

Compal Confidential

DCL56 Schematics Document

Banias uFCBGA/uFCPGA Package with Odem Core Logic

2004-05-07 for MP

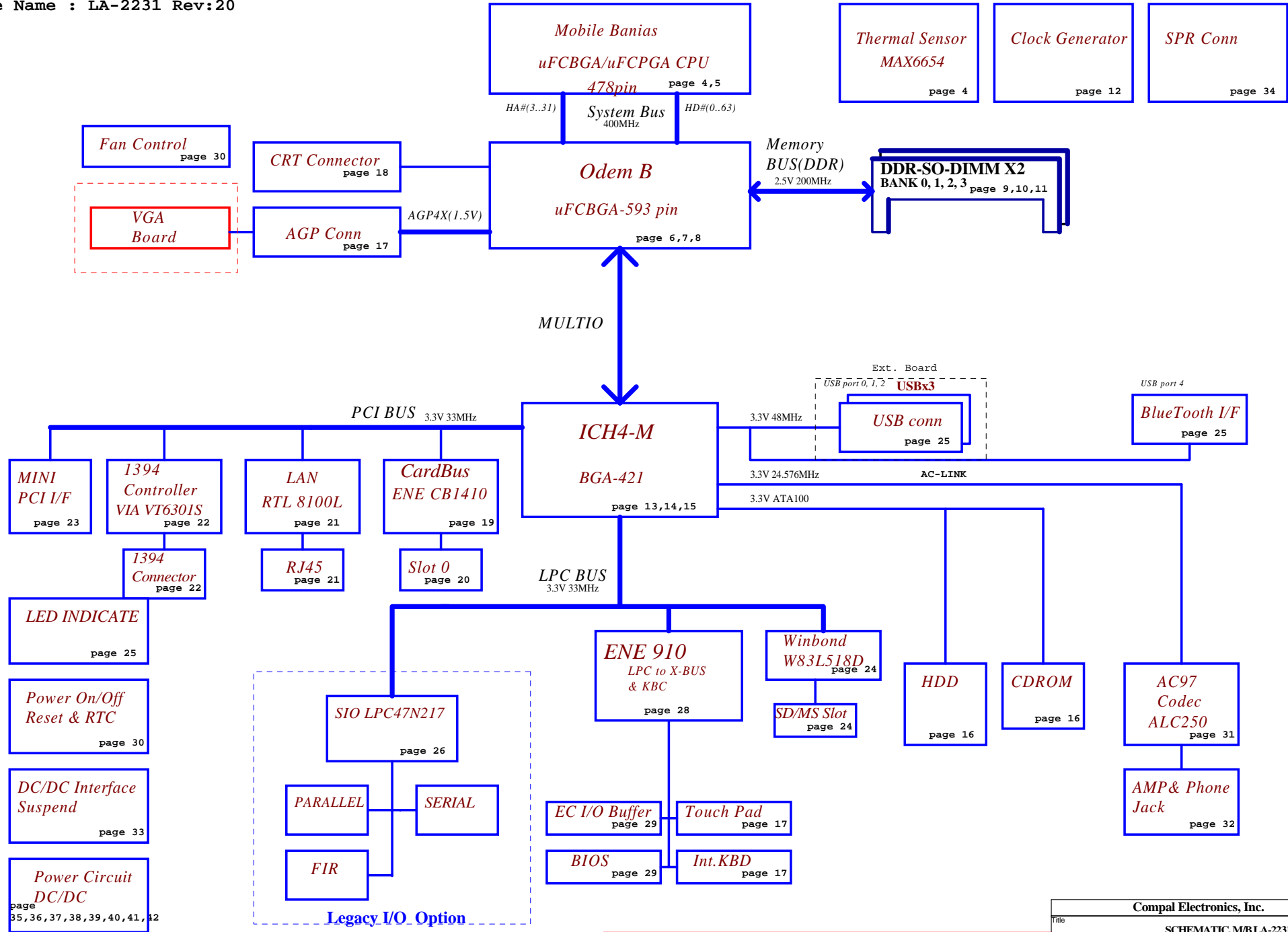
REV: 20

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Model Name :DCL56

File Name : LA-2231 Rev:20



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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 MCH	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	AGP 4X	ON	OFF	OFF
+1.8VALW	1.8V power rail	ON	ON	ON*
+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

BID2	BID1	BID0	PCB Revision
0	0	0	0.1
0	0	1	0.2
0	1	0	0.3
0	1	1	0.4
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1	0	1	
1	1	0	
1	1	1	

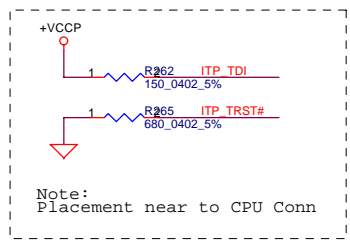
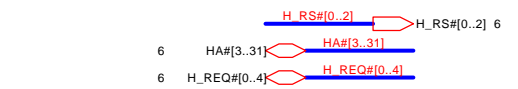
External PCI Devices

Device	IDSEL#	REQ#/GNT#	Interrupts
VGA			PIRQA
CardBus	AD19	2	PIRQC
LAN	AD17	3	PIRQD
Mini-PCI	AD18,AD22	1/4	PIRQC/PIRQD
1394	AD16	0	PIRQB

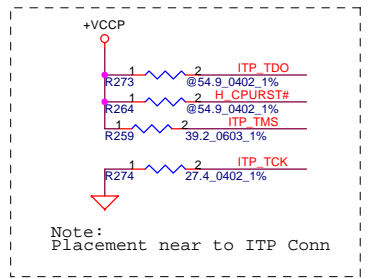
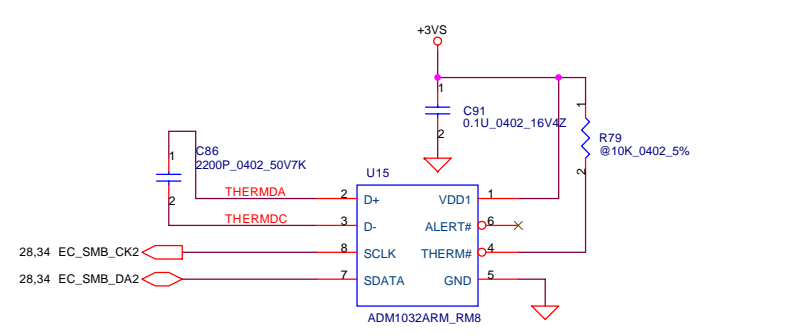
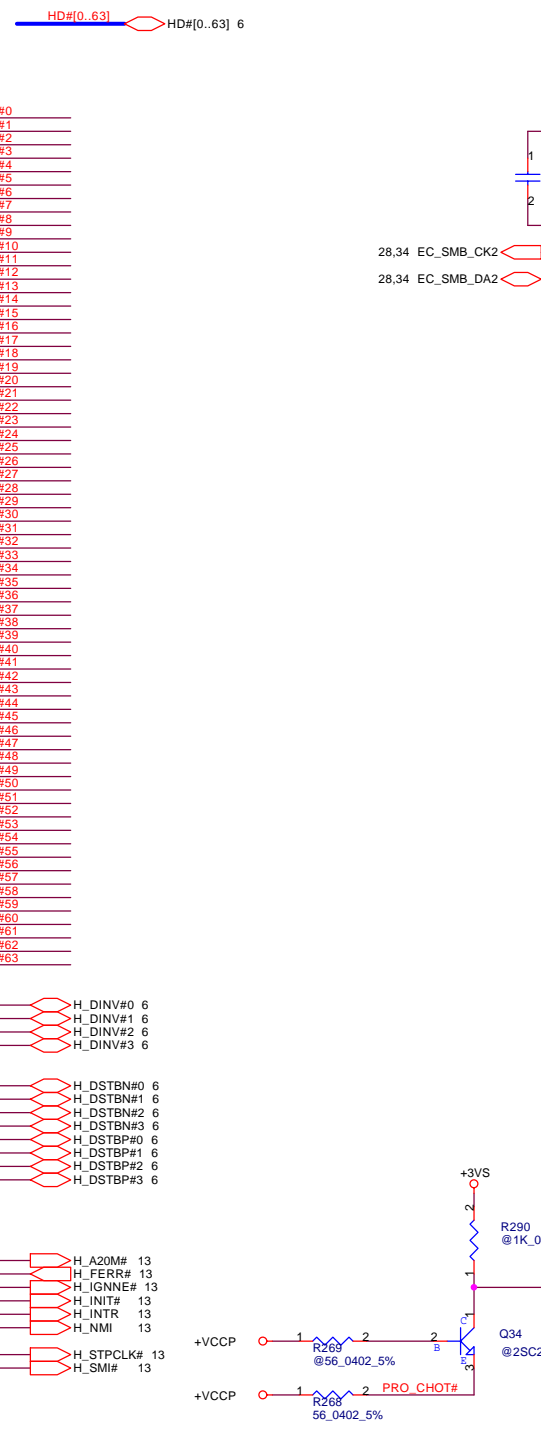
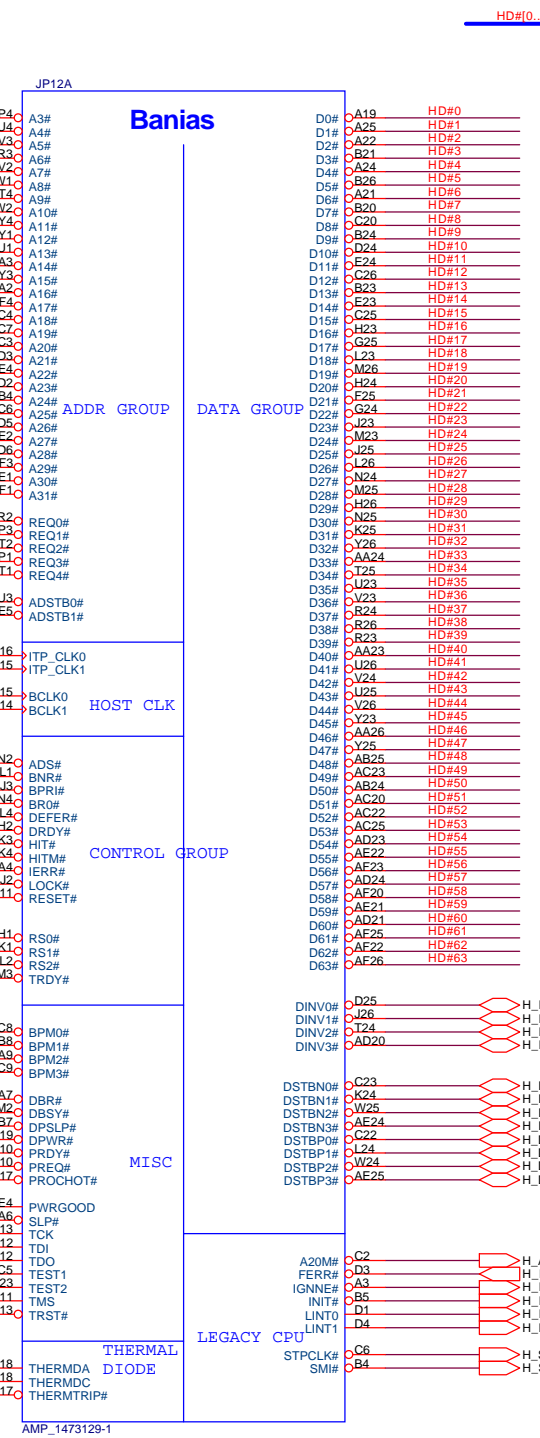
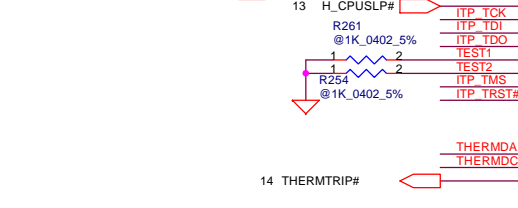
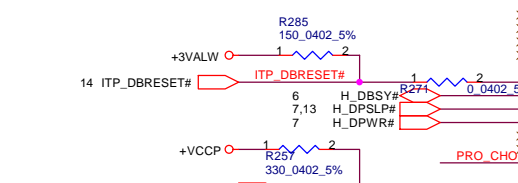
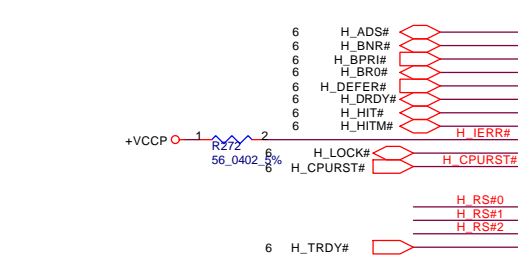
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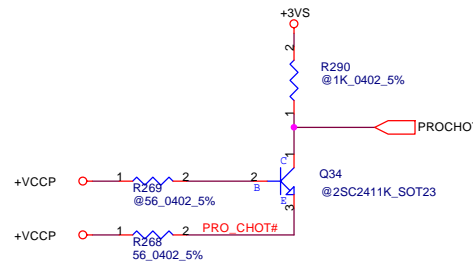
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Note:
Placement near to CPU Conn

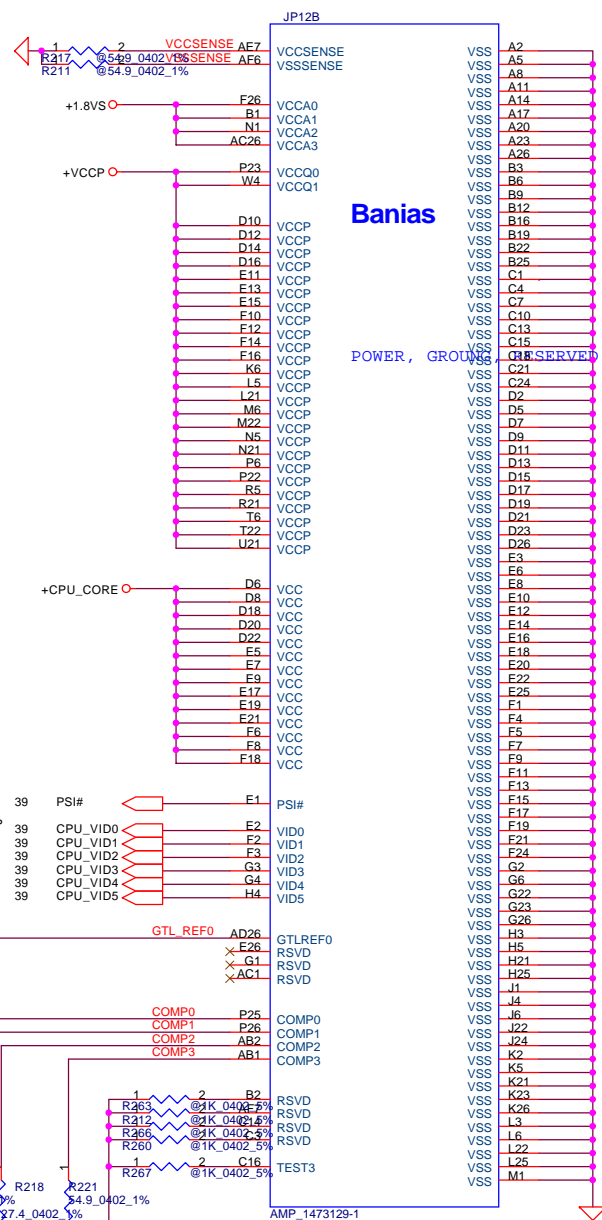


Note:
Placement near to ITP Conn



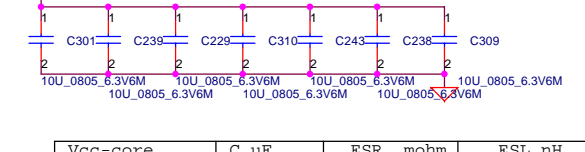
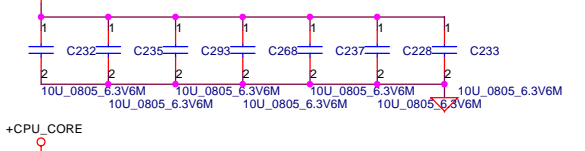
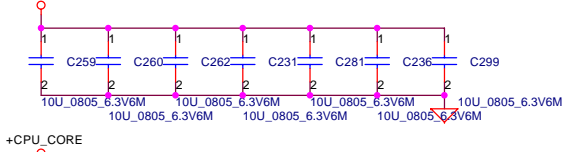
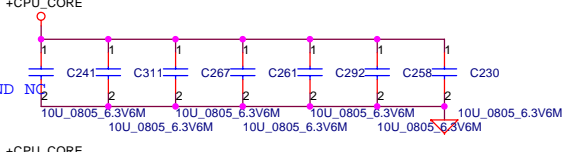
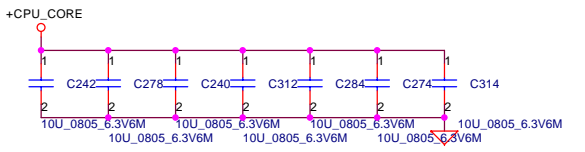
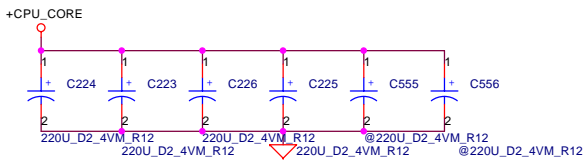
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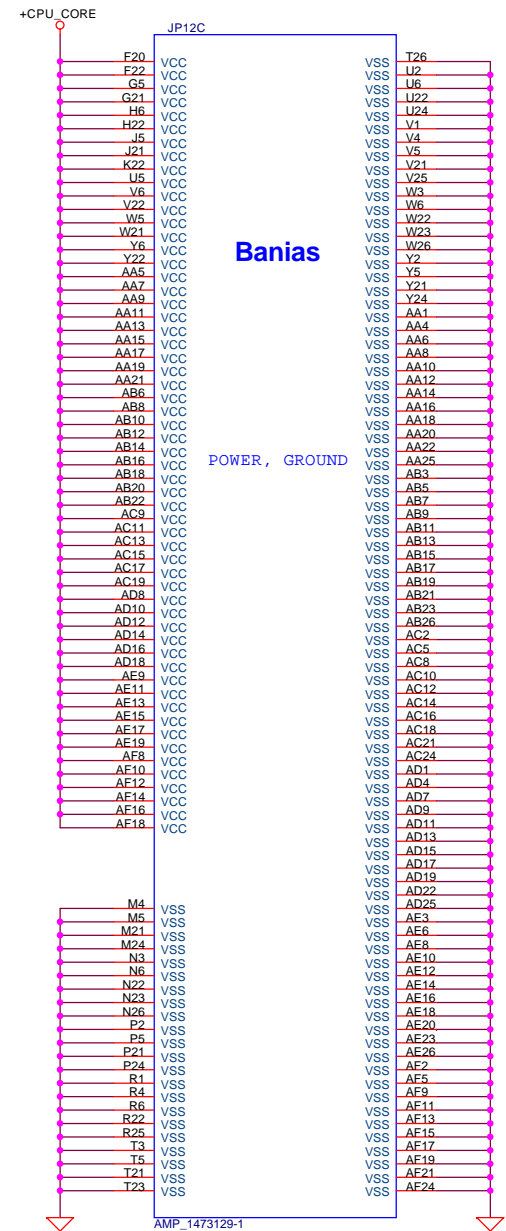
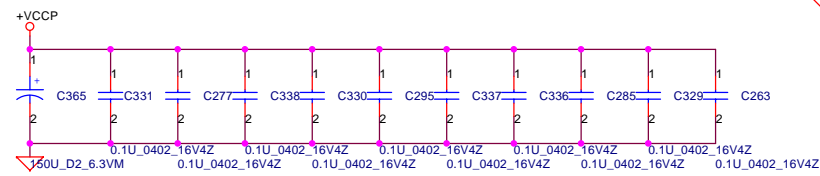
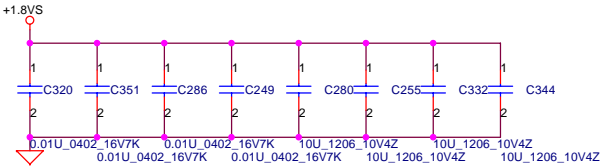


Banias

POWER, GROUND, RESERVED SIGNALS AND NC



Vcc-core Decoupling	C, uF	ESR, mohm	ESL, nH
SPCAP, Polymer	4X220uF	12m ohm/4	3.5nH/4
MLCC 0805 X5R	35X10uF	5m ohm/35	0.6nH/35



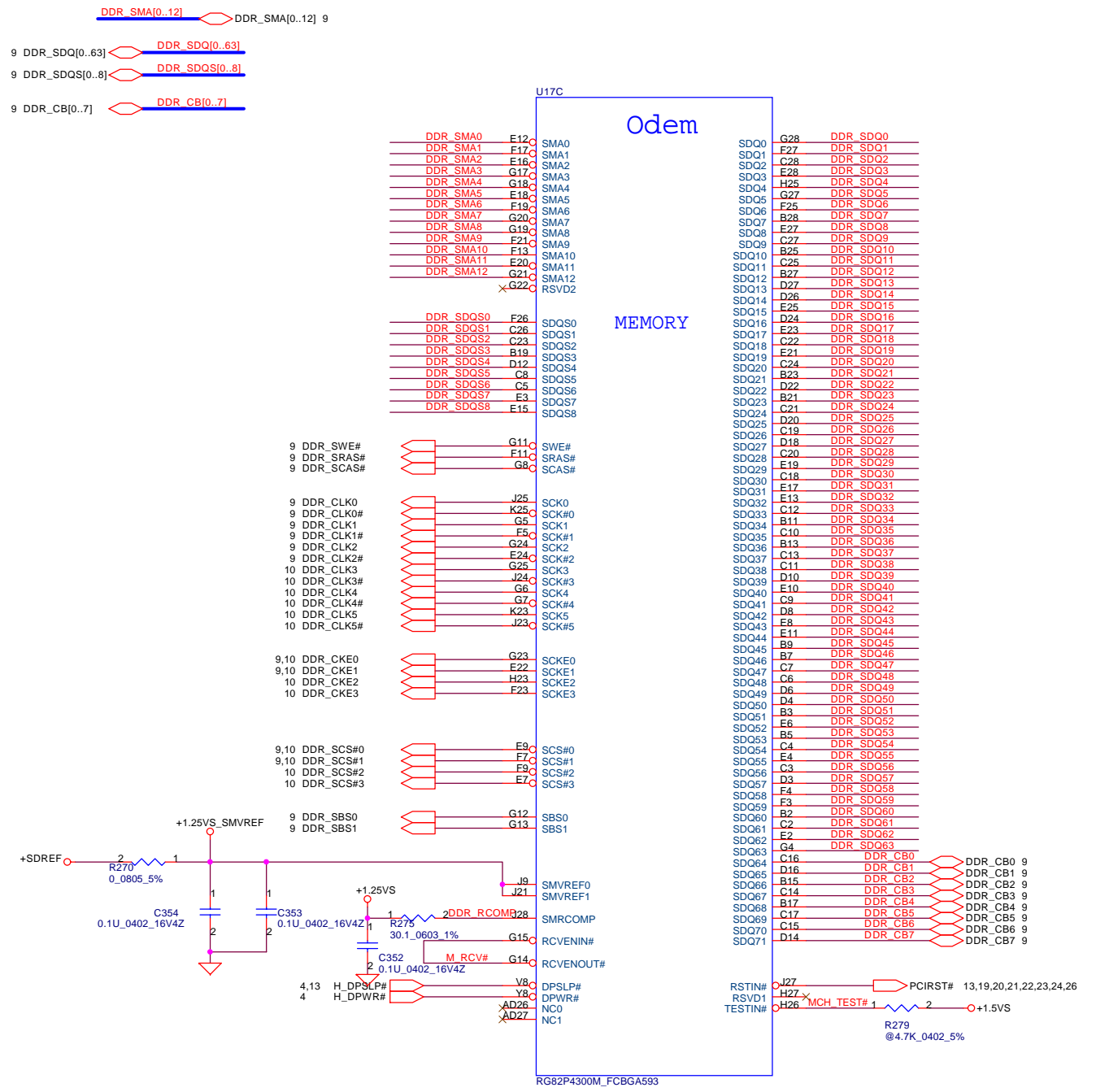
Banias

POWER, GROUND

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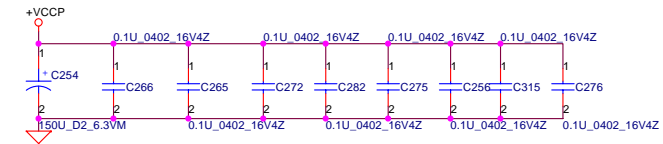
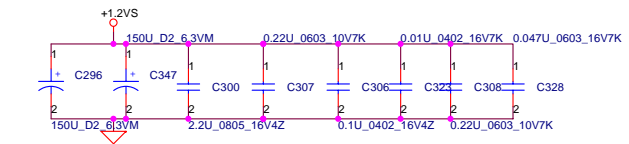
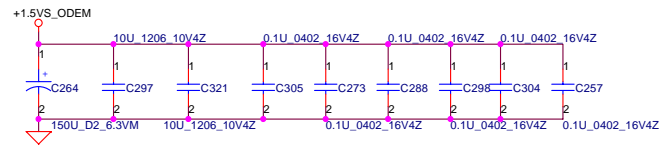
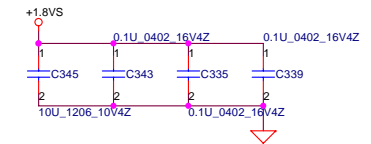
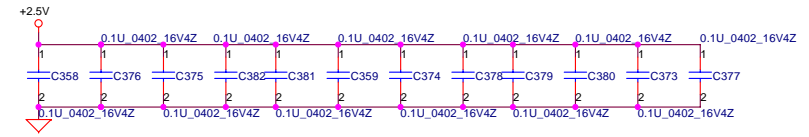
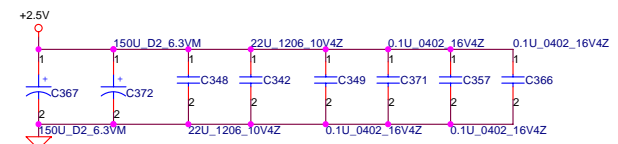
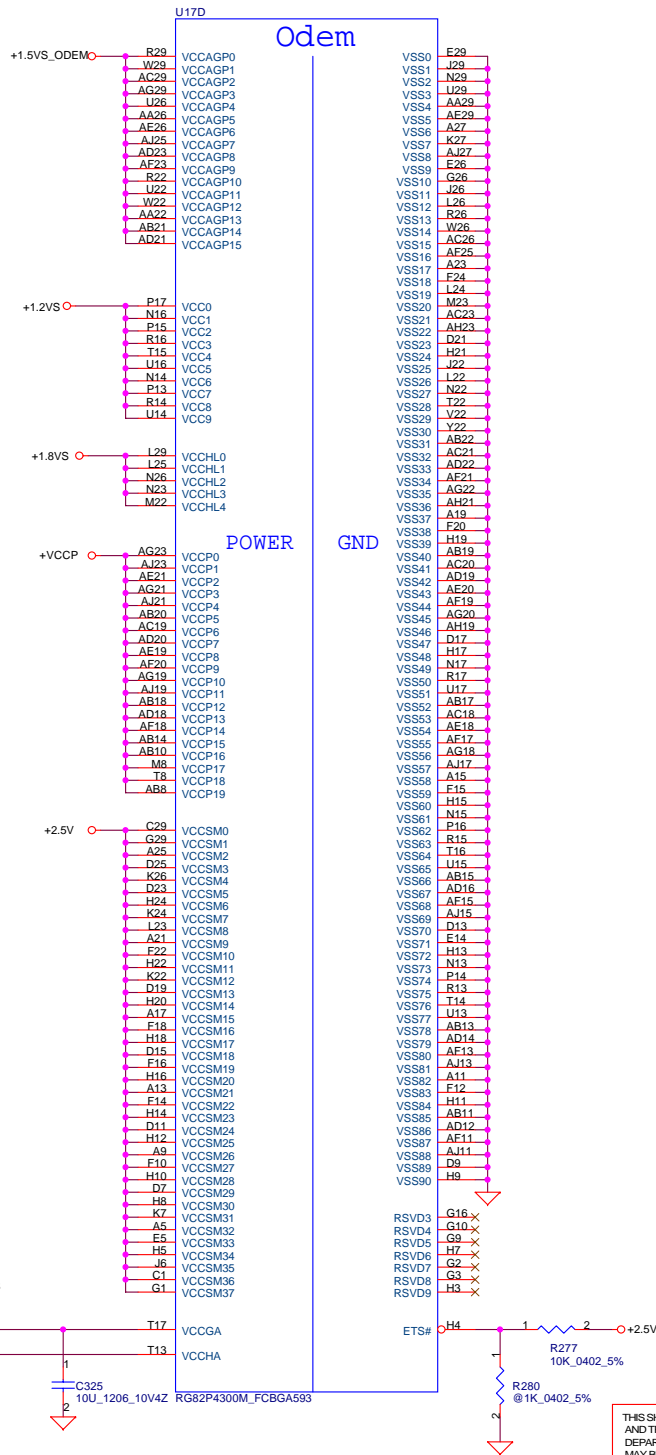
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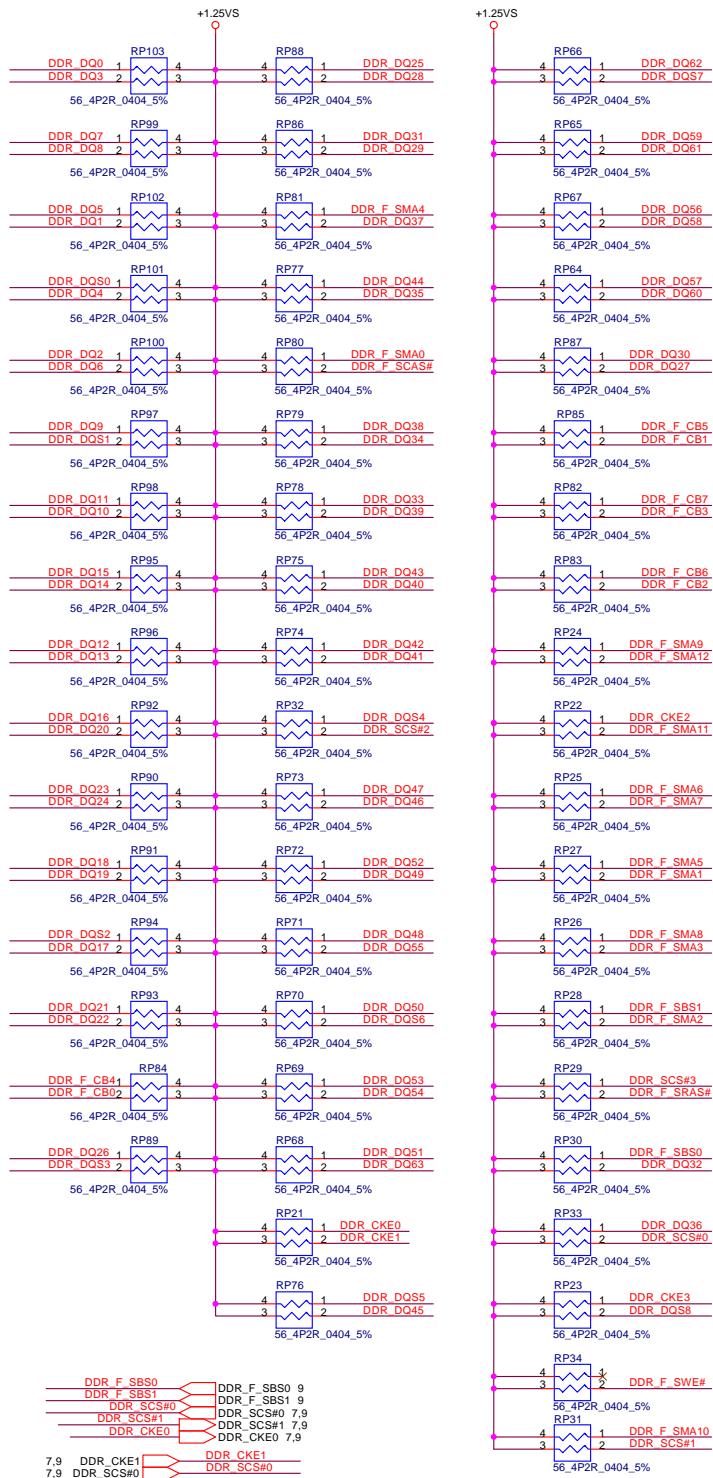
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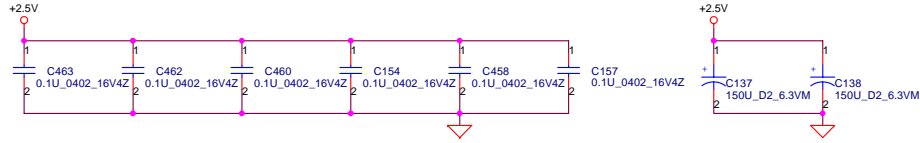
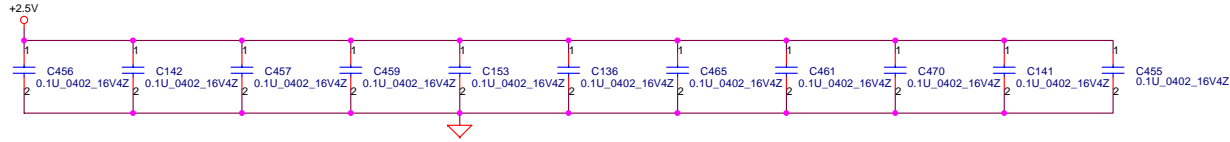
- DDR_F_SBS0 → DDR_F_SBS0 9
- DDR_F_SBS1 → DDR_F_SBS1 9
- DDR_SCS#0 → DDR_SCS#0 7,9
- DDR_SCS#1 → DDR_SCS#1 7,9
- DDR_CKE0 → DDR_CKE0 7,9
- 7,9 DDR_CKE1 → DDR_CKE1
- 7,9 DDR_SCS#0 → DDR_SCS#0

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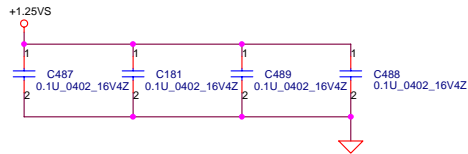
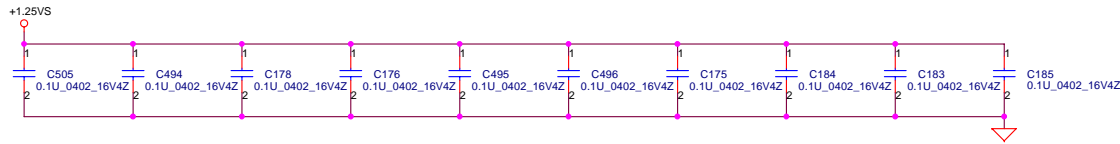
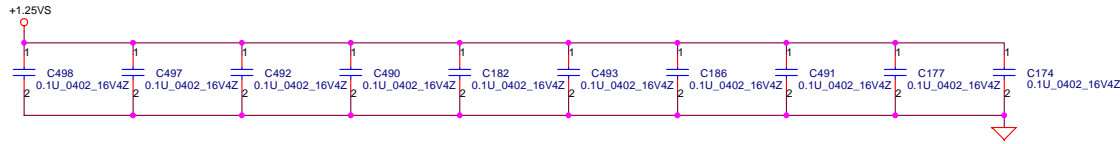
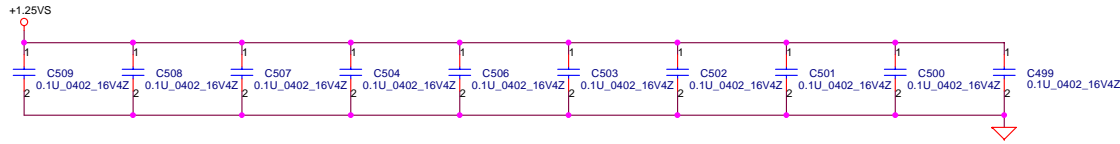
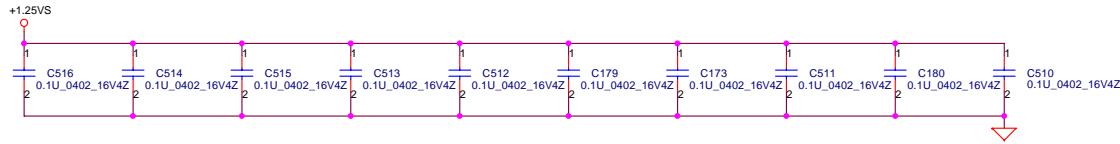
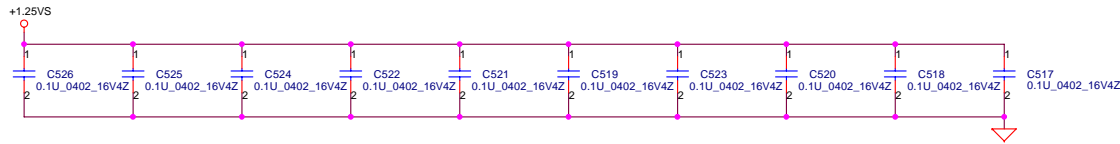
Layout note :

Distribute as close as possible to DDR-SODIMM.



Layout note :

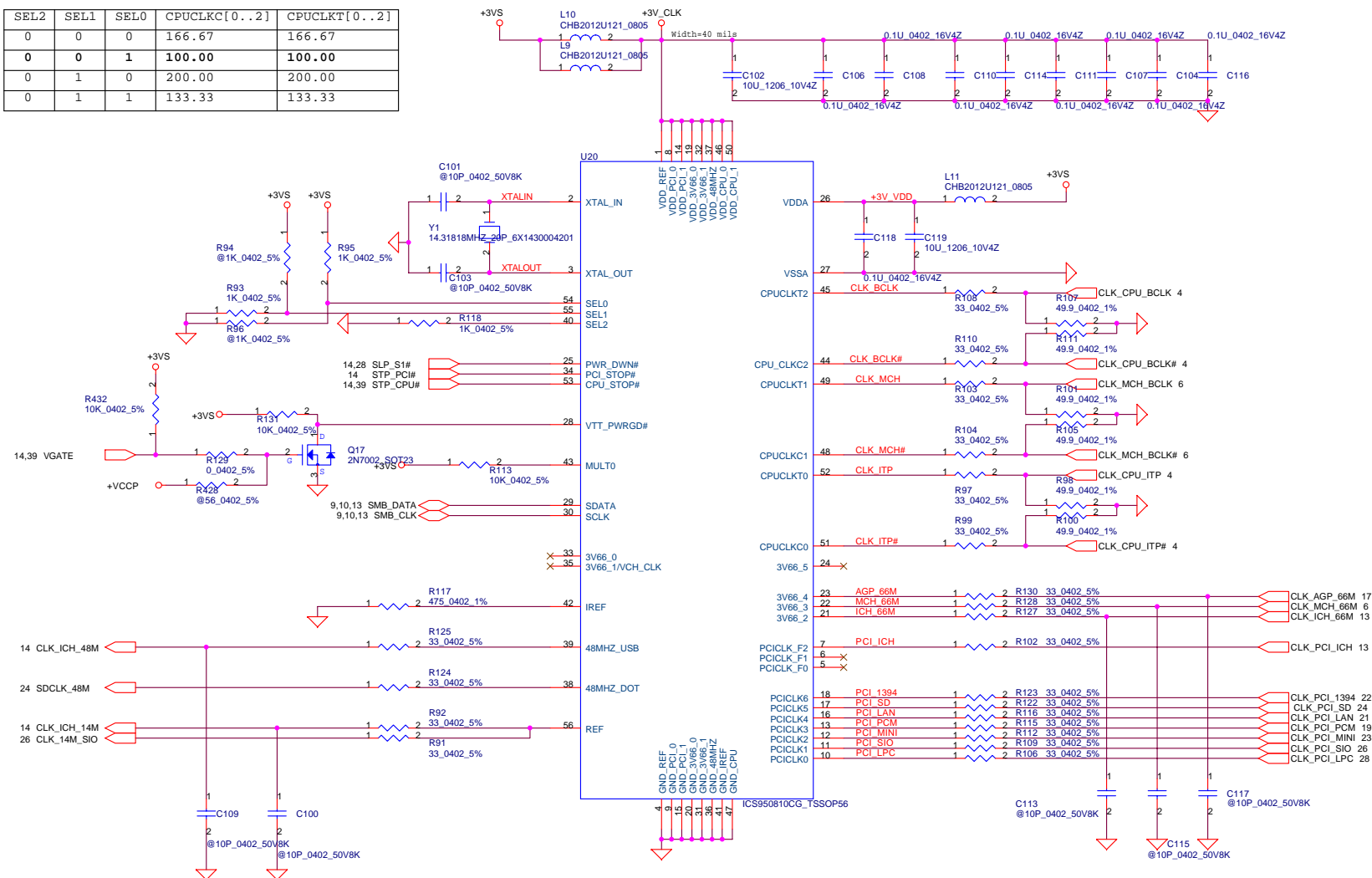
Place one cap close to every 2 pull up resistors termination to +1.25V



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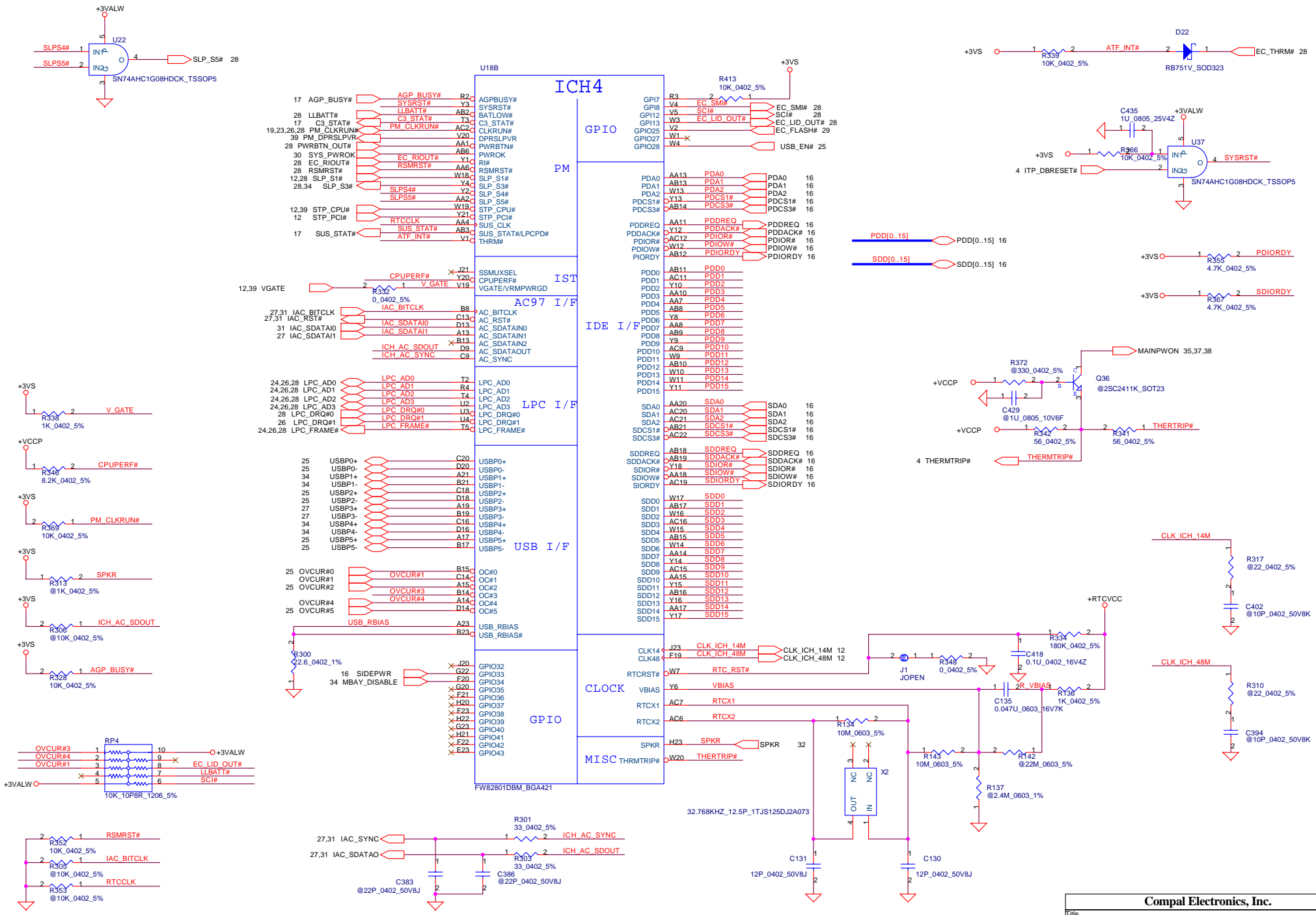
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SEL2	SEL1	SEL0	CPUCLK[0..2]	CPUCLKT[0..2]
0	0	0	166.67	166.67
0	0	1	100.00	100.00
0	1	0	200.00	200.00
0	1	1	133.33	133.33



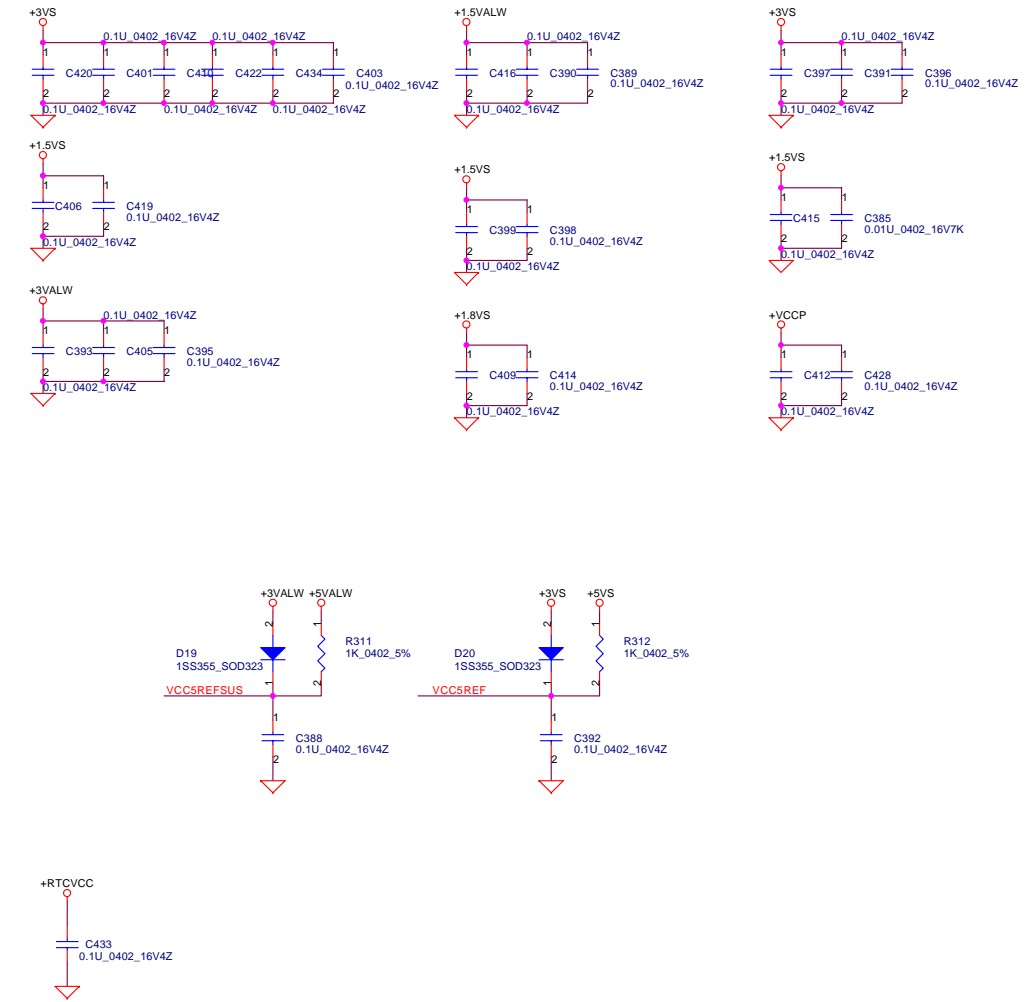
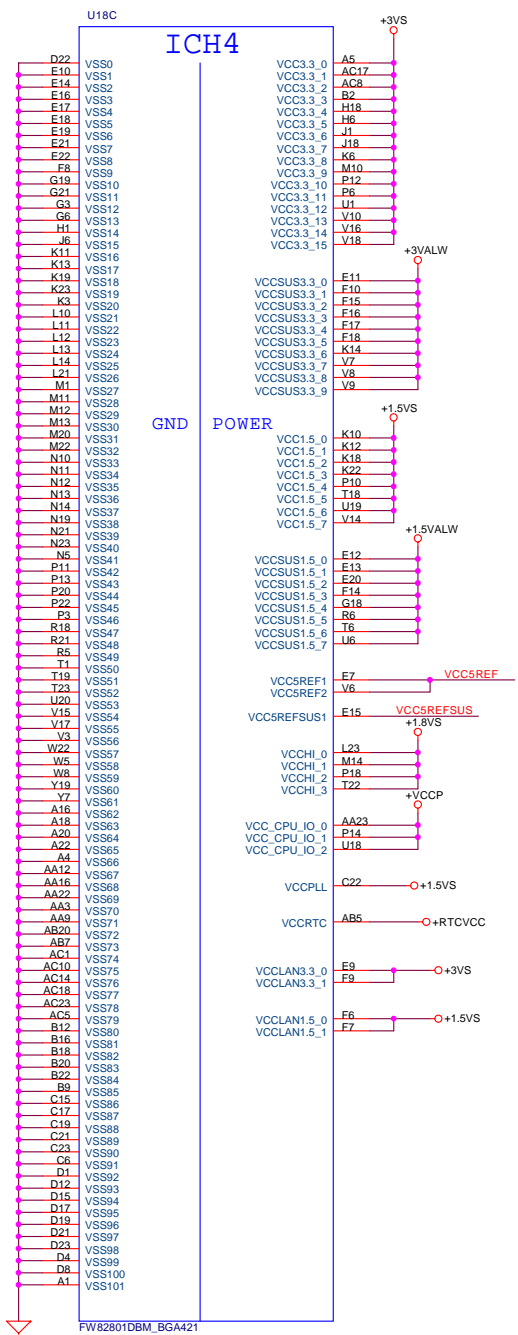
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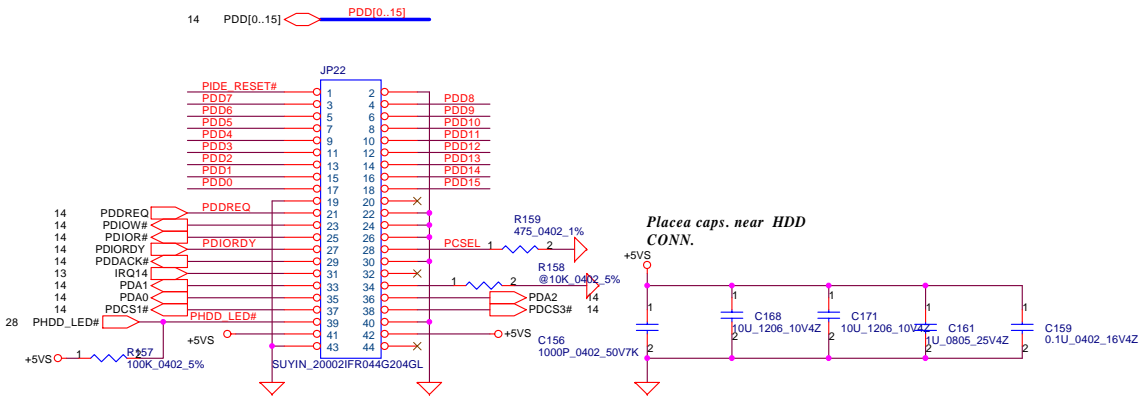
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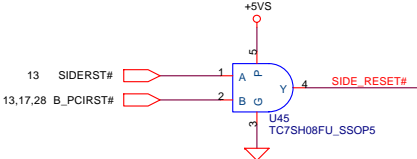
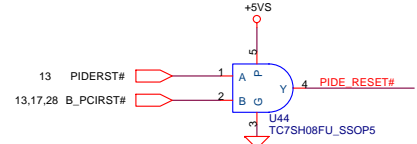
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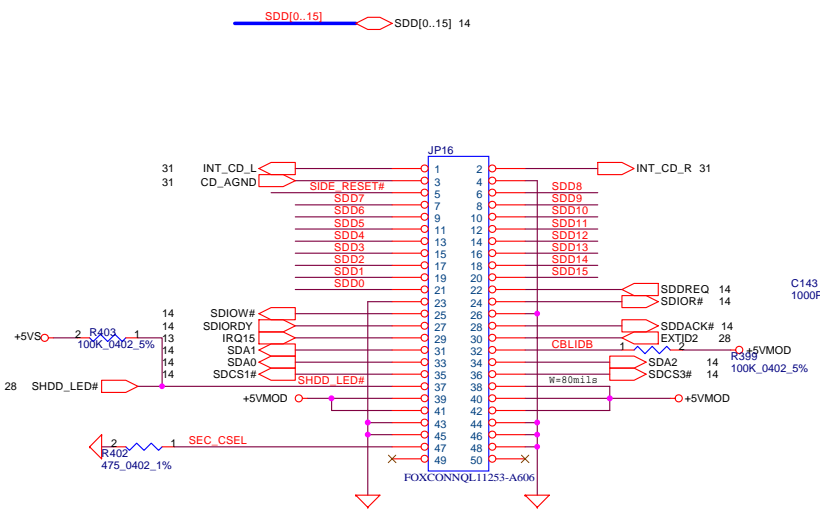
HDD Connector



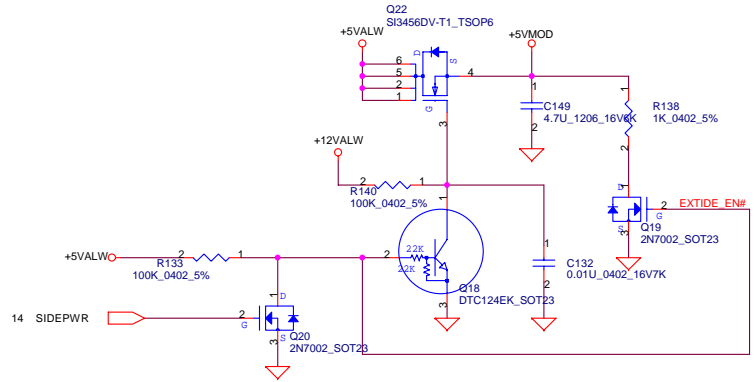
Place caps. near HDD CONN.



CD-ROM Connector



Place caps. near CDROM CONN.

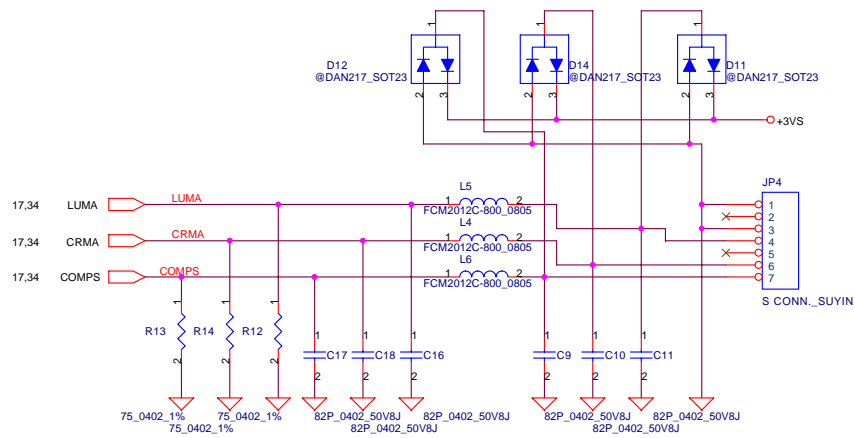


SI3456DV: N CHANNEL
VGS: 4.5V, RDS: 65 mOHM
Id(MAX): 5.1A
VGS,+20V

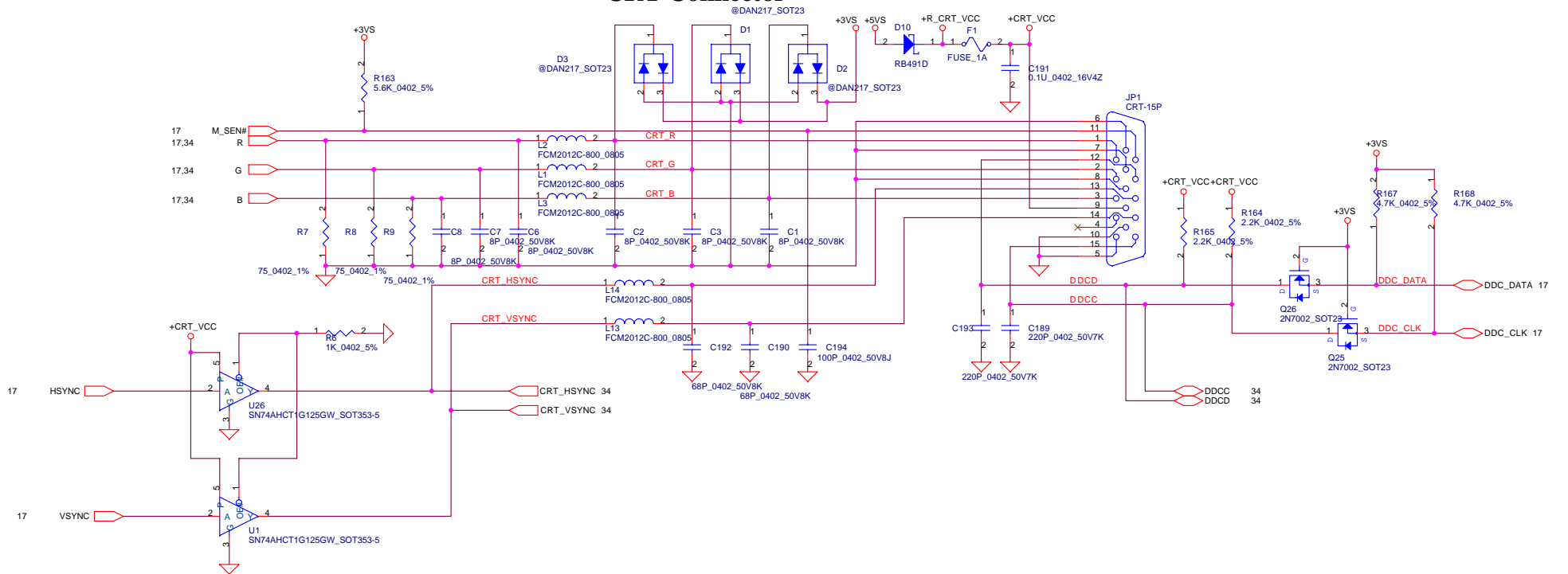
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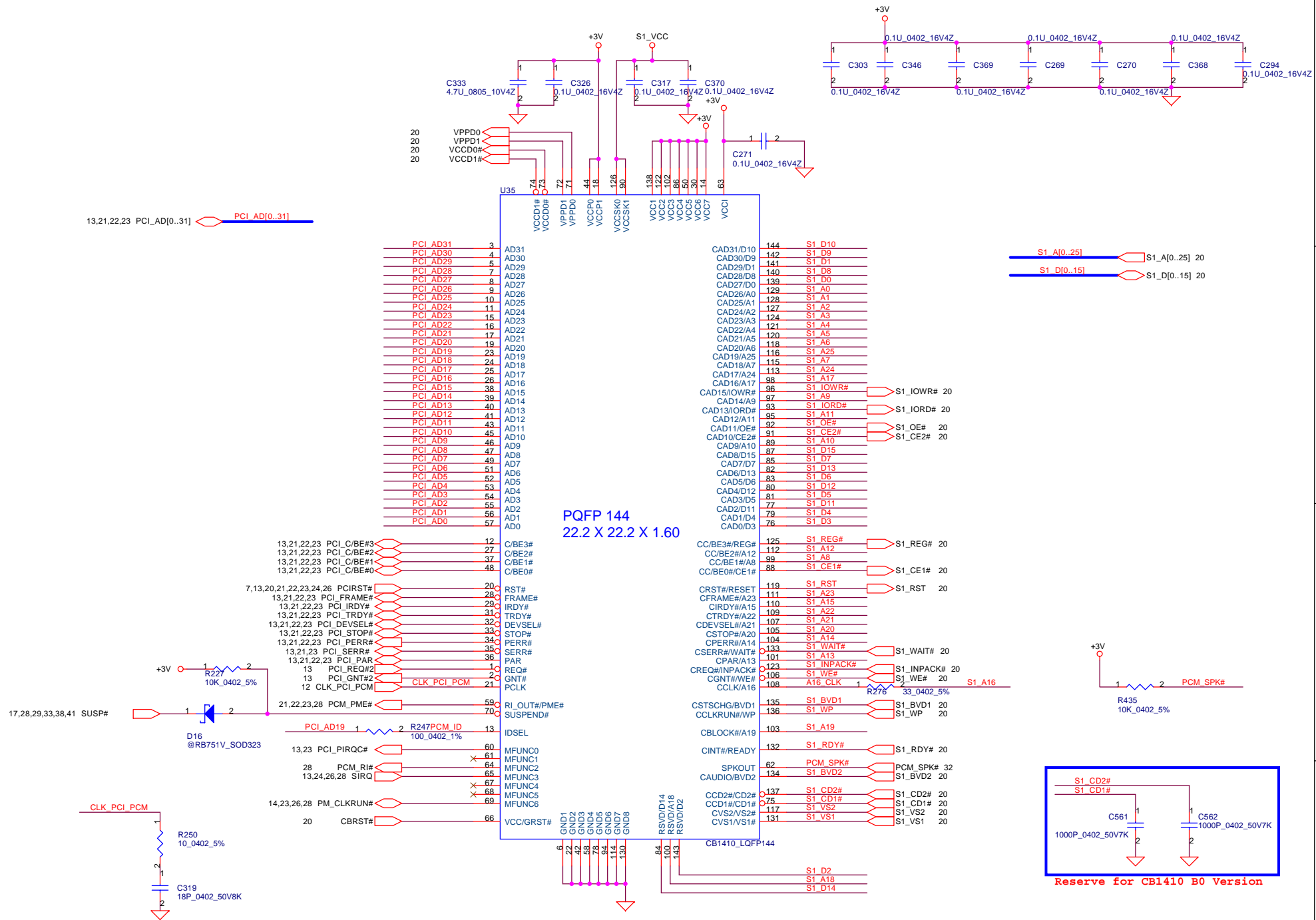


CRT Connector



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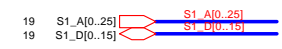
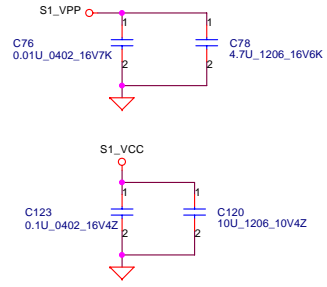
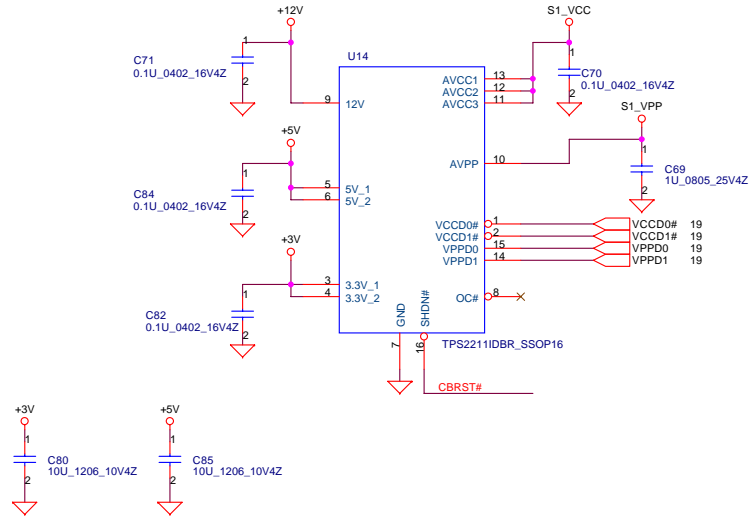
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Compal Electronics, Inc.

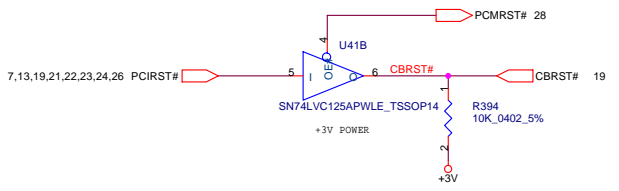
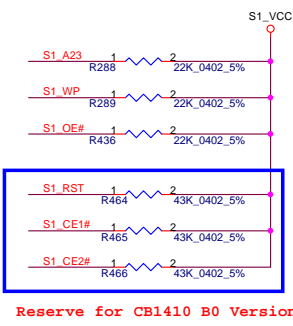
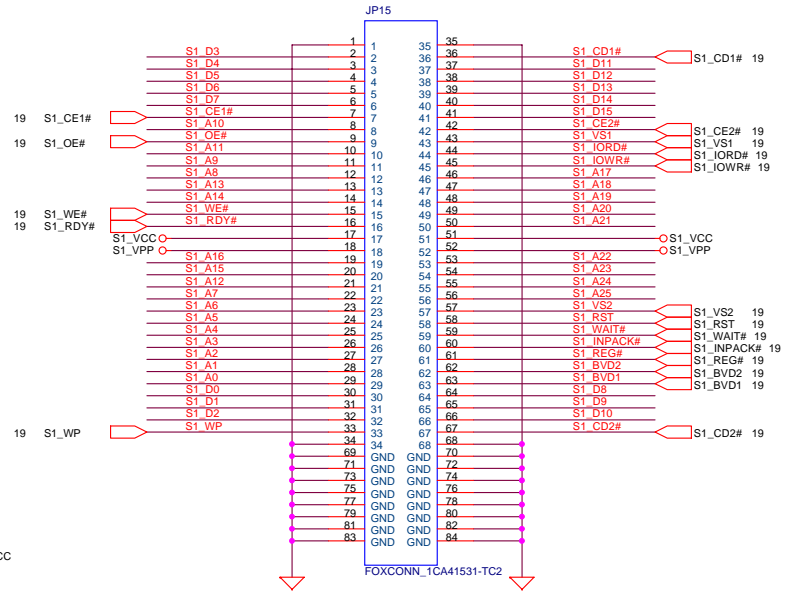
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PCMCIA Power Controller

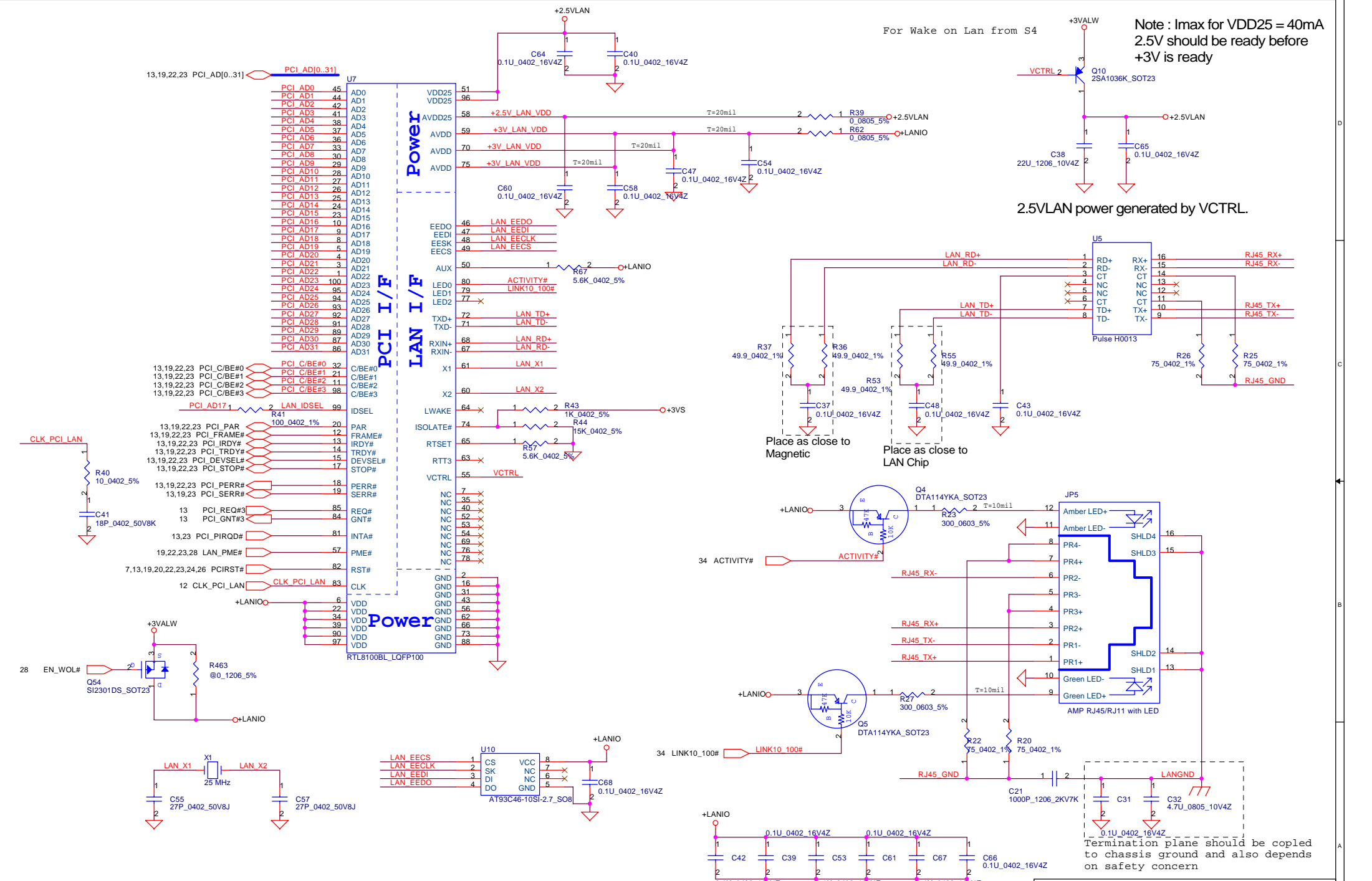


CardBus Socket



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For Wake on Lan from S4

Note : I_{max} for VDD25 = 40mA
2.5V should be ready before
+3V is ready

2.5VLAN power generated by VCTRL.

Place as close to
Magnetic

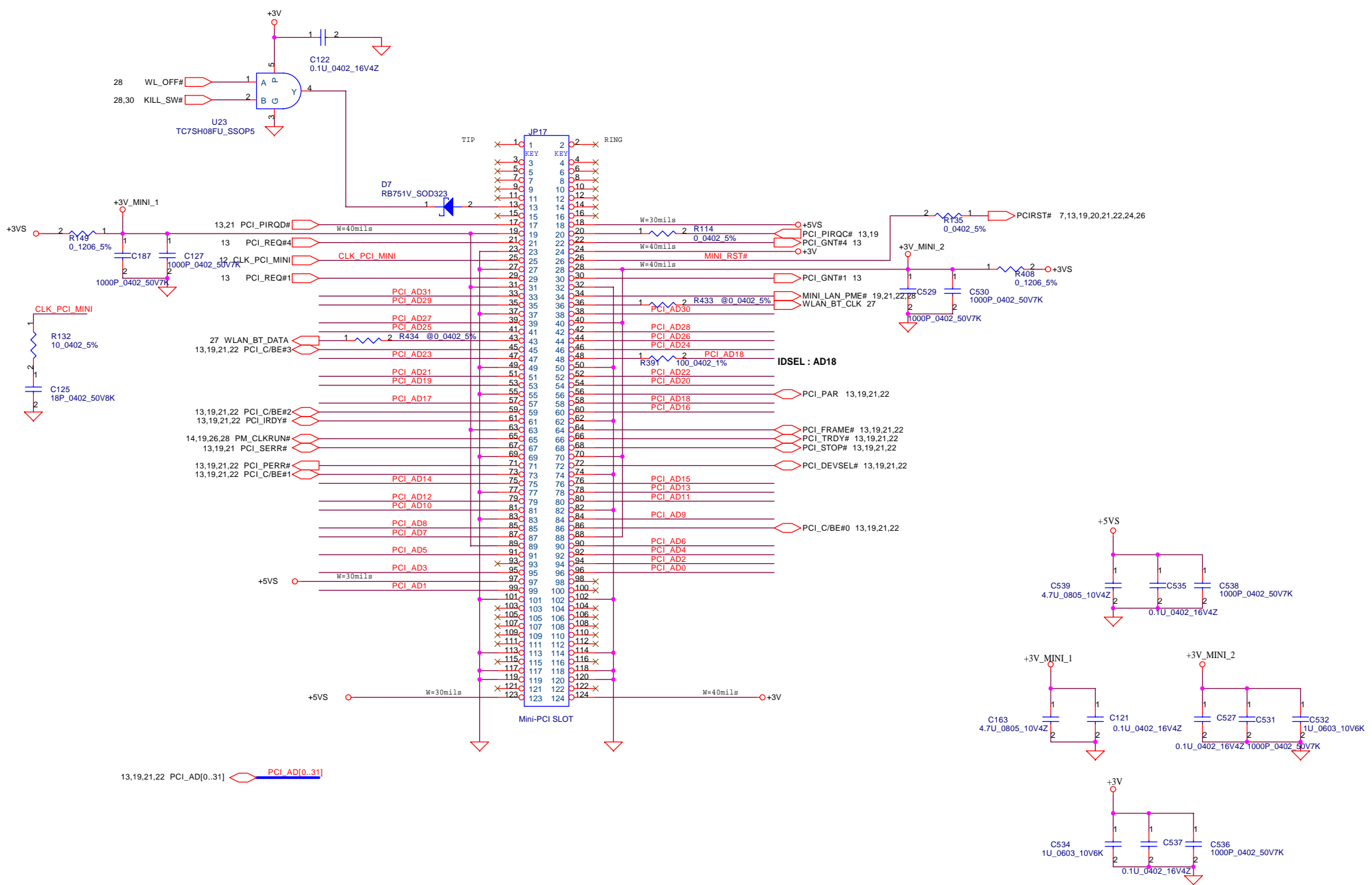
Place as close to
LAN Chip

Termination plane should be copied
to chassis ground and also depends
on safety concern

Compal Electronics, Inc.

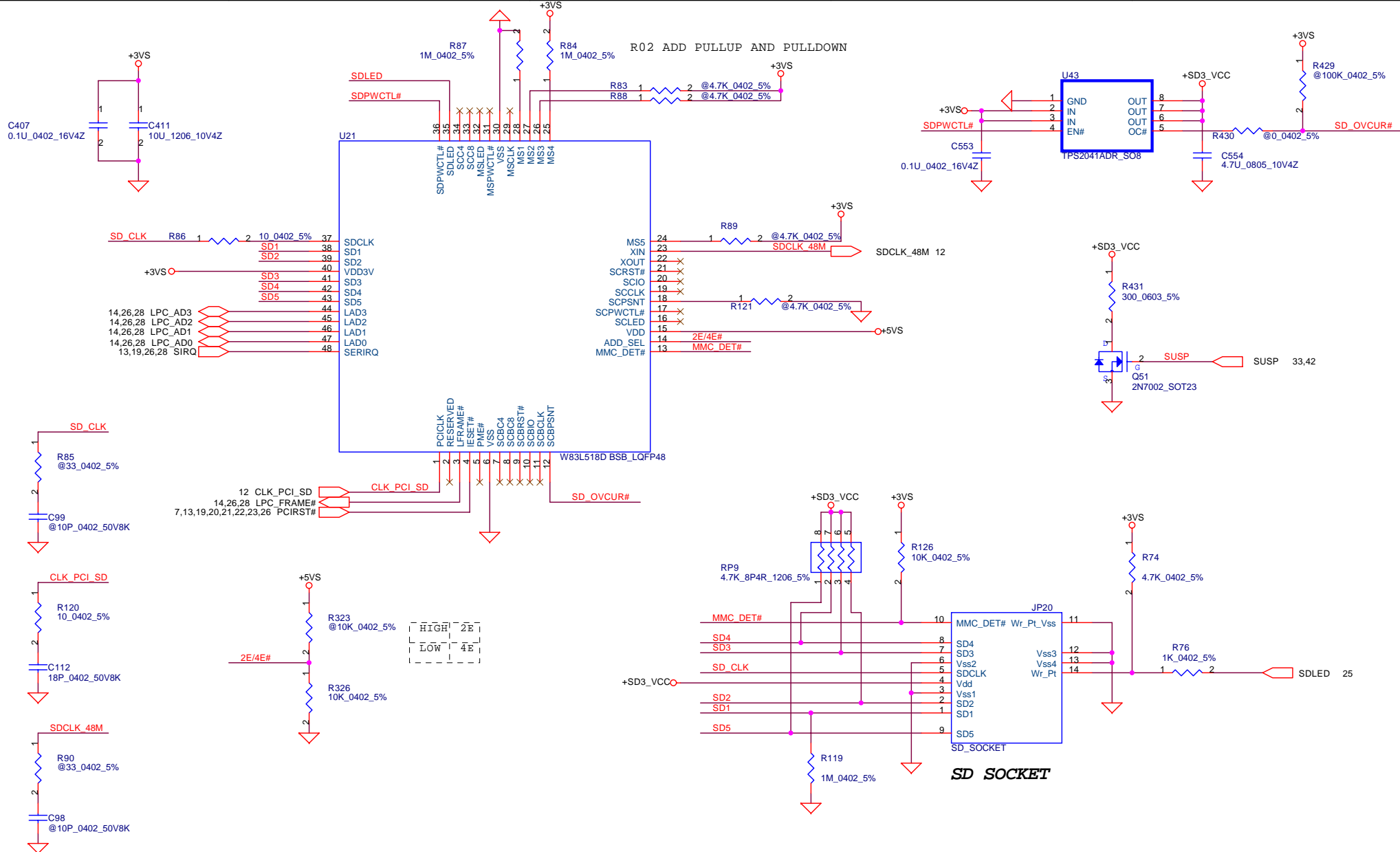
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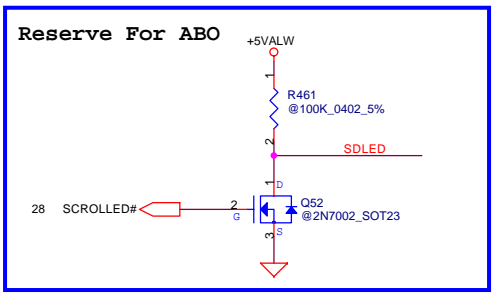
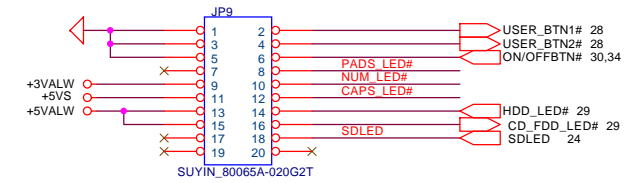
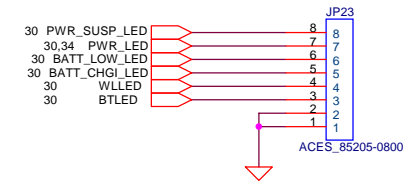
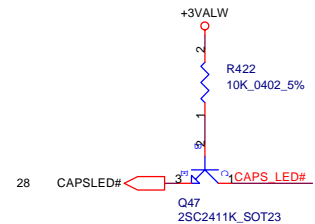
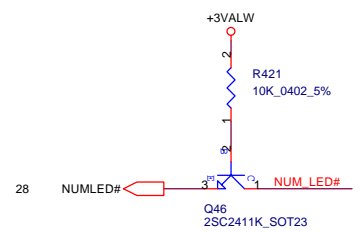
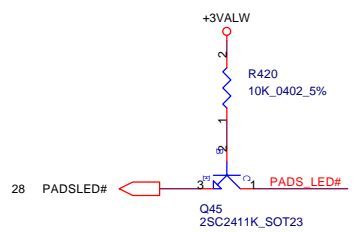
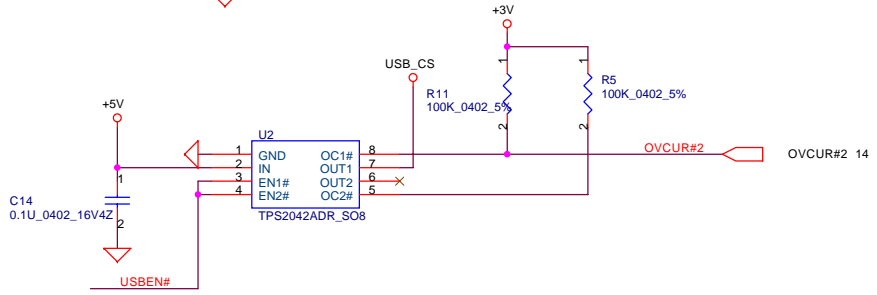
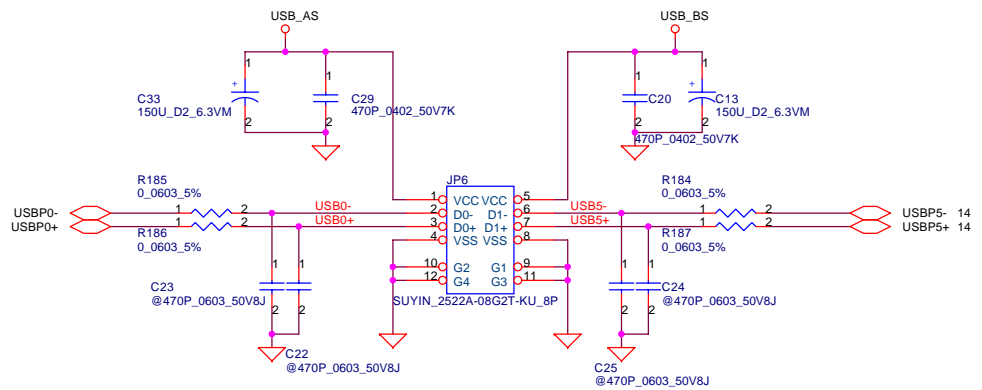
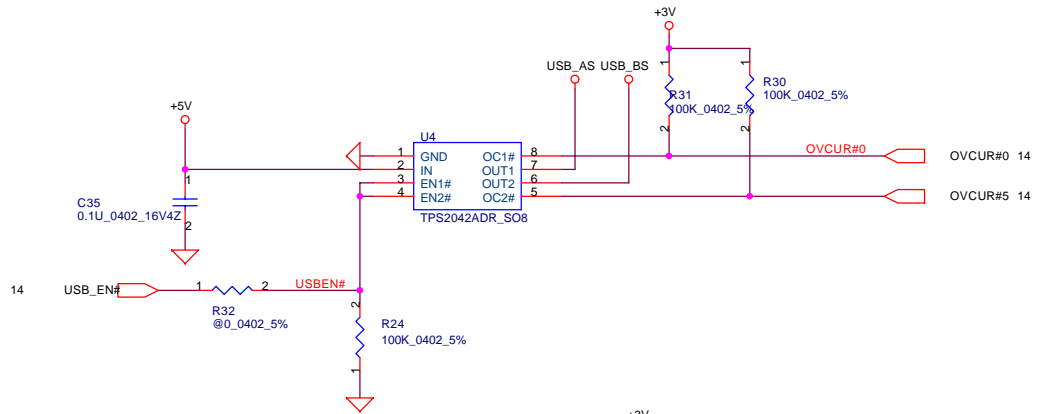
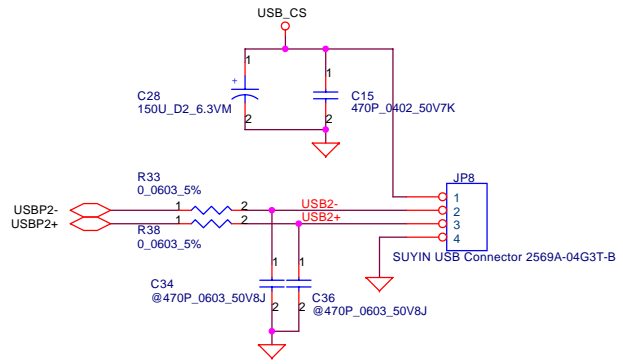
Compal Electronics, Inc.		
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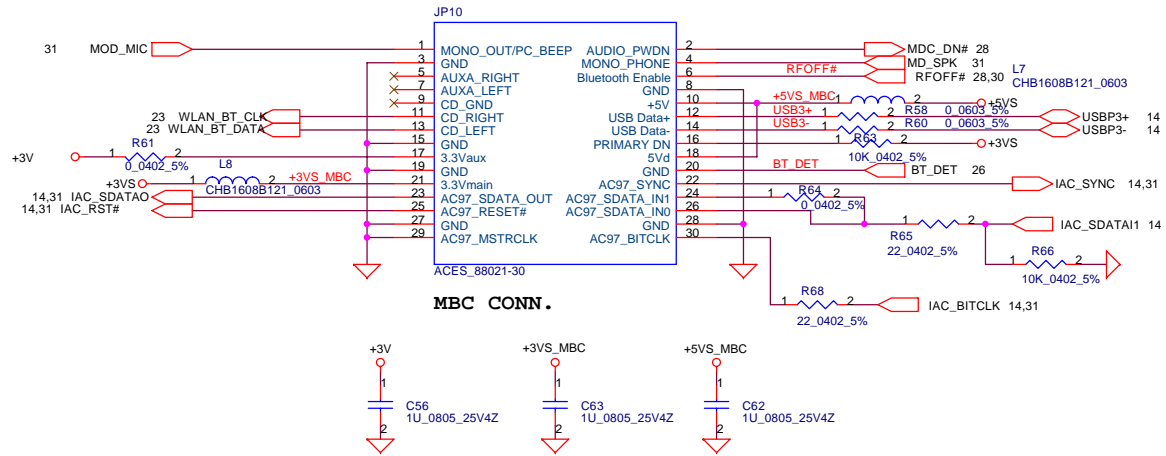
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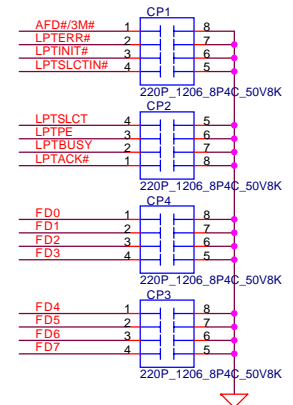
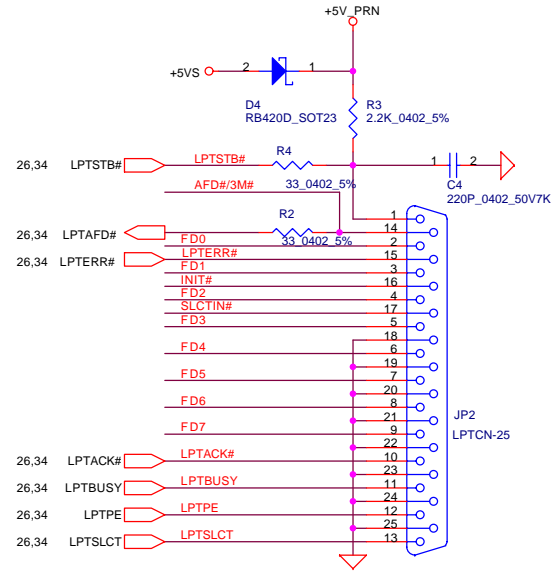
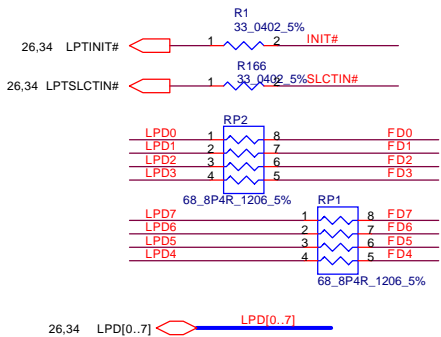
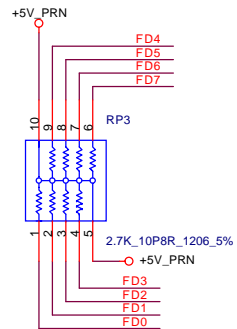
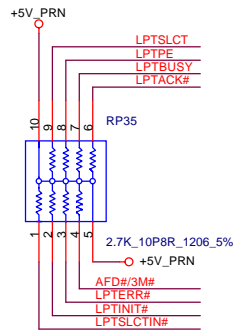


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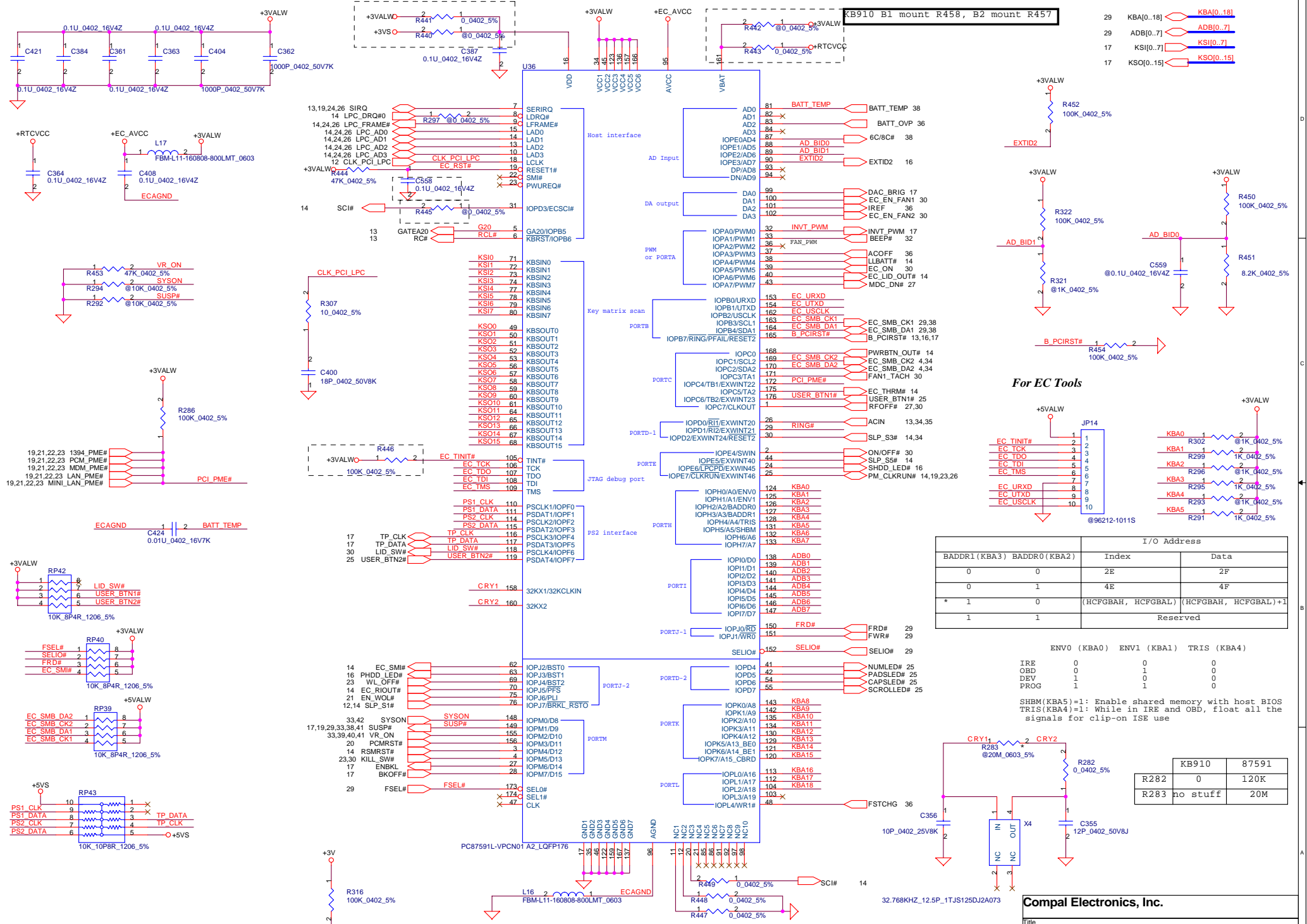
PARALLEL PORT



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KB910 B1 mount R458, B2 mount R457

- 29 KBA[0..18] KBA[0..18]
- 29 ADB[0..7] ADB[0..7]
- 17 KSI[0..7] KSI[0..7]
- 17 KSO[0..15] KSO[0..15]

For EC Tools

		I/O Address	
BADDR1 (KBA3)	BADDR0 (KBA2)	Index	Data
0	0	2E	2F
0	1	4E	4F
* 1	0	(HCFGBAH, HCFGBAL)	(HCFGBAH, HCFGBAL)+1
1	1	Reserved	

ENV0 (KBA0)	ENV1 (KBA1)	TRIS (KBA4)
IRE 0	0	0
OBDD 0	1	0
DEVI 1	0	0
PROG 1	0	0

SHBM(KBA5)=1: Enable shared memory with host BIOS
 TRIS(KBA4)=1: While in IRE and OBDD, float all the signals for clip-on ISE use

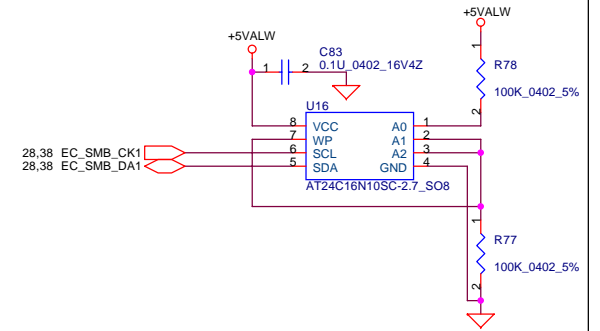
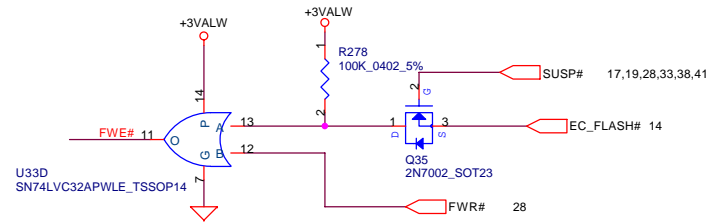
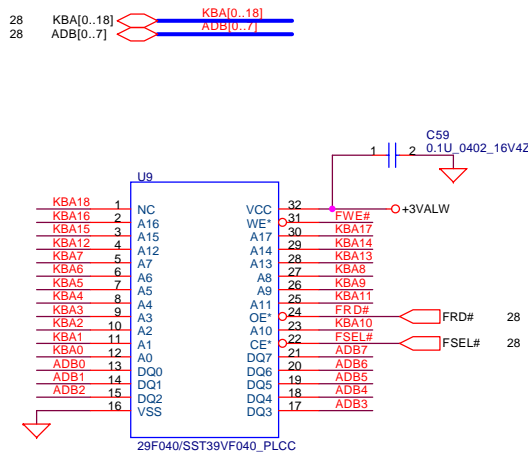
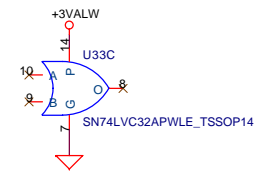
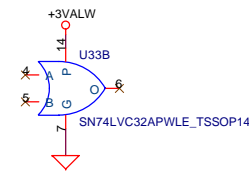
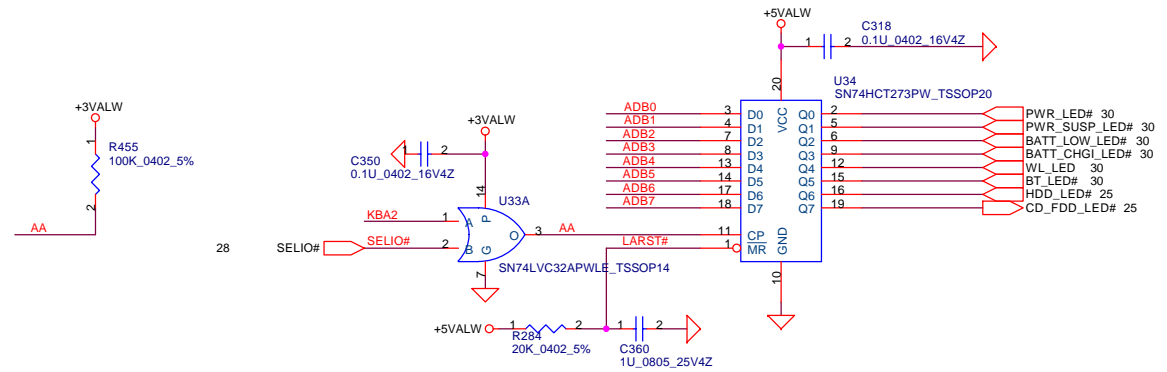
	KB910	87591
R282	0	120K
R283	no stuff	20M

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Title
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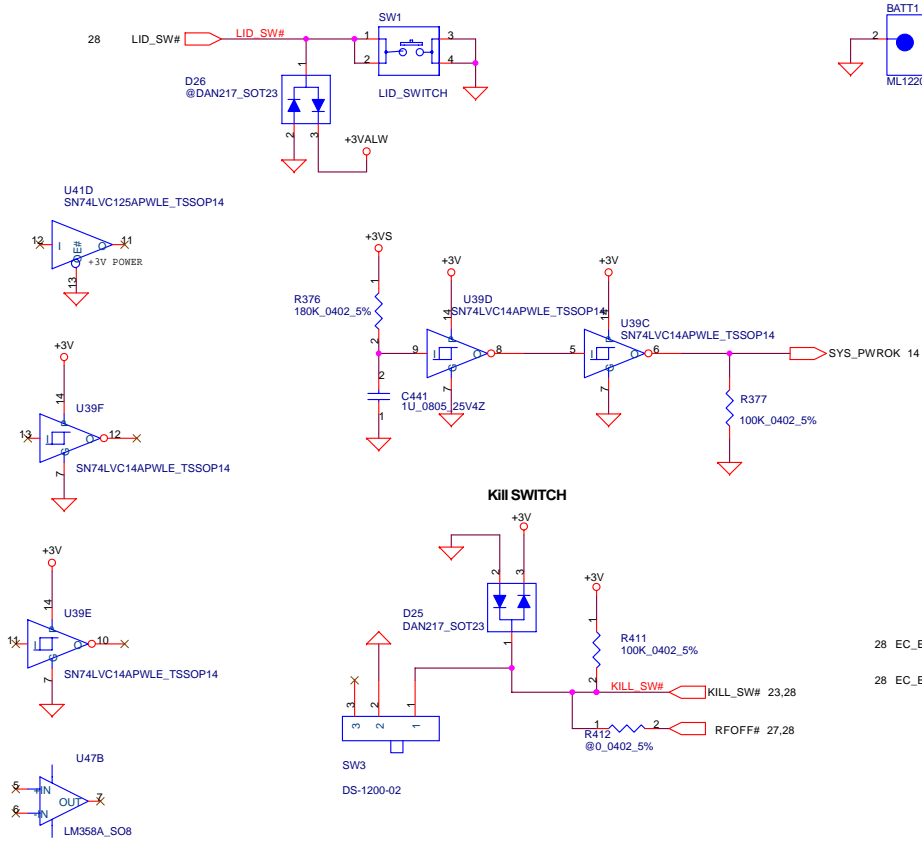
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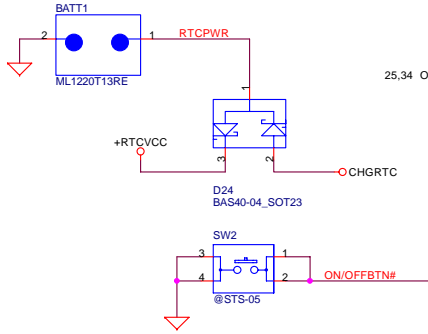
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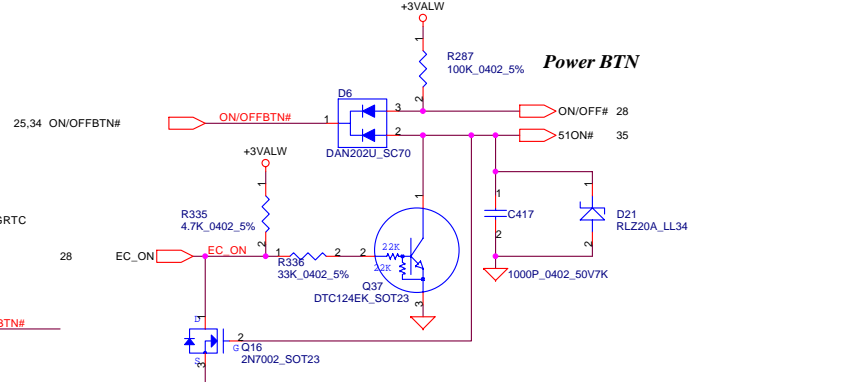
Power ON Circuit



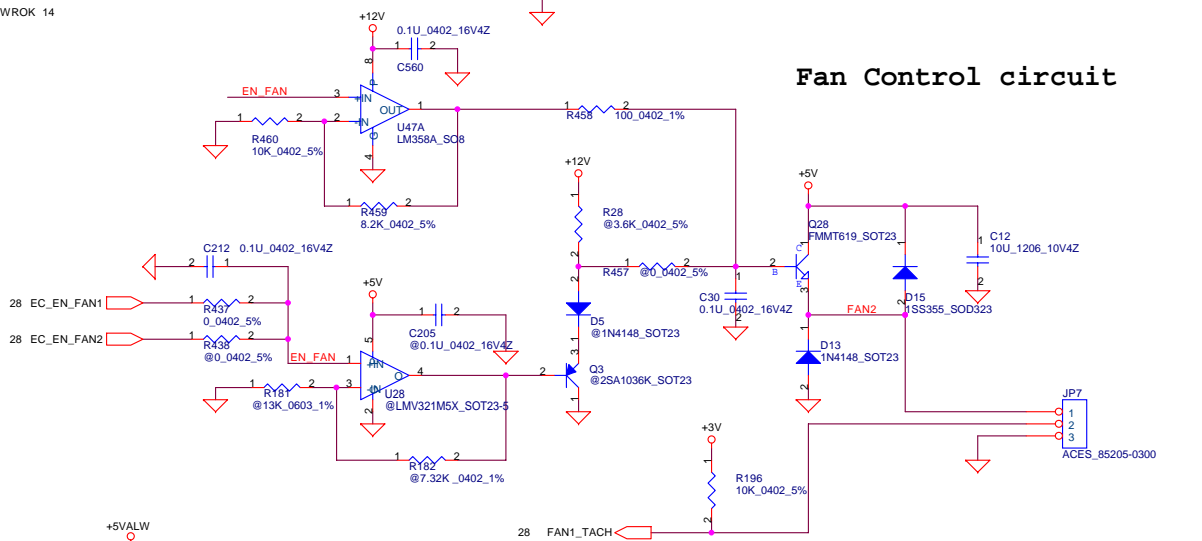
RTC Battery



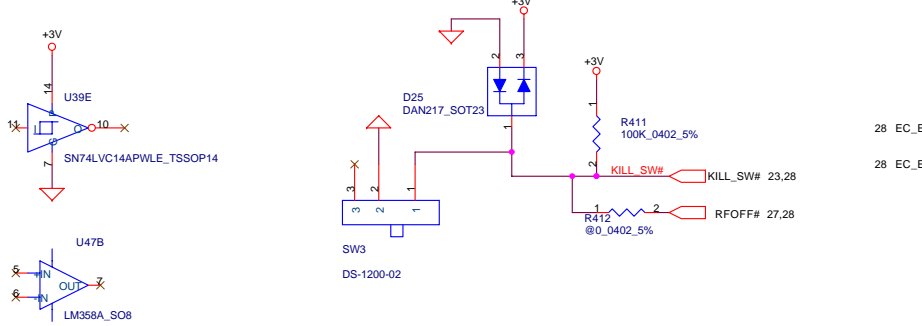
Power BTN



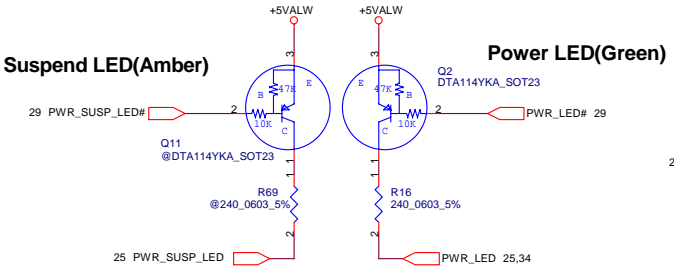
Fan Control circuit



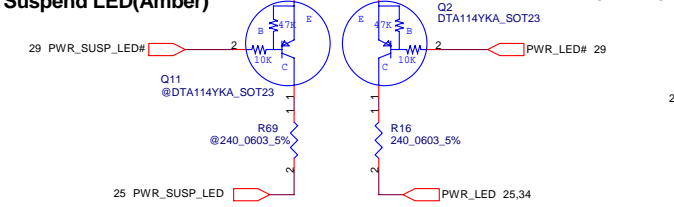
KILL SWITCH



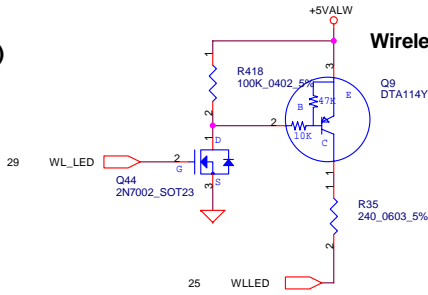
Suspend LED(Amber)



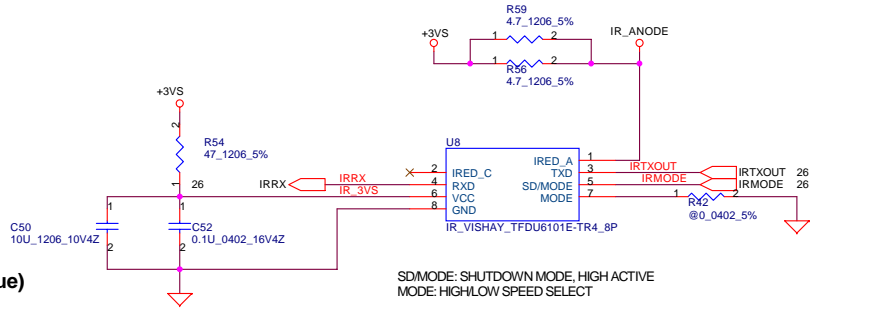
Power LED(Green)



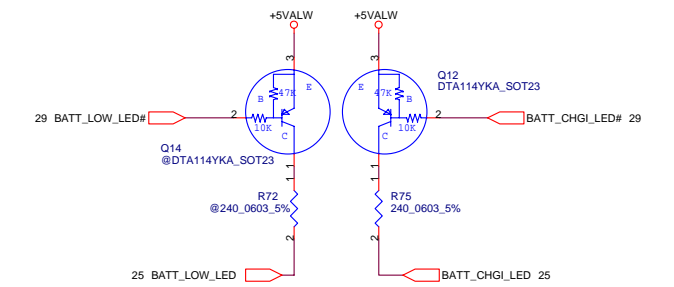
Wireless LED(Amber)



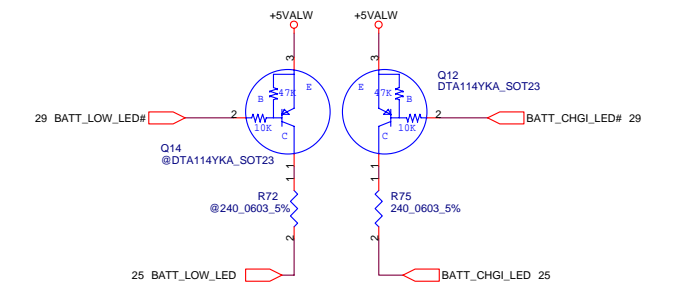
FIR Module



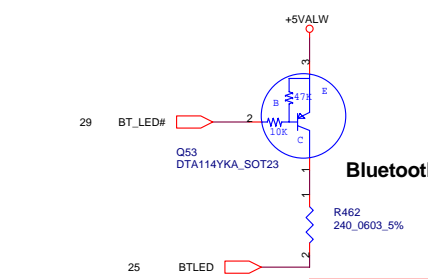
BATT Low LED(Amber)



BATT Charge LED(Green)



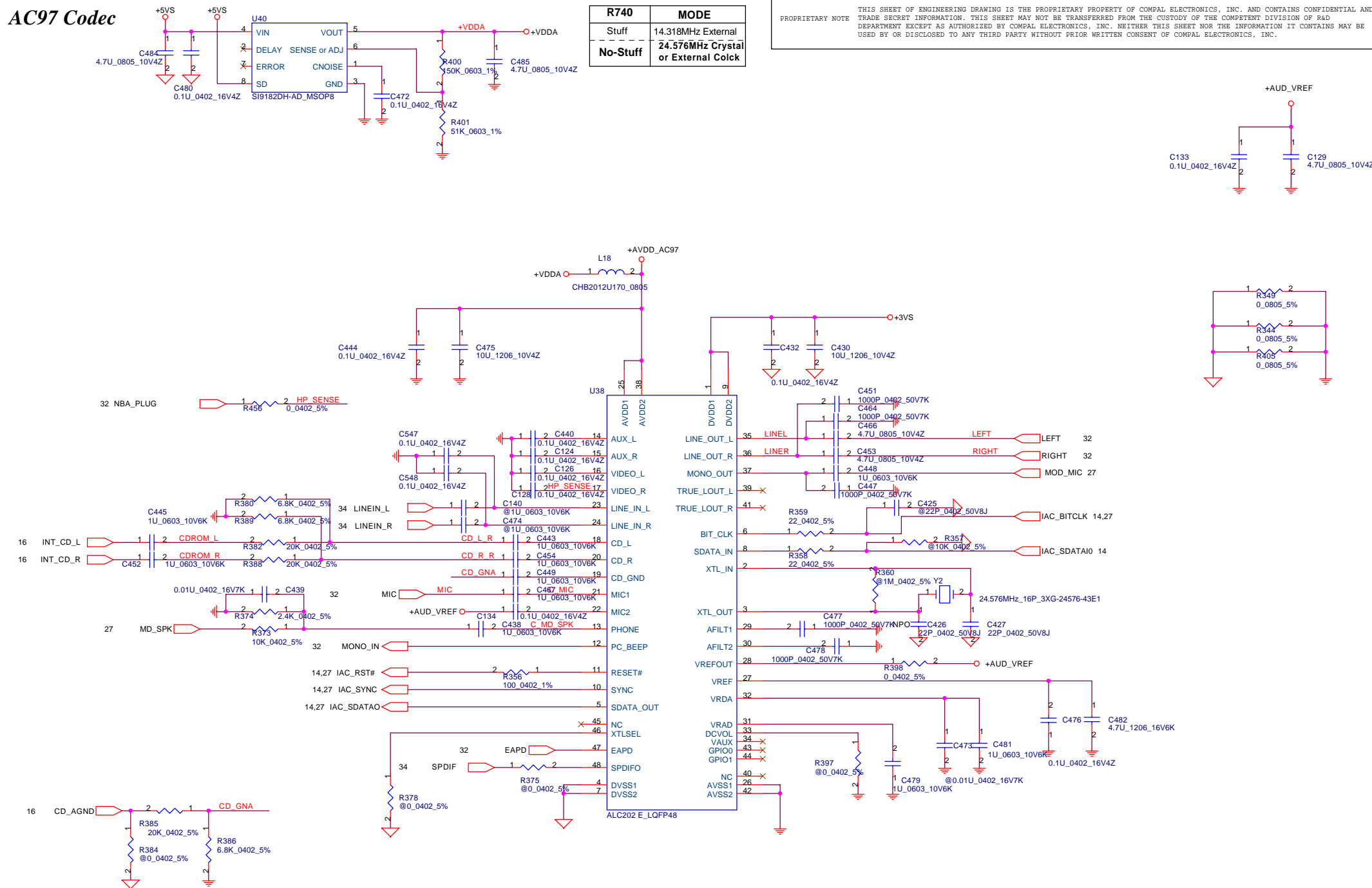
Bluetooth LED(Blue)



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AC97 Codec

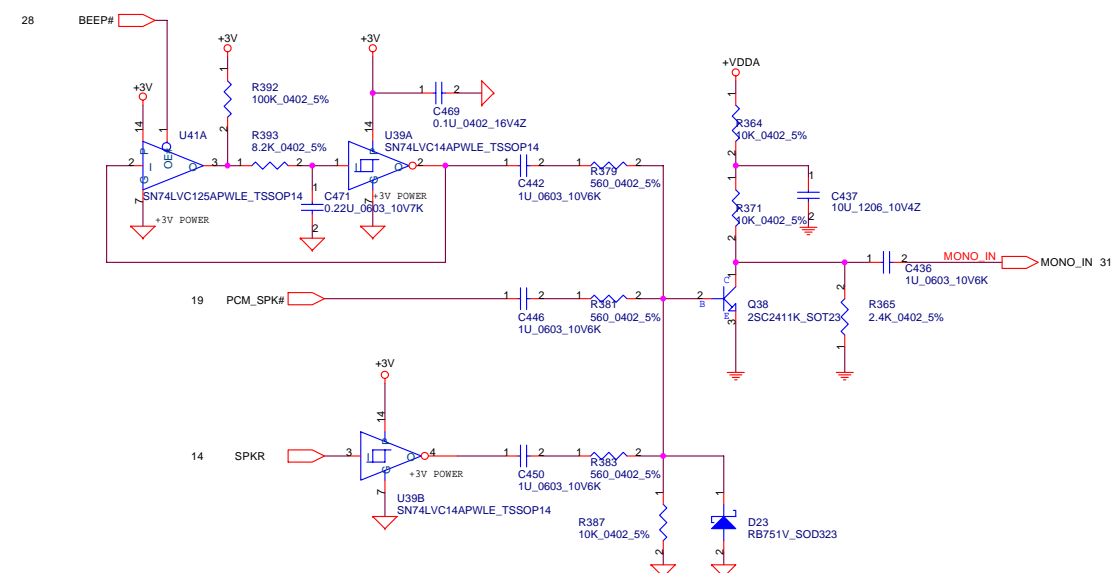
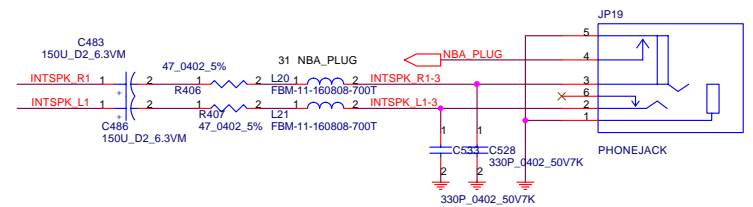
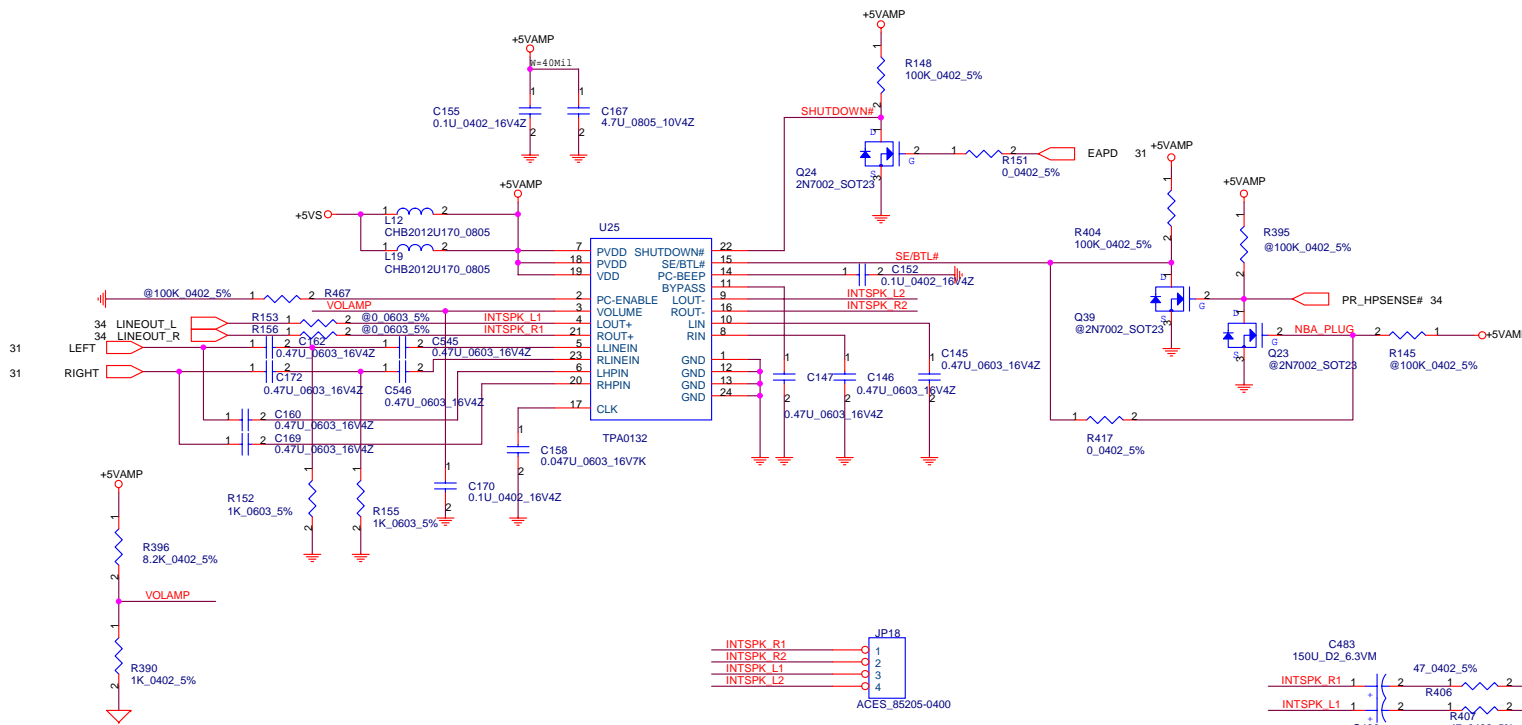


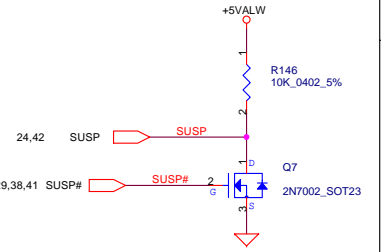
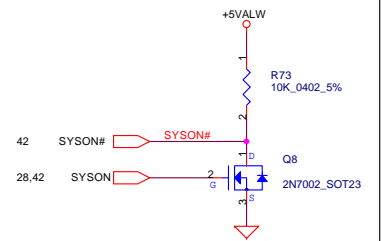
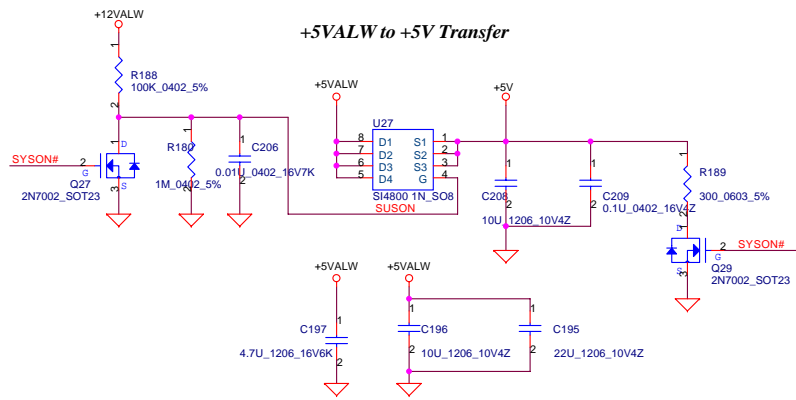
R740	MODE
Stuff	14.318MHz External
No-Stuff	24.576MHz Crystal or External Colck

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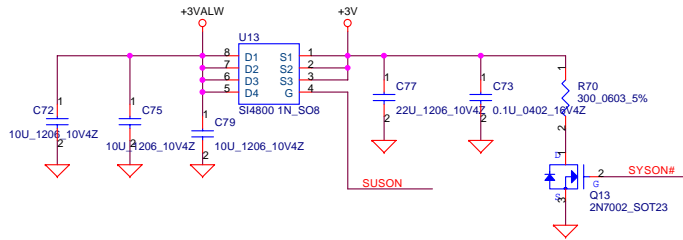
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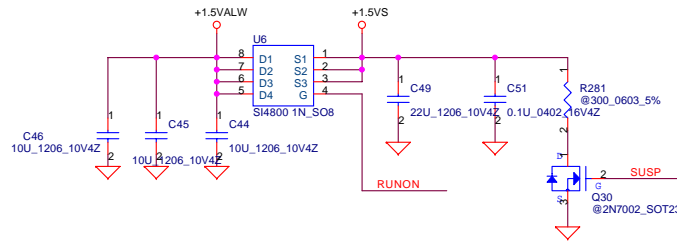




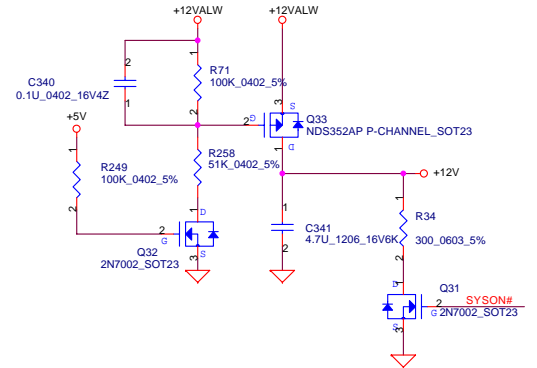
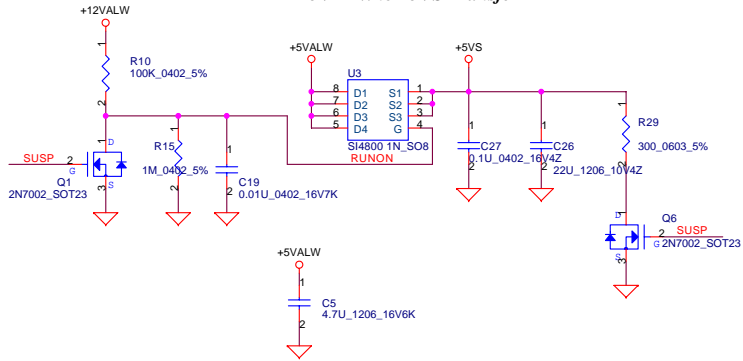
+3VALW to +3V Transfer



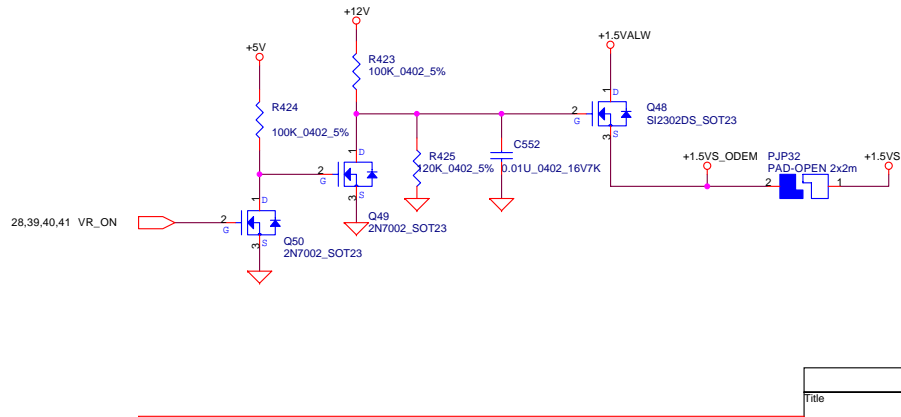
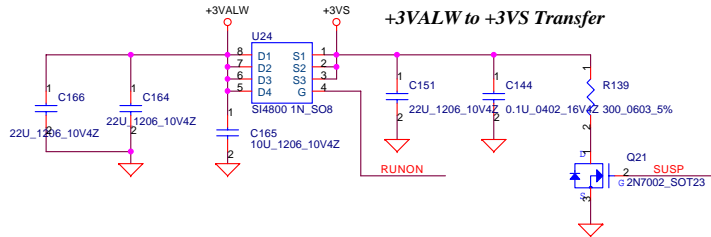
+1.5VALW to +1.5VS Transfer



+5VALW to +5VS Transfer

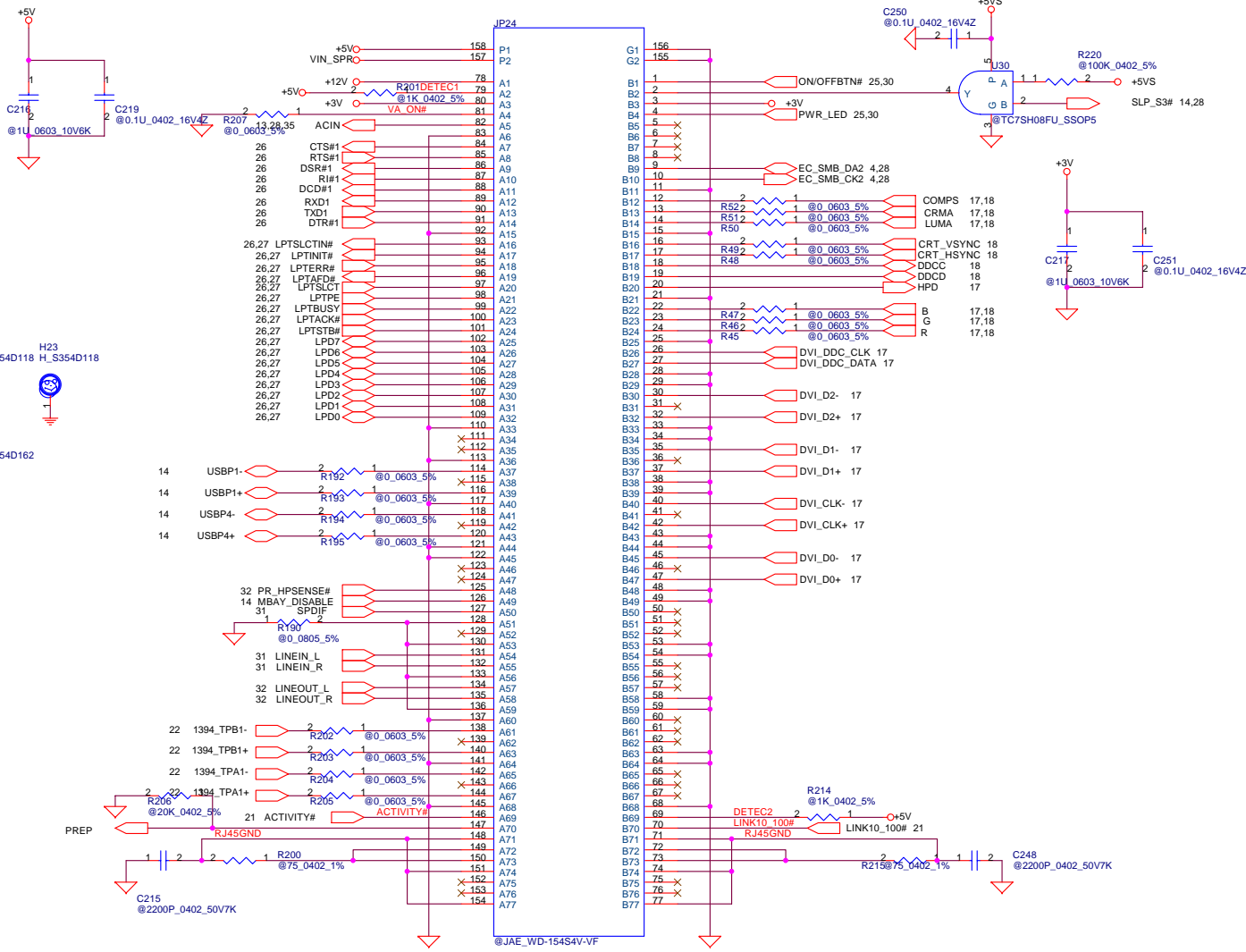
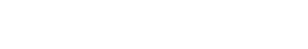
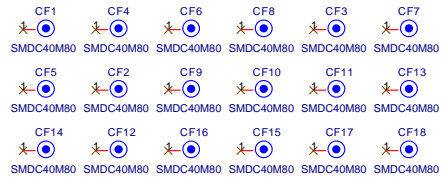


+3VALW to +3VS Transfer



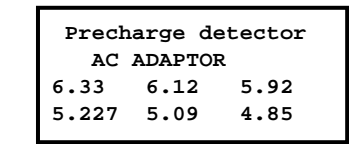
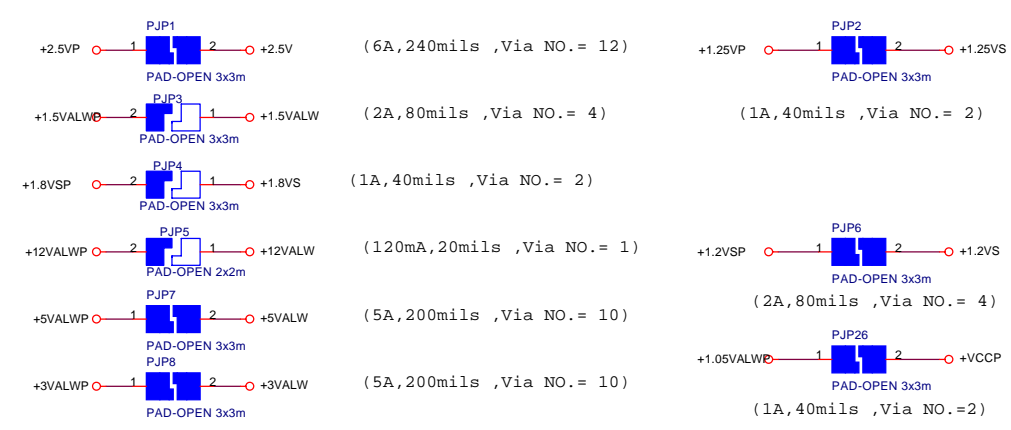
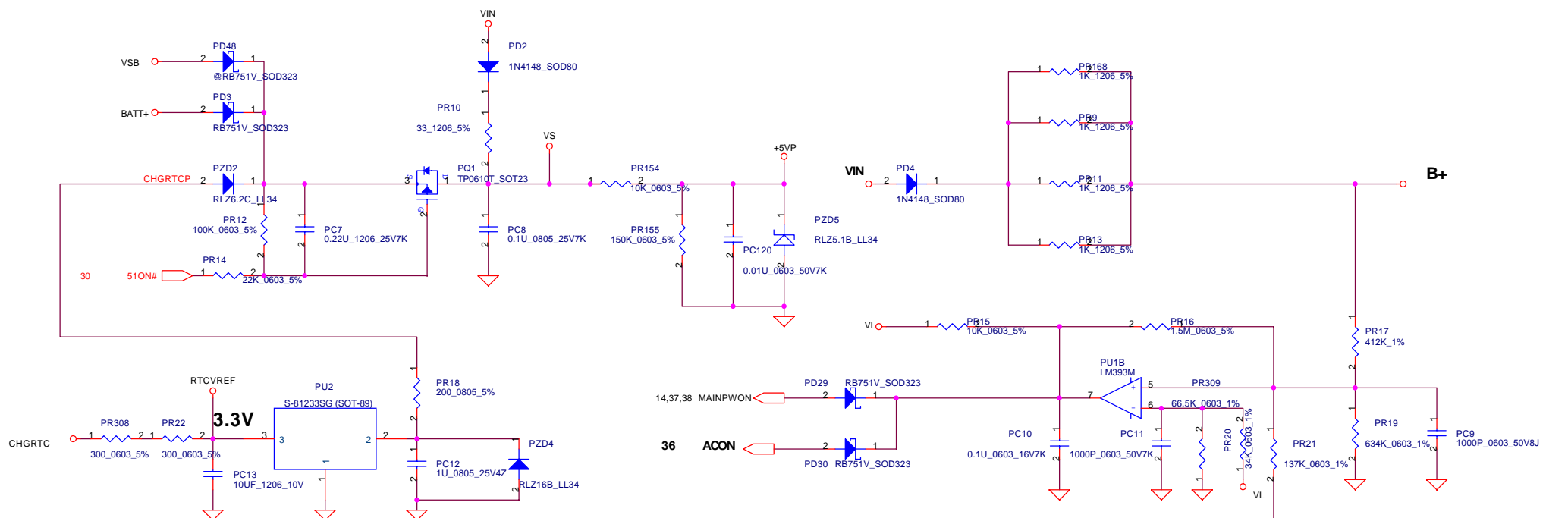
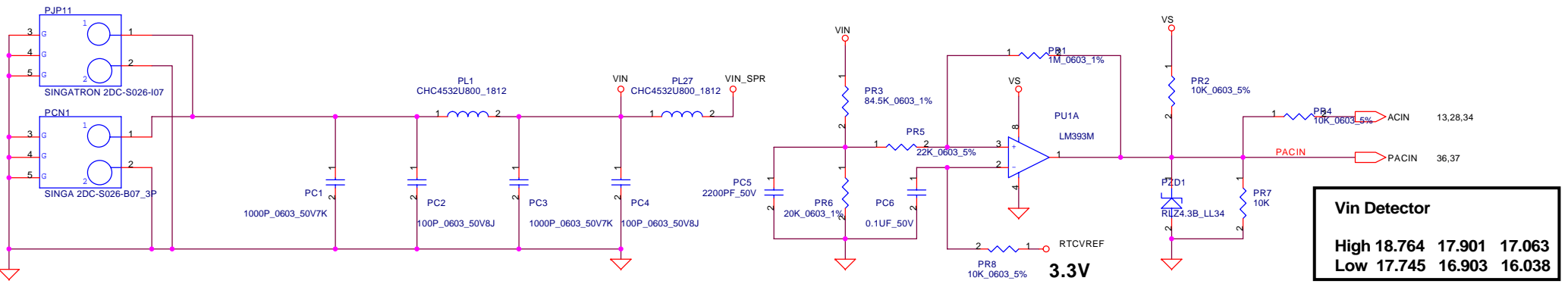
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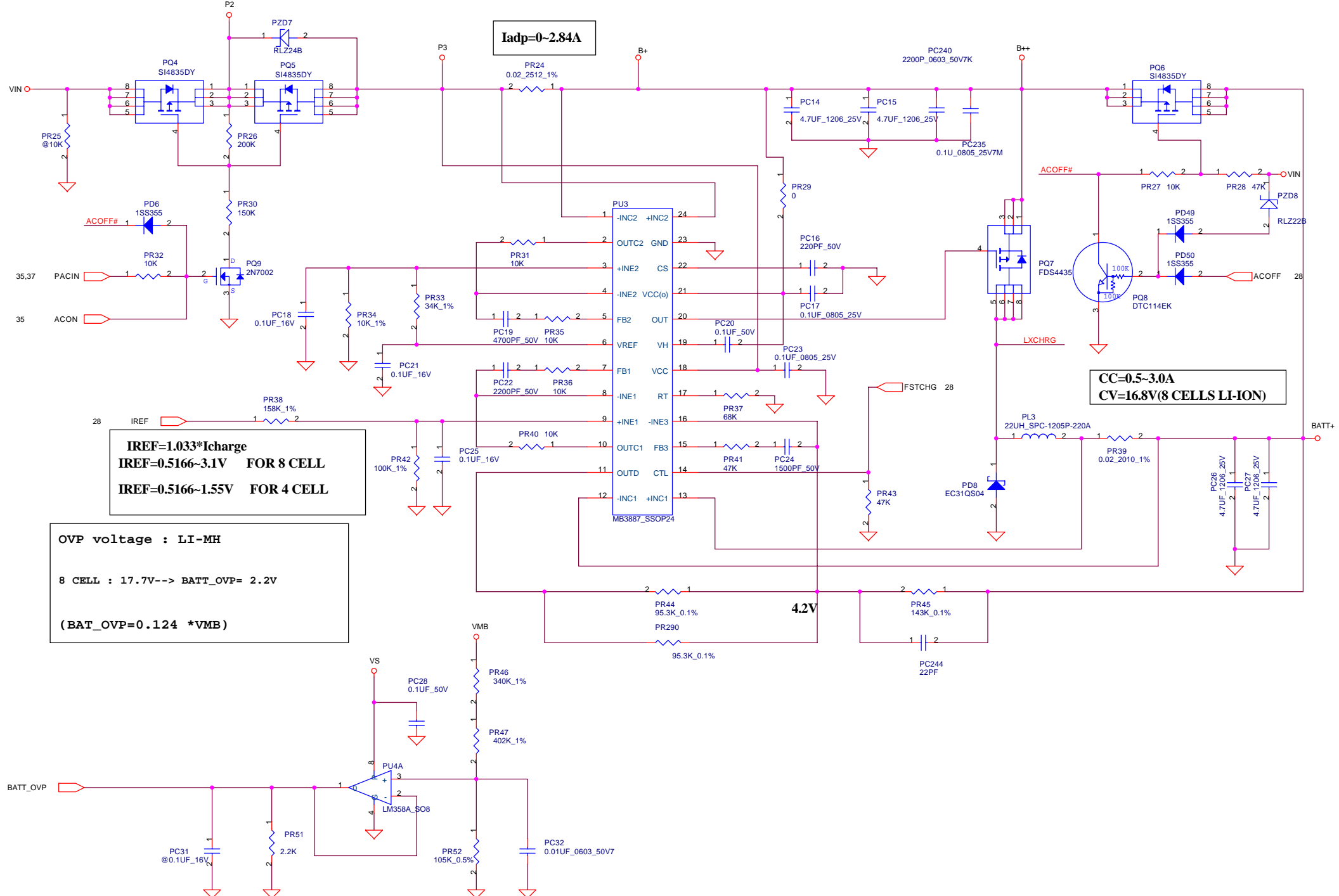


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IREF=1.033*Icharge
IREF=0.5166-3.1V FOR 8 CELL
IREF=0.5166-1.55V FOR 4 CELL

OVP voltage : LI-MH
8 CELL : 17.7V--> BATT_OVP= 2.2V
(BAT_OVP=0.124 *VMB)

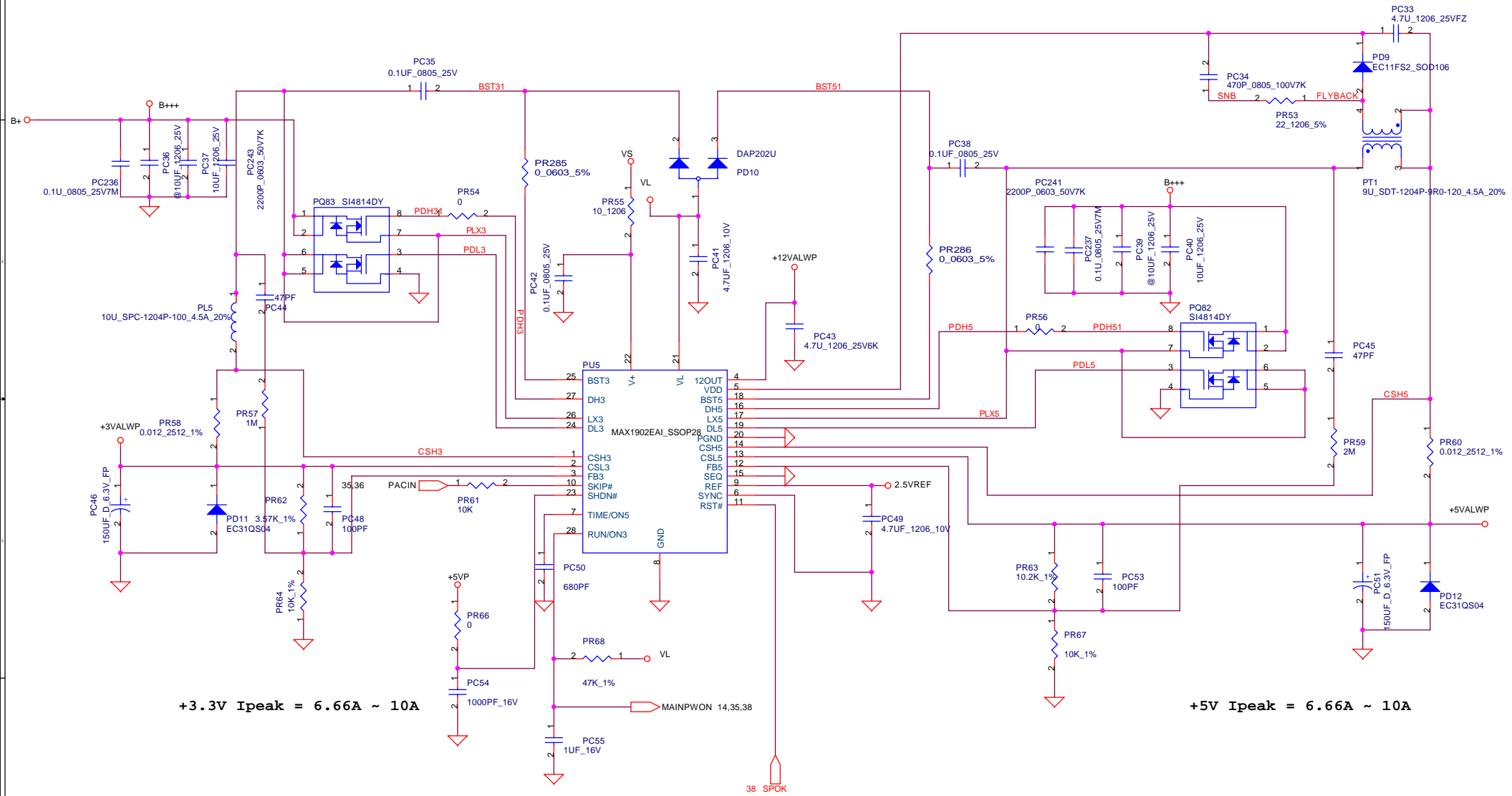
Iadp=0-2.84A

CC=0.5-3.0A
CV=16.8V(8 CELLS LI-ION)

4.2V

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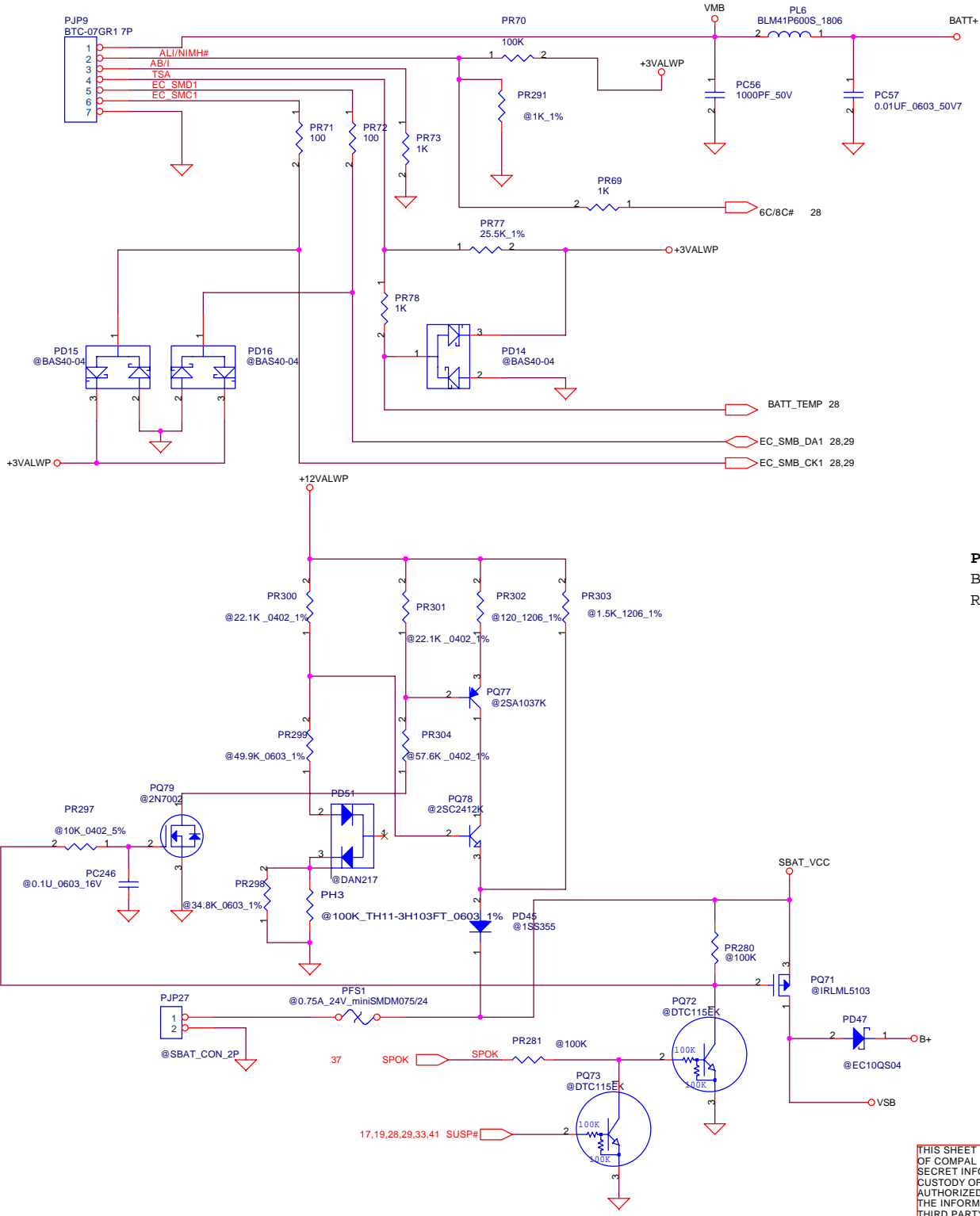


+3.3V Ipeak = 6.66A ~ 10A

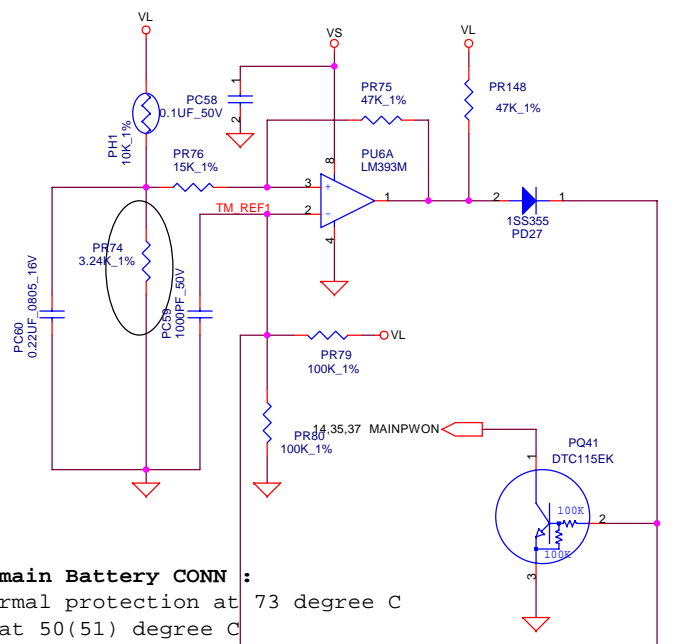
+5V Ipeak = 6.66A ~ 10A

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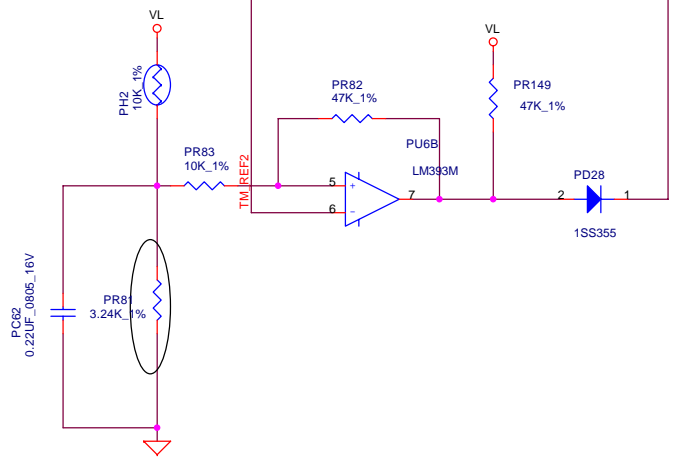
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PH1 under CPU bottom side :
 CPU thermal protection at 82 degree C
 Recovery at 48 degree C

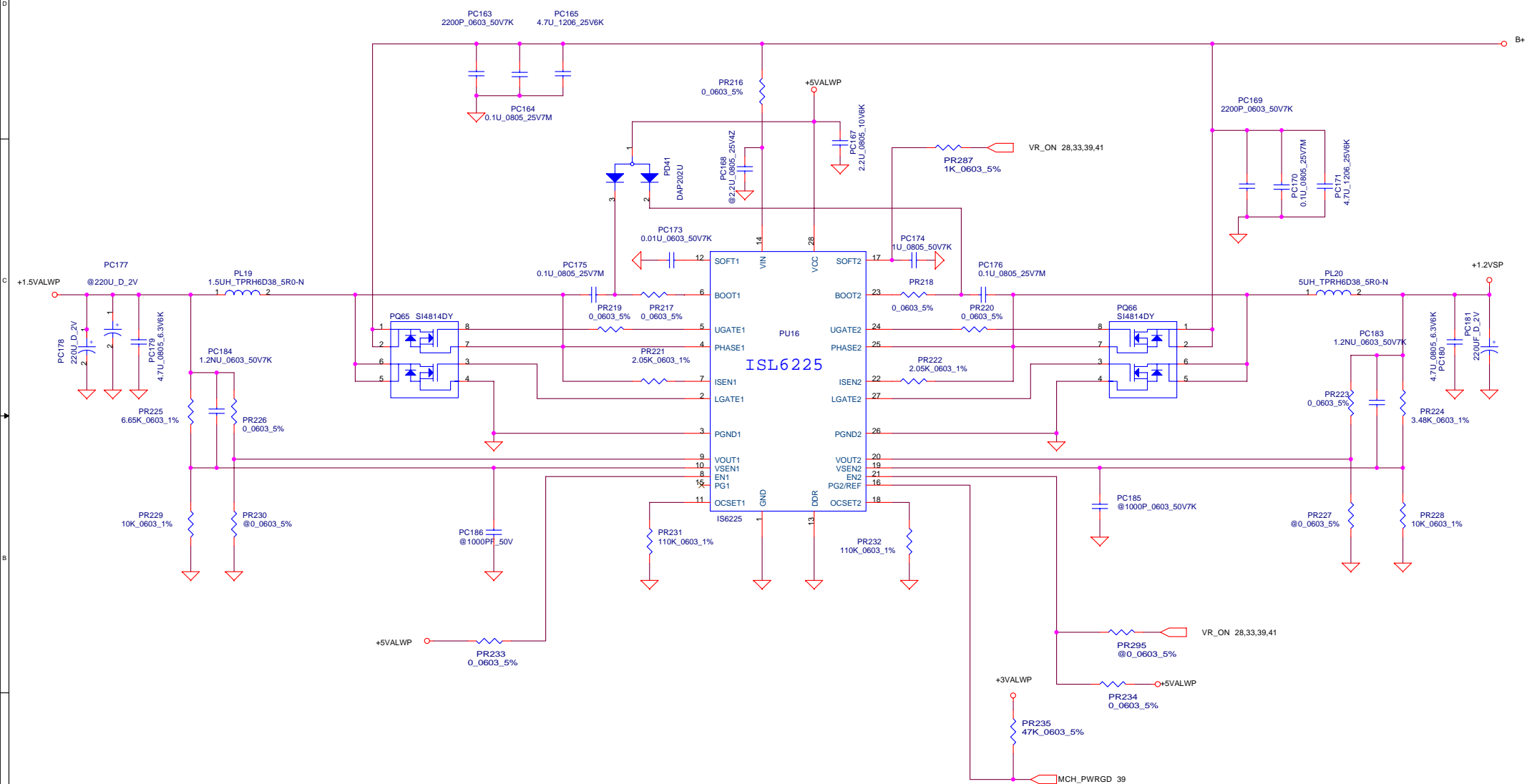


PH2 near main Battery CONN :
 BAT. thermal protection at 73 degree C
 Recovery at 50(51) degree C



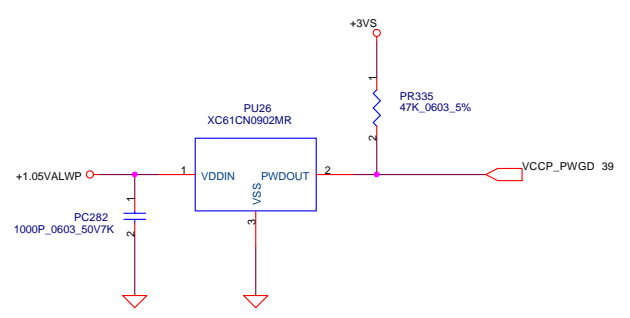
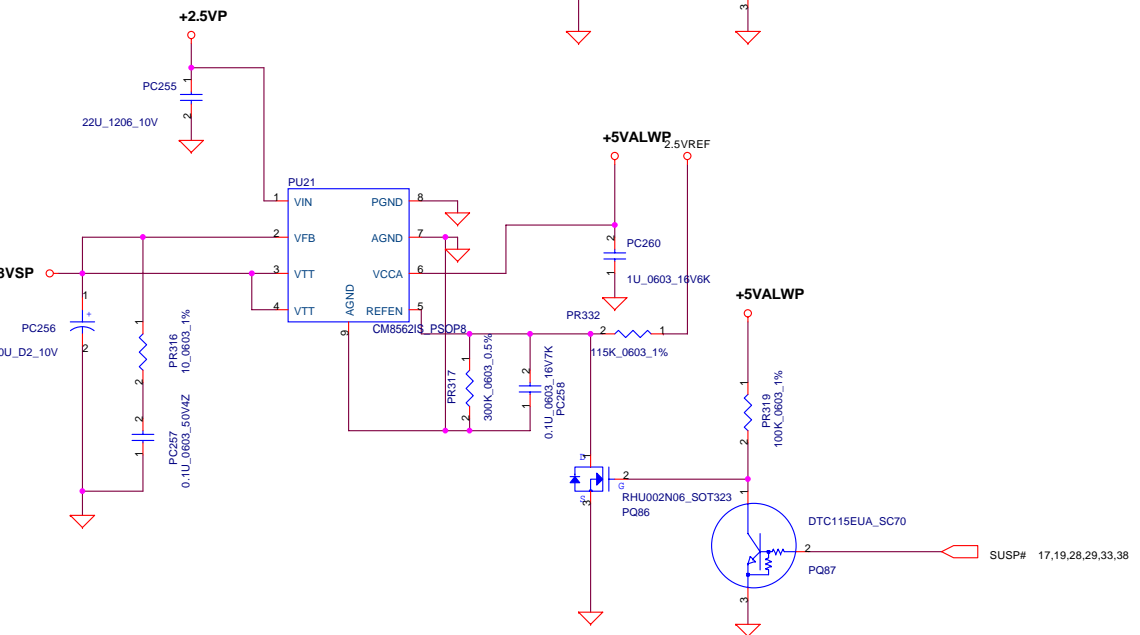
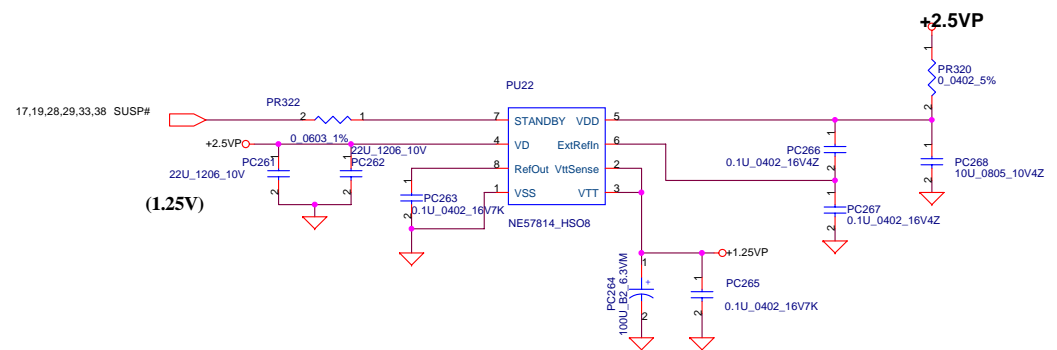
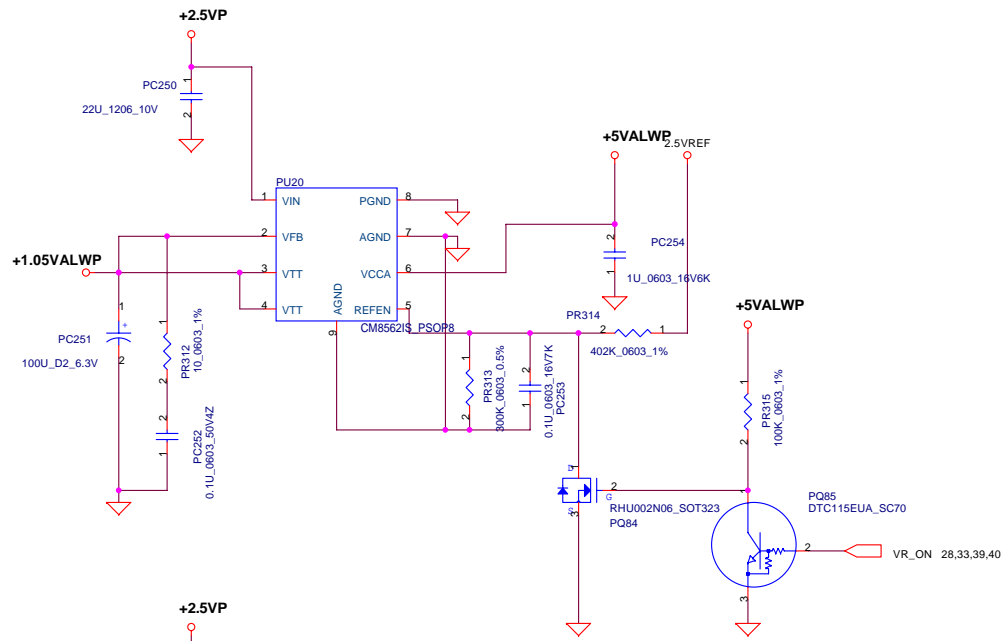
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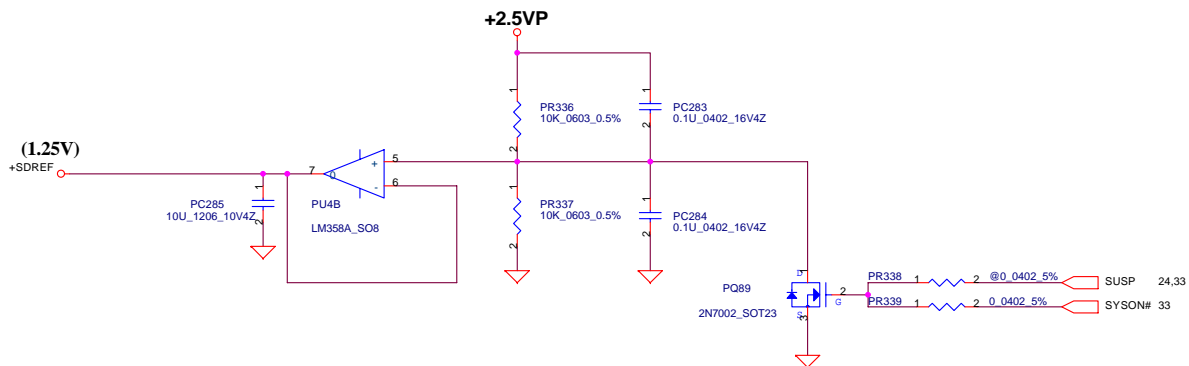
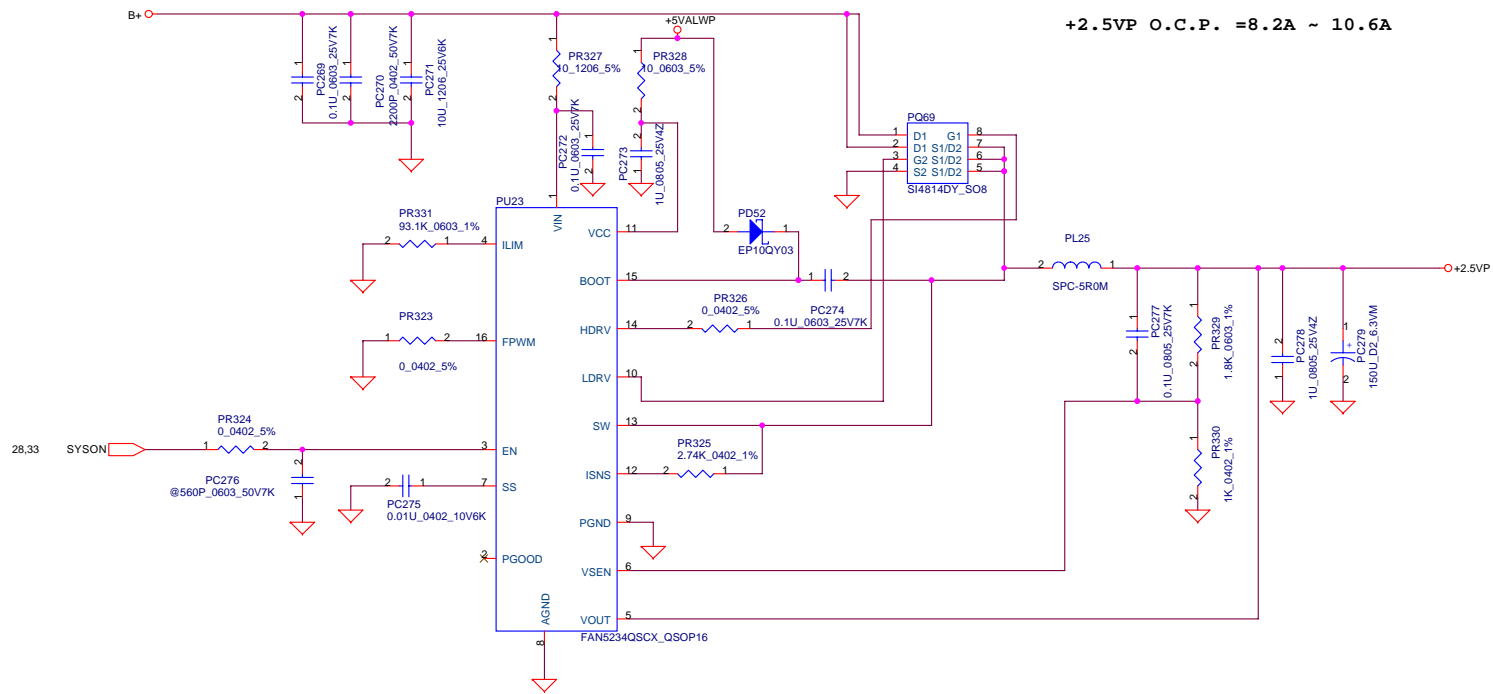
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Version change list (P.I.R. List)

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	VER	Phase
1.	IDE reset signal level error	Change signal level from 3V to 5V		P16	Delete D8,D9,R144,R147 Add U44,U45		DVT
2.	LED light not enough	Change VCC from +3VALW to +5VALW		P25	Add Q45,Q46,Q47 Add R420,R421,R422		DVT
3.	Change flash ROM size	Change from 4Mb to 8Mb		P29	Delete U9 Add U42		DVT
4.	Change flash ROM size	Change from 8Mb to 4Mb		P29	Delete U42, C549, R419, JP28 Add U9, C59		PVT
5.	Change USB Power	Change USB Power from +5VALW to +5V		P25	Change U2.2, U4.2 form +5VALW to +5V		PVT
6.	Noise when system boot	Change PCM_SPK# sequence		P19	Add R435 on PCM_SPK# and pull up to +3V		PVT
7.	Some CF card can't read	Pull up S1_OE#		P20	Add R436 on S1_OE# to pull up to S1_VCC		PVT
8.	Change FAN Connector	Change FAN Connector		P30	Change FAN Connector JP7 from 4-Pin to 3-Pin		PVT
9.	Add Bluetooth Detect Pin	Add Bluetooth Detect Pin		P30	Add Bluetooth Detect Pin form Super I/O GPIO20 to JP10 Pin20		PVT

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

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	VER	Phase
1		to decrease inrushing current		41	1.Change PC256 from 220u to 100u PC251 from 150uF to 100uF PC264 from 220U to 100U		DVT
2		To decrease noise coupling		42	1. change PR331 from 110k to 93.1k, change PR235 from 2k to 2.74k ,change PC275 from 0.1u to 0.01u ,change PR329 from18k to 1k, change PR330 from 10k to1k		PVT
3							
4		for EMI					
5					DELETE PL2,,PL4,PL14,,PL18,PL28		PVT
6		CHANGE PU5 from MAX1631 to MAX1902 (BECAUSE MAX1631 shortage)		38	CHANGE PT1 from 10u_1205P to 9u_sdt-1204p-9r0-120;delete PU19;CHANGE pl5 FROM 10U_SPC-1205P-100 to 10u_1204p-100_4.5A;change PC39 from 180PF to 470PF;DELETE PZD6;change PU5 from max1631 to max1902		
7							
8							
9							

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