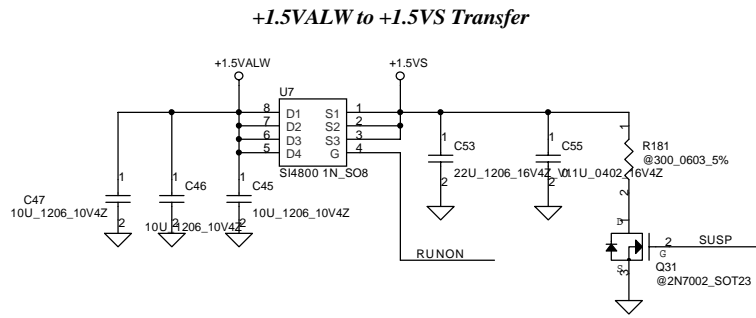
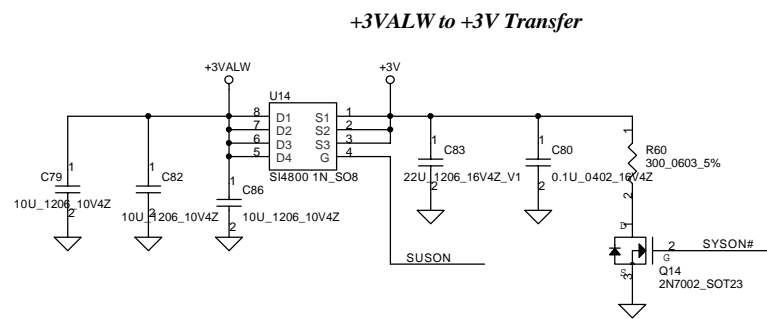
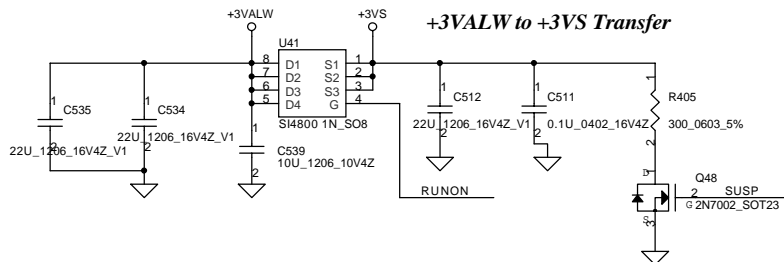
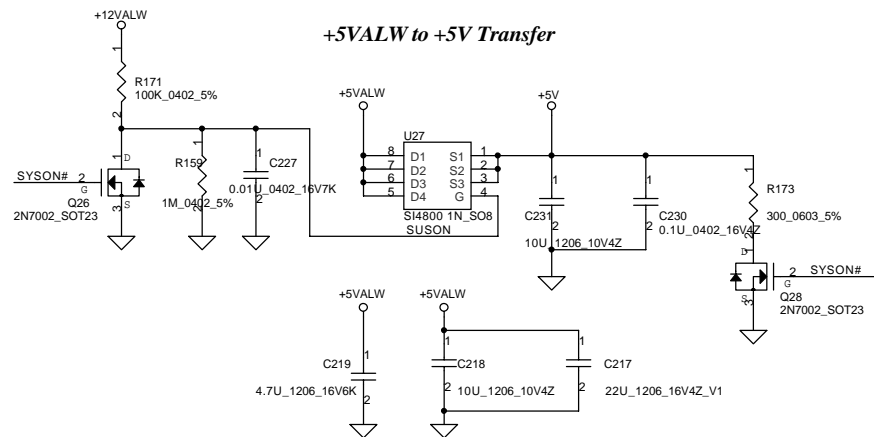


SPEAKER CONN.



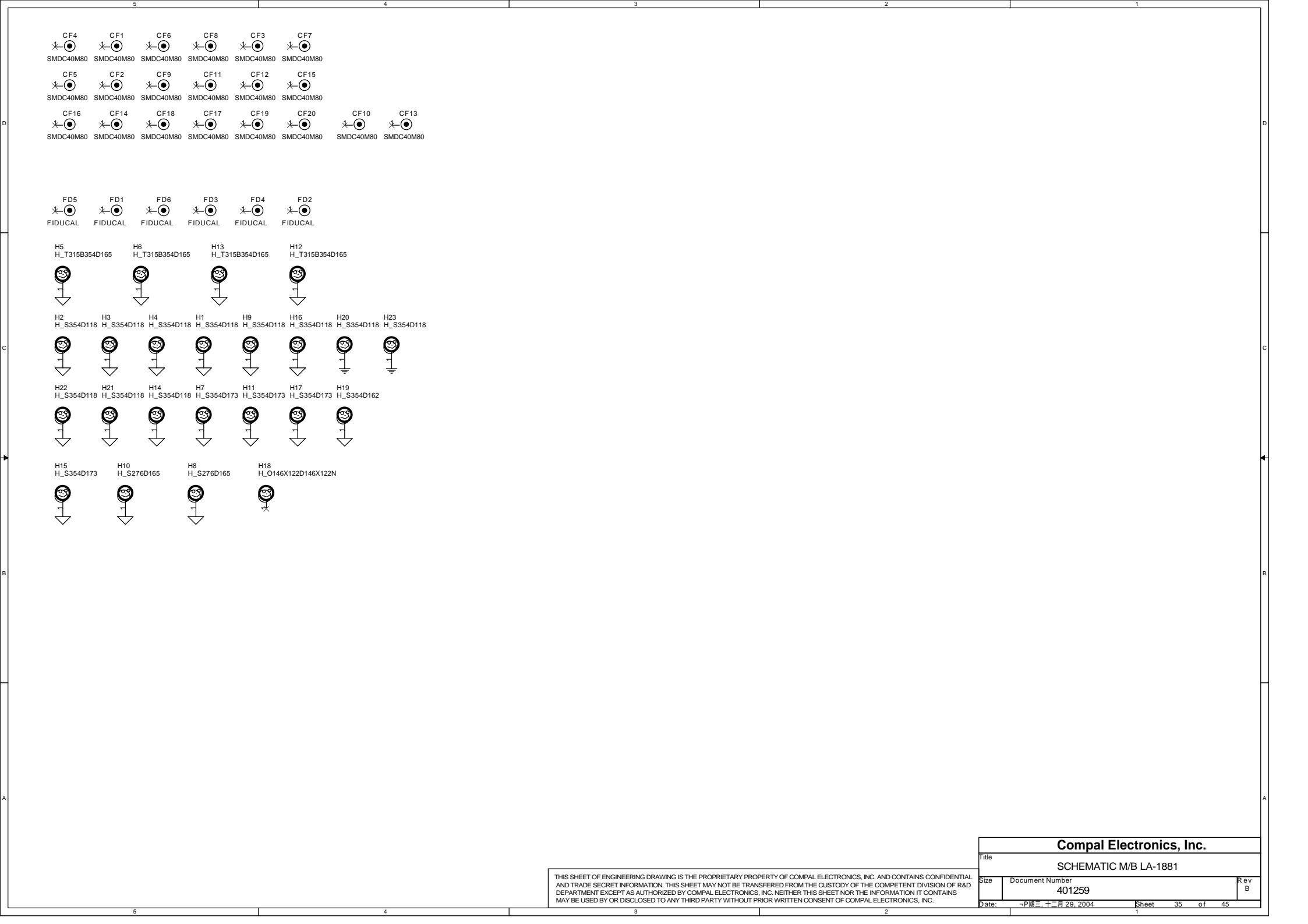
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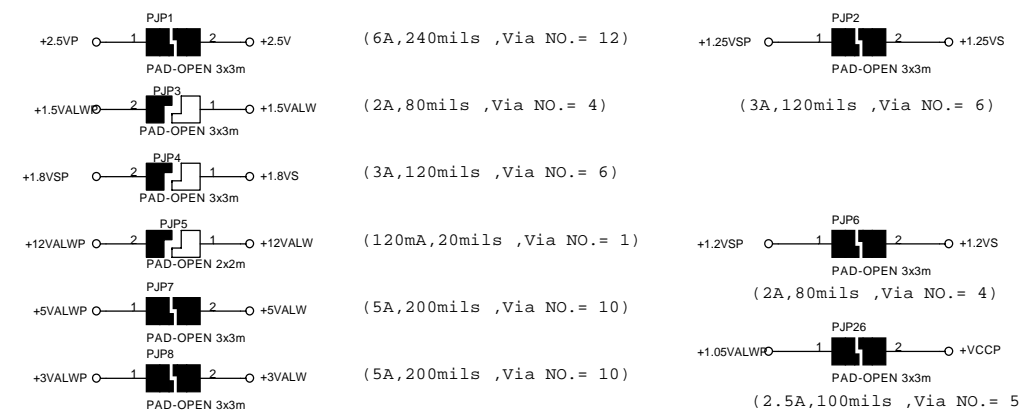
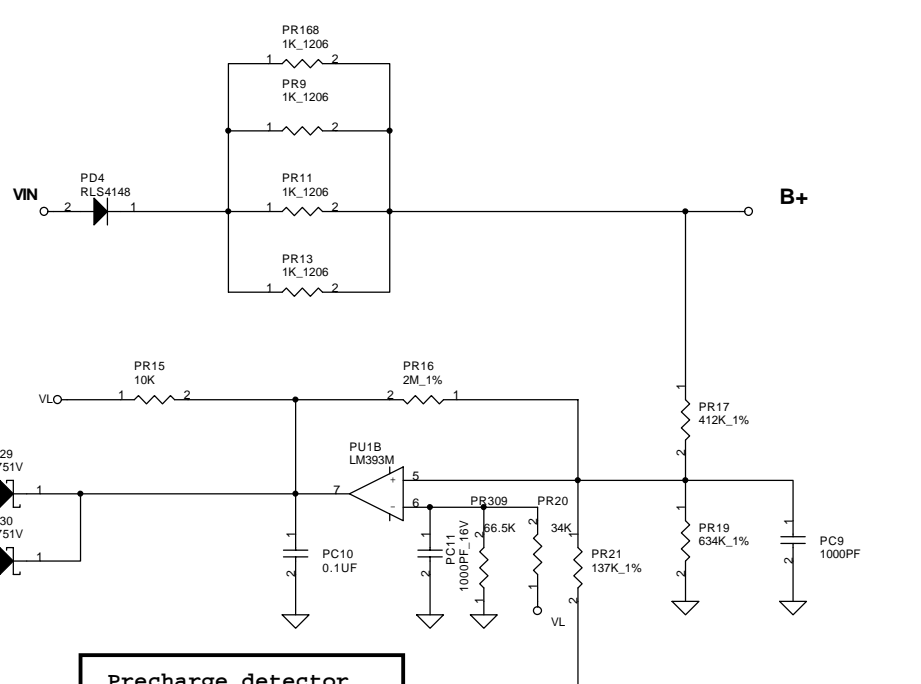
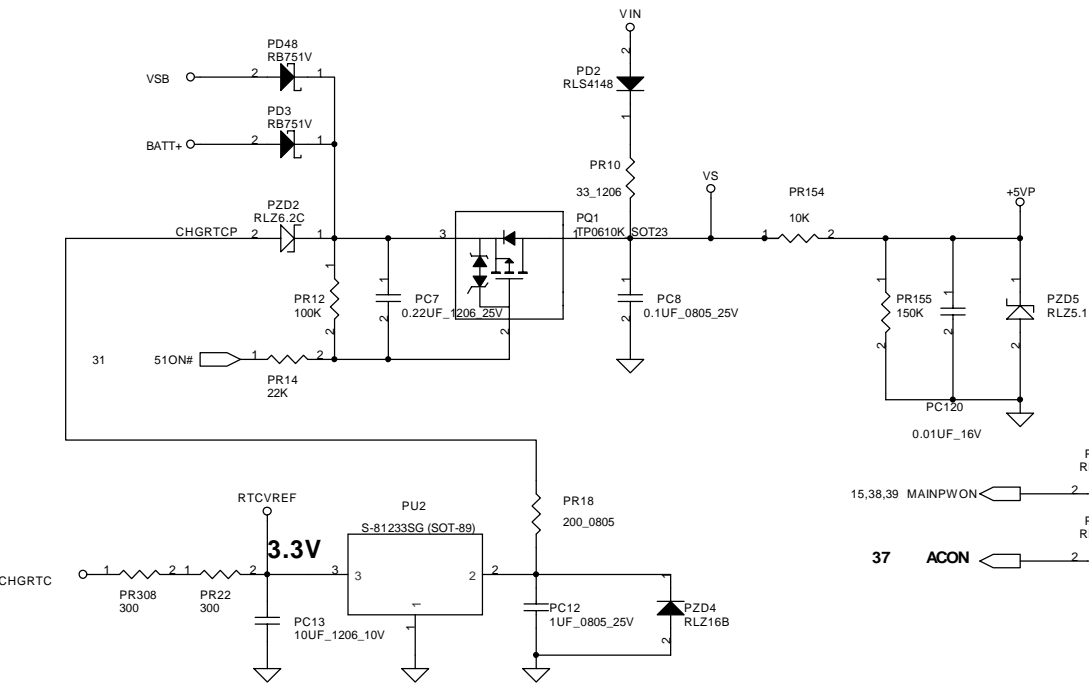
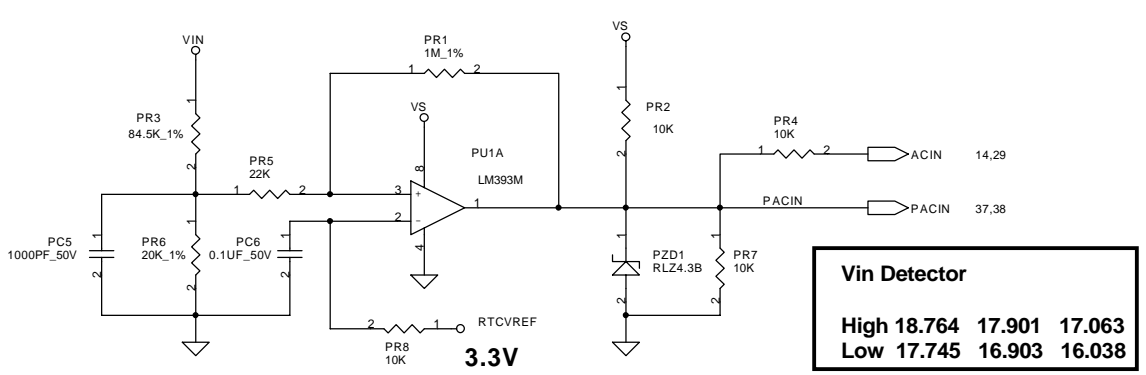
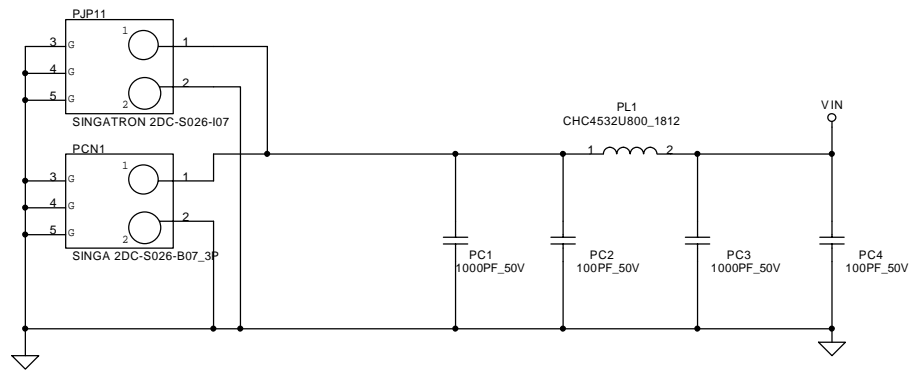
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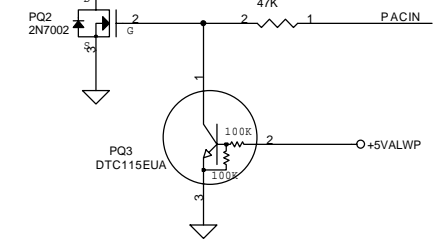
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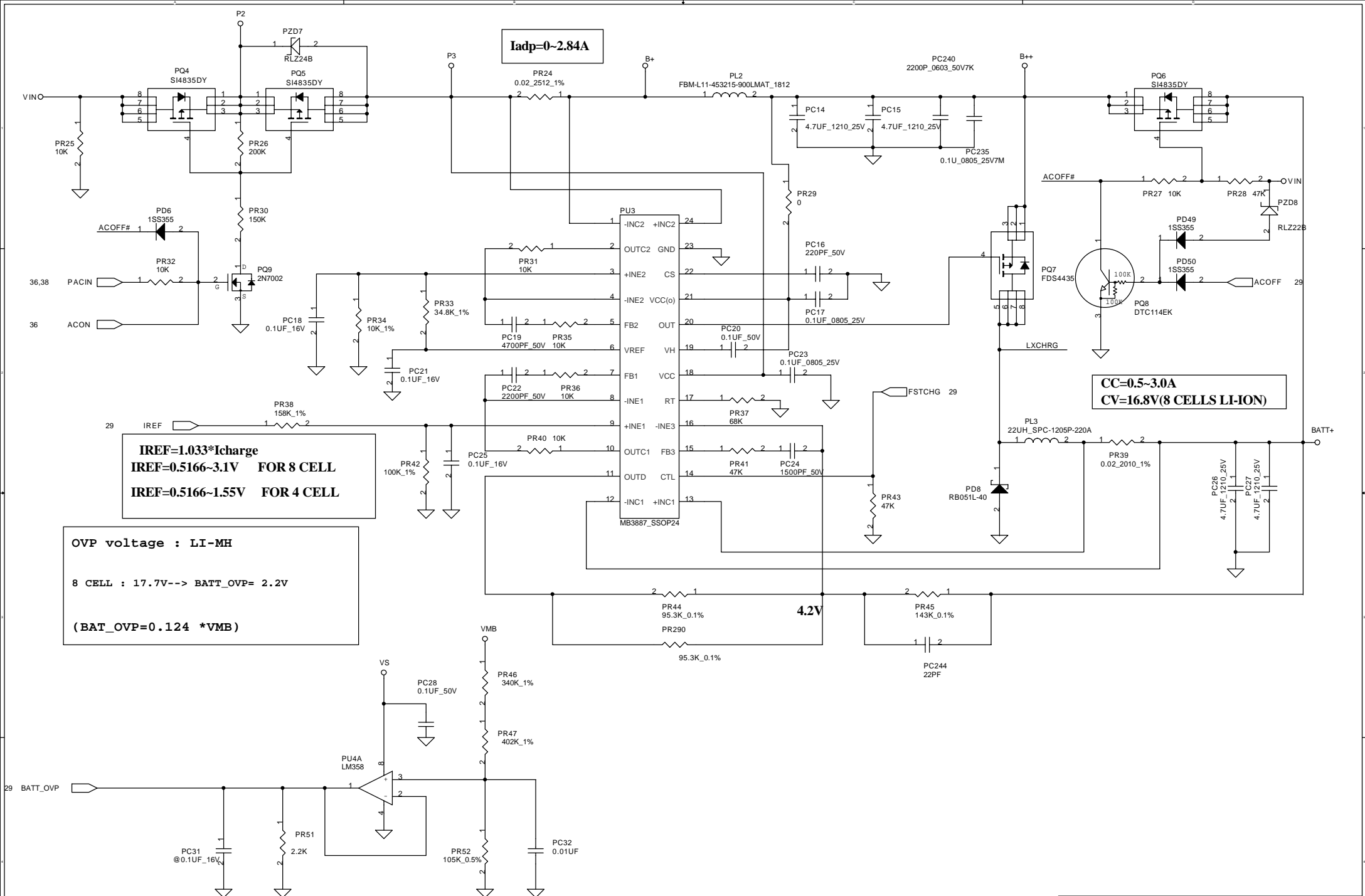


Precharge detector AC ADAPTOR		
16.69	16.05	15.42
15.6	15.02	14.35

Precharge detector AC ADAPTOR		
6.33	6.12	5.92
5.227	5.09	4.85



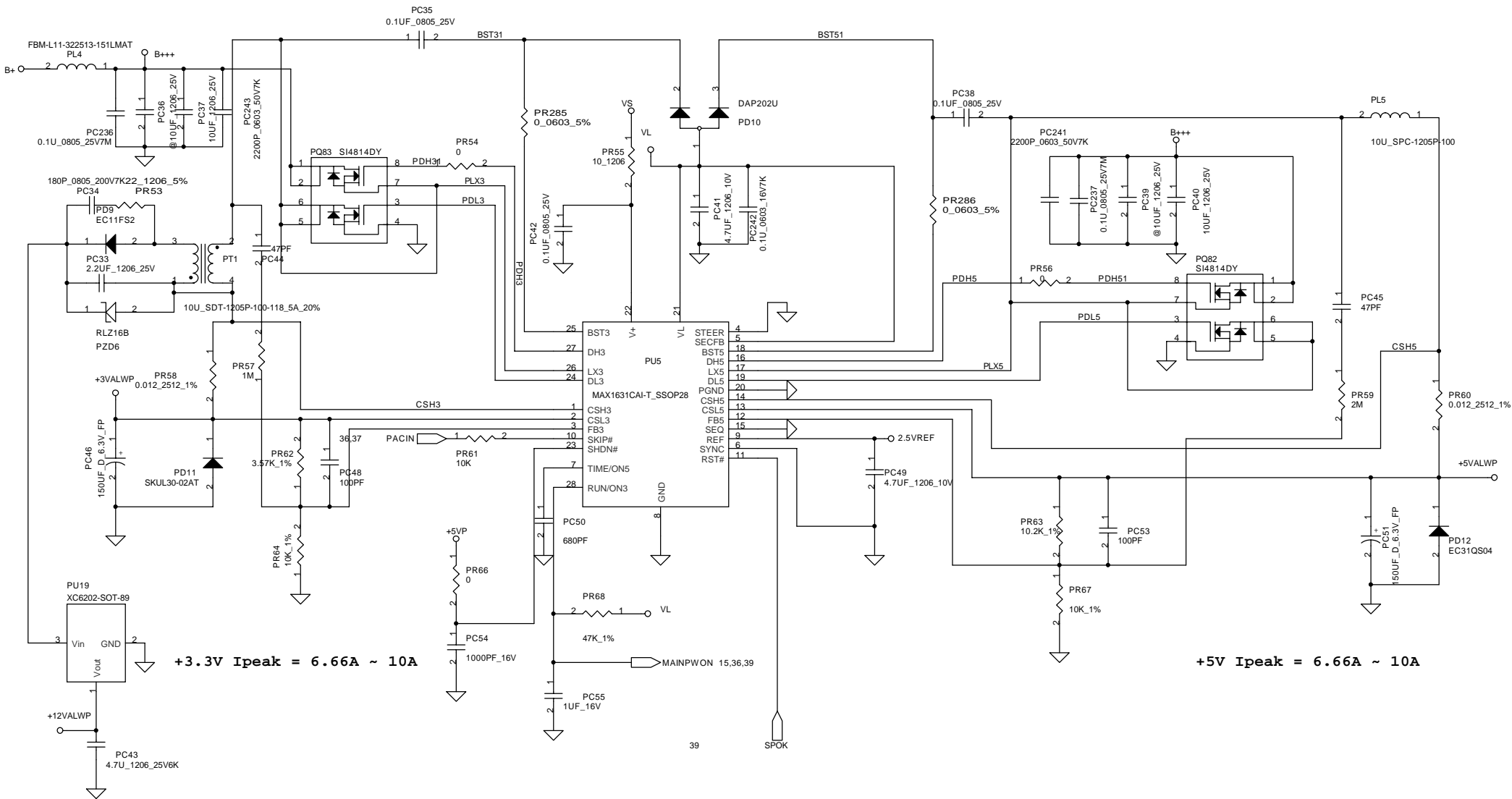
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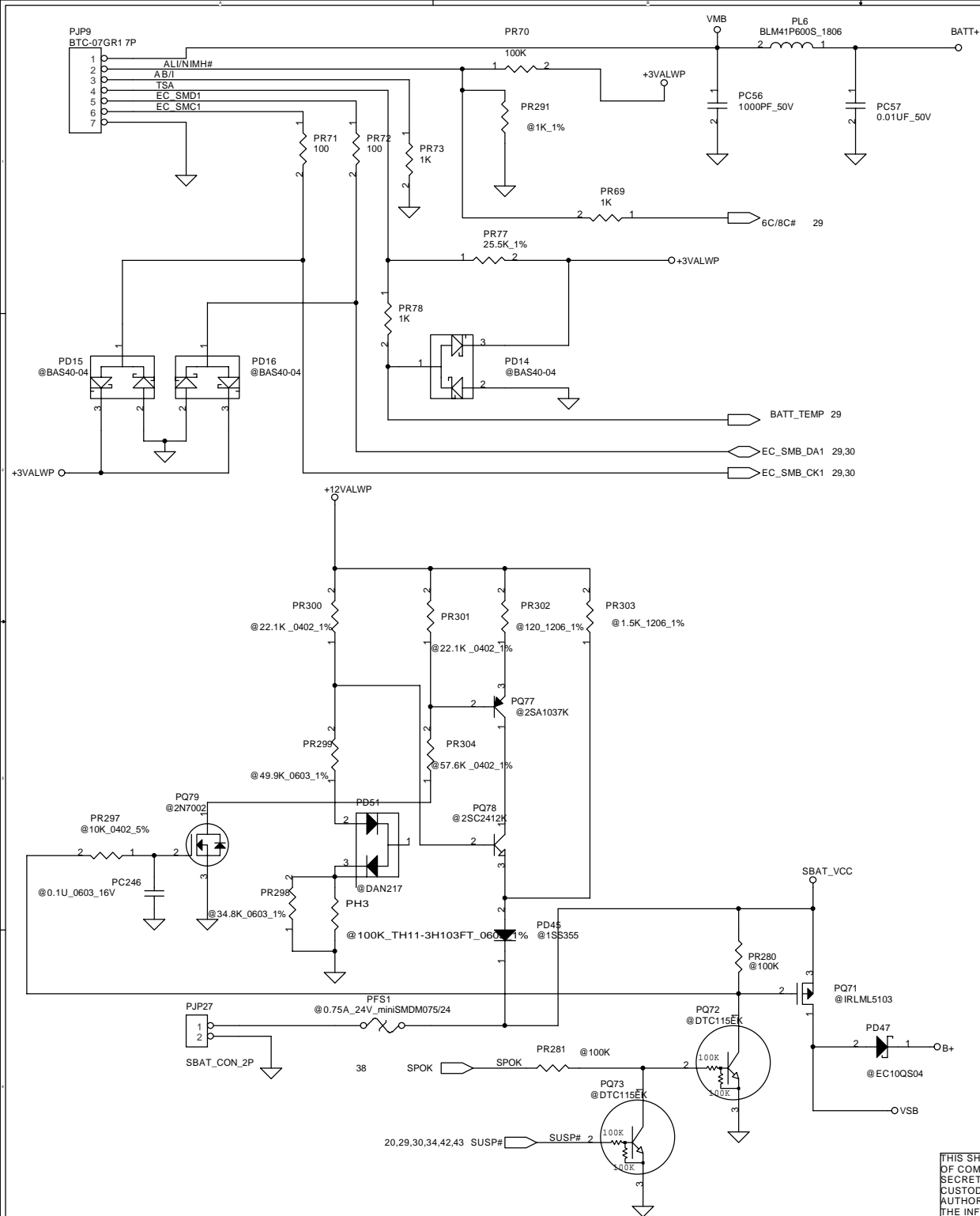
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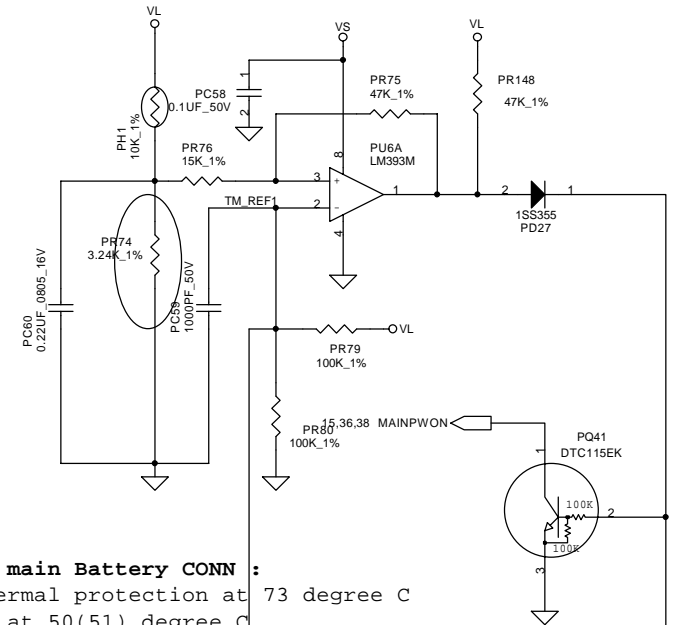
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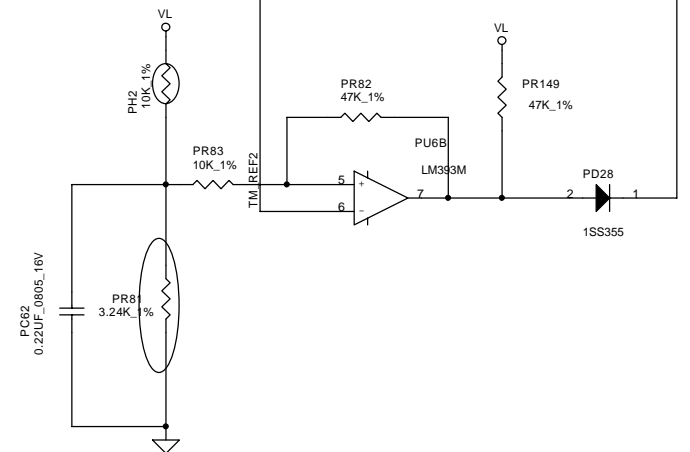
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PH1 under CPU botten side :
CPU thermal protection at 82 degree C
Recovery at 48 degree C



PH2 near main Battery CONN :
BAT. thermal protection at 73 degree C
Recovery at 50(51) degree C

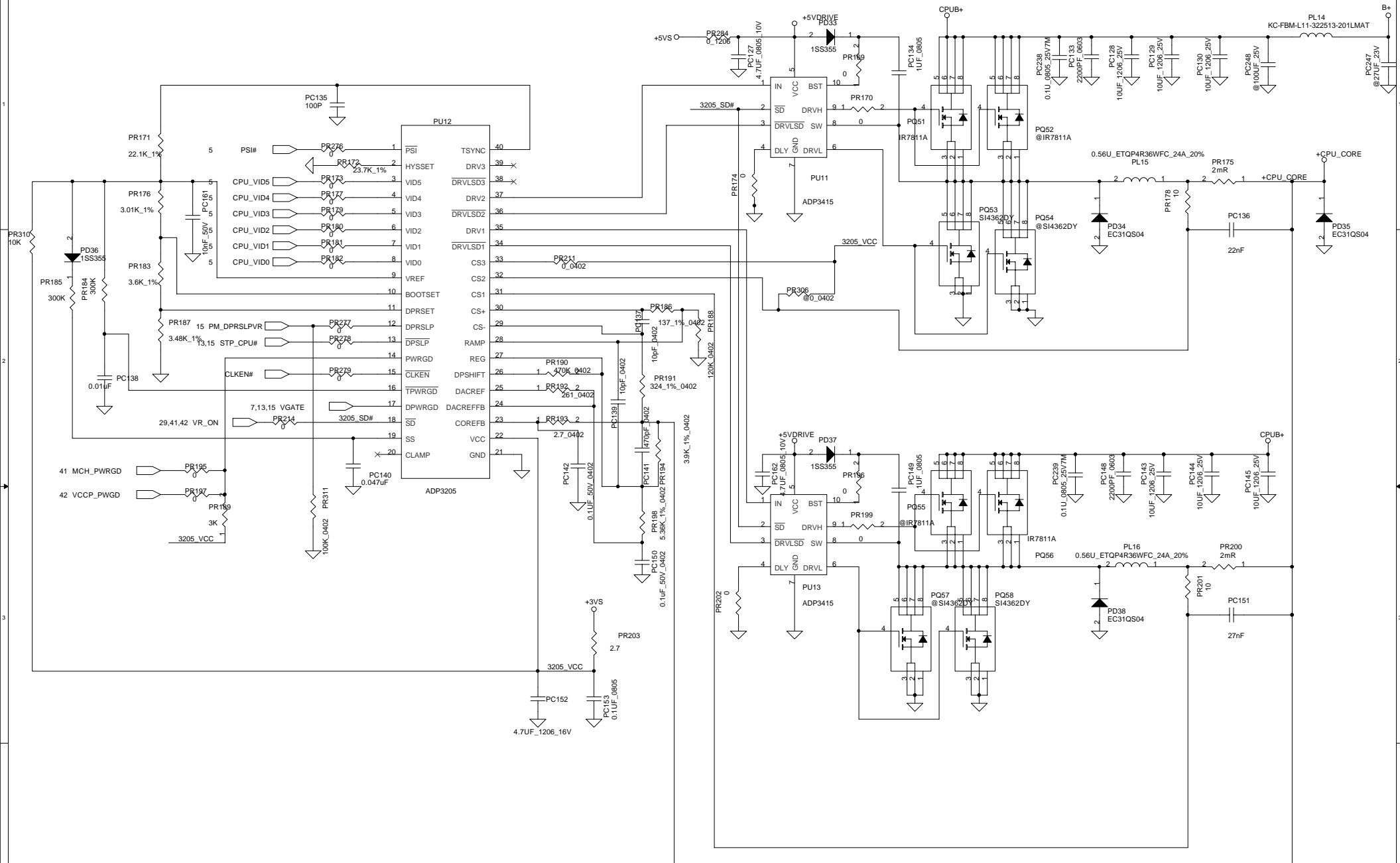


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CPU-CORE

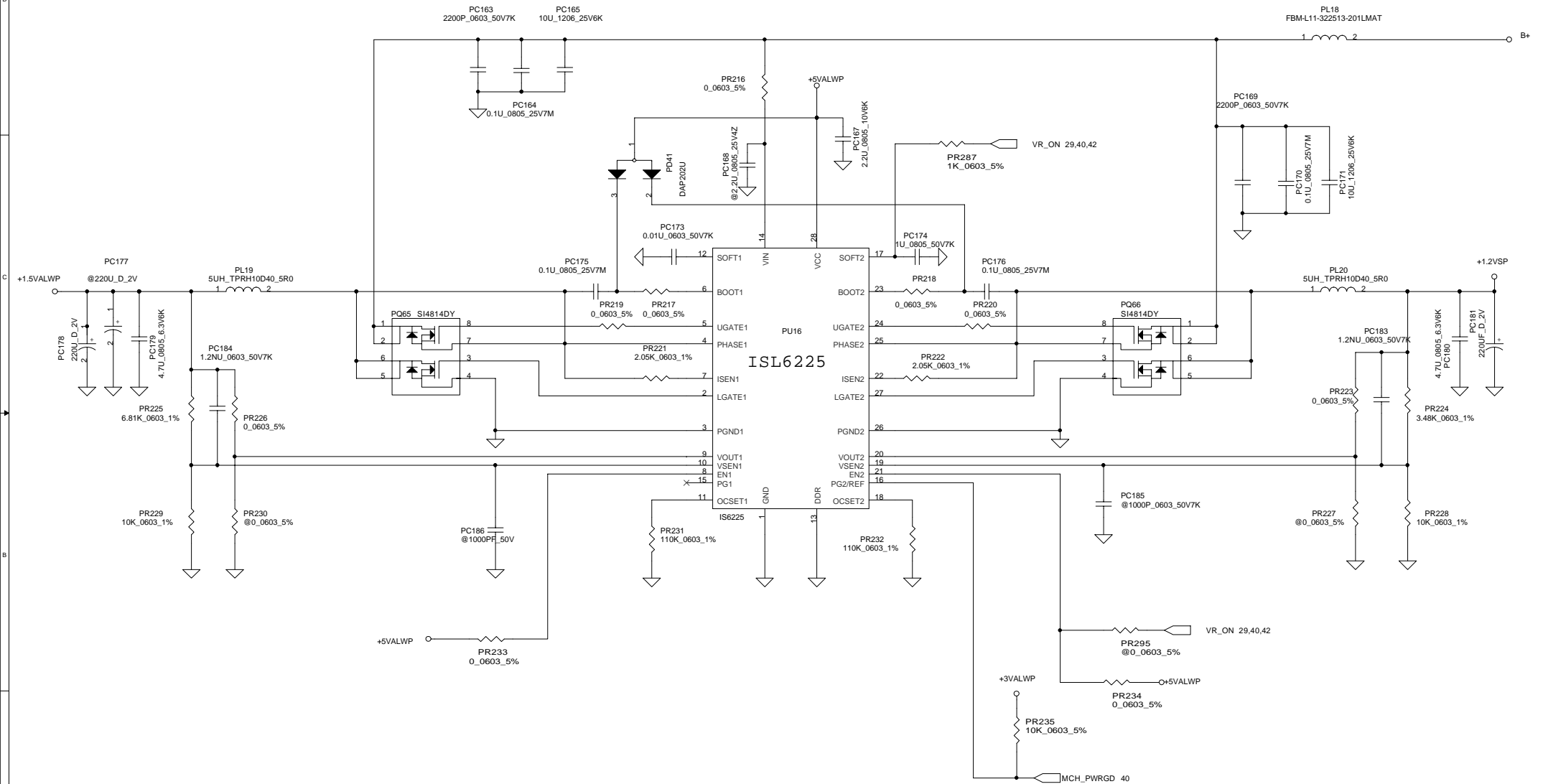


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+1.5VALWPV/+1.2VSP

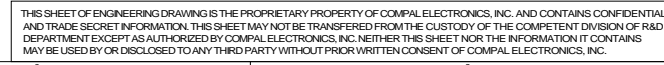


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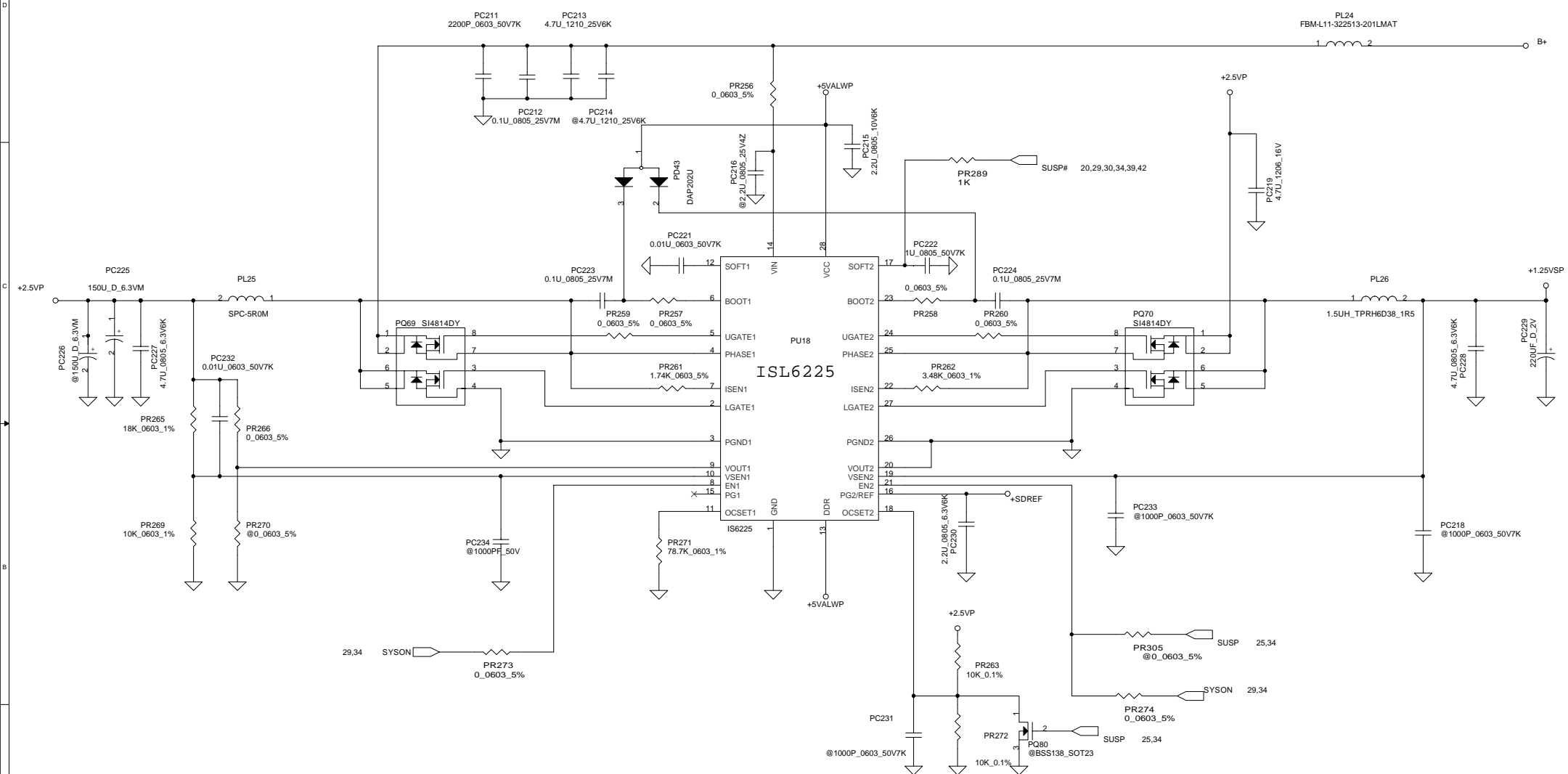
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+2.5VP/+1.25VSP



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Version change list (P.I.R. List)

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for HW

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	VER	Phase
1.	+5VMOD leakaged when AC-IN	Change EXTIDEPWR# to +5VALW	0.2	P17	Delete EXTIDEPWR# Add +5VALW to R126		DVT
2.	For ESD	For ESD	0.2	P28	Add D26, D27 on TP_DATA, TP_CLK		DVT
3.	For EMI	For EMI	0.2	P31	Add C574 on FAN1_TACH		DVT
4.	Reserve For ENE KB3910	Reserve For ENE KB3910	0.2	P29	Add R441, R442, R443, R444, R445		DVT
5.	Reserve For CB1410 Rev.B0	Reserve For CB1410 Rev.B0	0.2	P20,21	Add C575, C576, R447, R448, R449		DVT
6.	Reserve FAN Control Circuit	Reserve FAN Control Circuit	0.2	P31	Add U44, R450, R451, R452, R453, C577		DVT
7.	Bluetooth LED	Add Bluetooth LED	0.3	P31	Add Q50, R454		PVT
8.	Change LED Wire Connector	Change LED Wire Connector	0.3	P26	Change JP24 Connector Type		PVT
9.	Reserve SCROLL LED Circuit	Add LED Control Circuit	0.3	P26	Add Q51, Q52, R455, R456		PVT
10.	For ESD	For ESD	0.3	P33	Add D28, D29, D30, D31 close to Speaker Connector		PVT

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Version change list (P.I.R. List)

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for PWR

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	VER	Phase
1		delete 6 cell charger voltage		37	1.delete PQ75,PQ74,PR294,PC245		DVT
2		Adjust charger charge voltage:		37	1. change PU3 from MB3878 to MB3887, PR38 from 118K to 174k,PR33 from 26.1k to 34k, PR44 from 120k_1% to 9.3k_0.1%,PR45 from 243k_1% to 143k_1%, PR290 from 243k_1% to 143k_0.1%		
3		modify 1.5UH CHOKE footprint to be the same as all vender		42	Change PL26 fom old version:1.5UH TPRH6D38 to new version 1.5UH_TPRH6D38-N.		DVT
4		add pull low resistor PR311 to ground for hardware		39	add PR311		DVT
5		for cpu core current balance		40	change pc151 from 22n to 27n		PVT
6		for vender require , new DC JACKbe crease		36	increase PJP11		
7		for 1.2vs soft start rise time		41,42,43	change pc174,pc198,pc222, from 4.7u to 1u		
8		cost down		38,39,40,41	delete PC36,PC39,PC247,PC249 CHANGE PC195,PC189 FROM 10U 1206 TO 4.7U 1210		
9		TP0610C will be phase out		36	change TP0610C to TP0610K		

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