

01	Cover sheet
02	BLOCK_DIAGRAM
03	SMBUS_&_IRQ_ROUTING
04	POWER_ON_SEQUENCE
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18	DDR2_TEMINATION
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28	MODEM_CON
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32	ALC260 CODEC
33	AUDIO PA@JACK
34	RTC POWER
35	KBC_1
36	CPU FAN

INTEL PINETRAIL Platform

F10T

Version : A

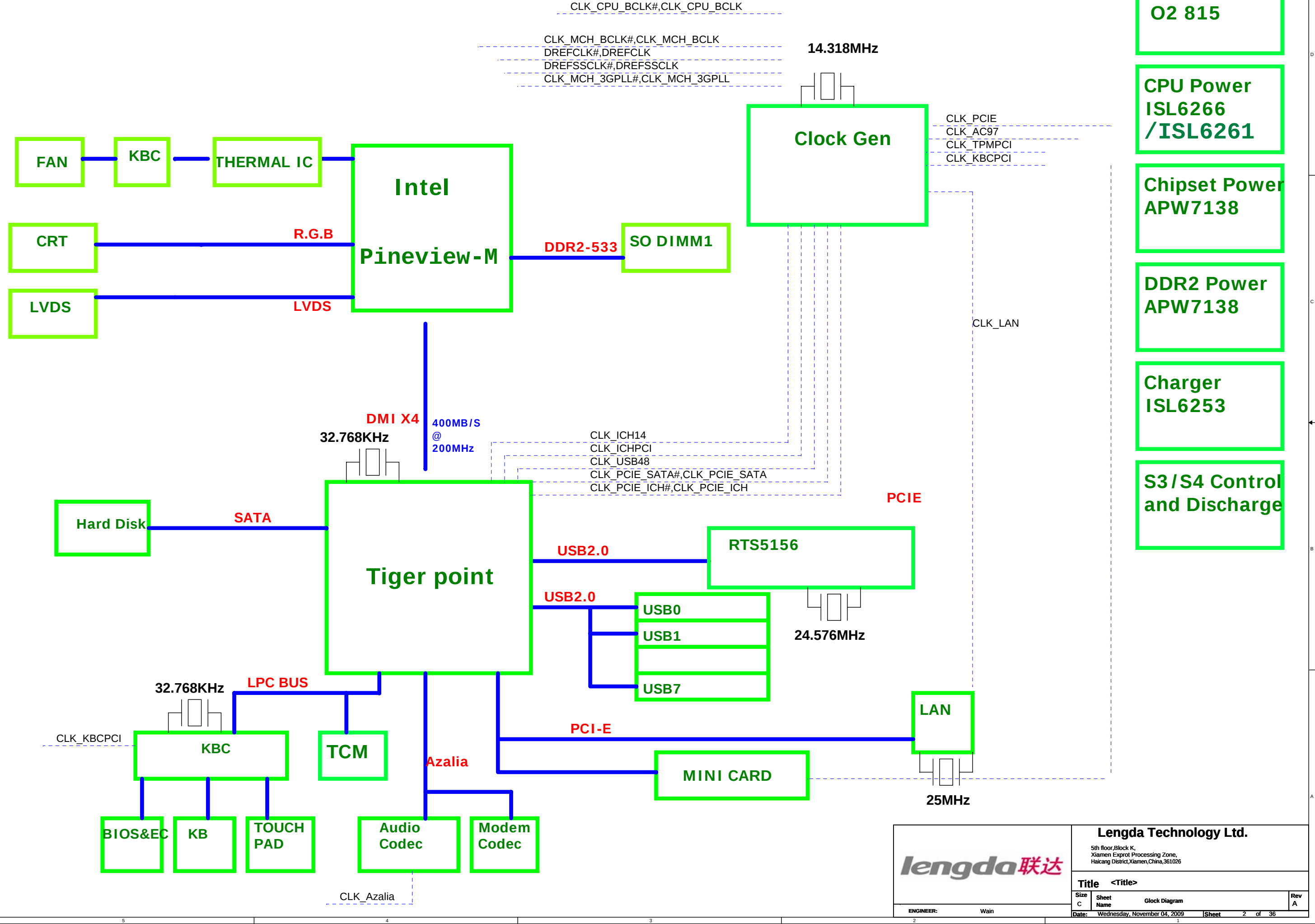
Drawing by :Wain

Notes:

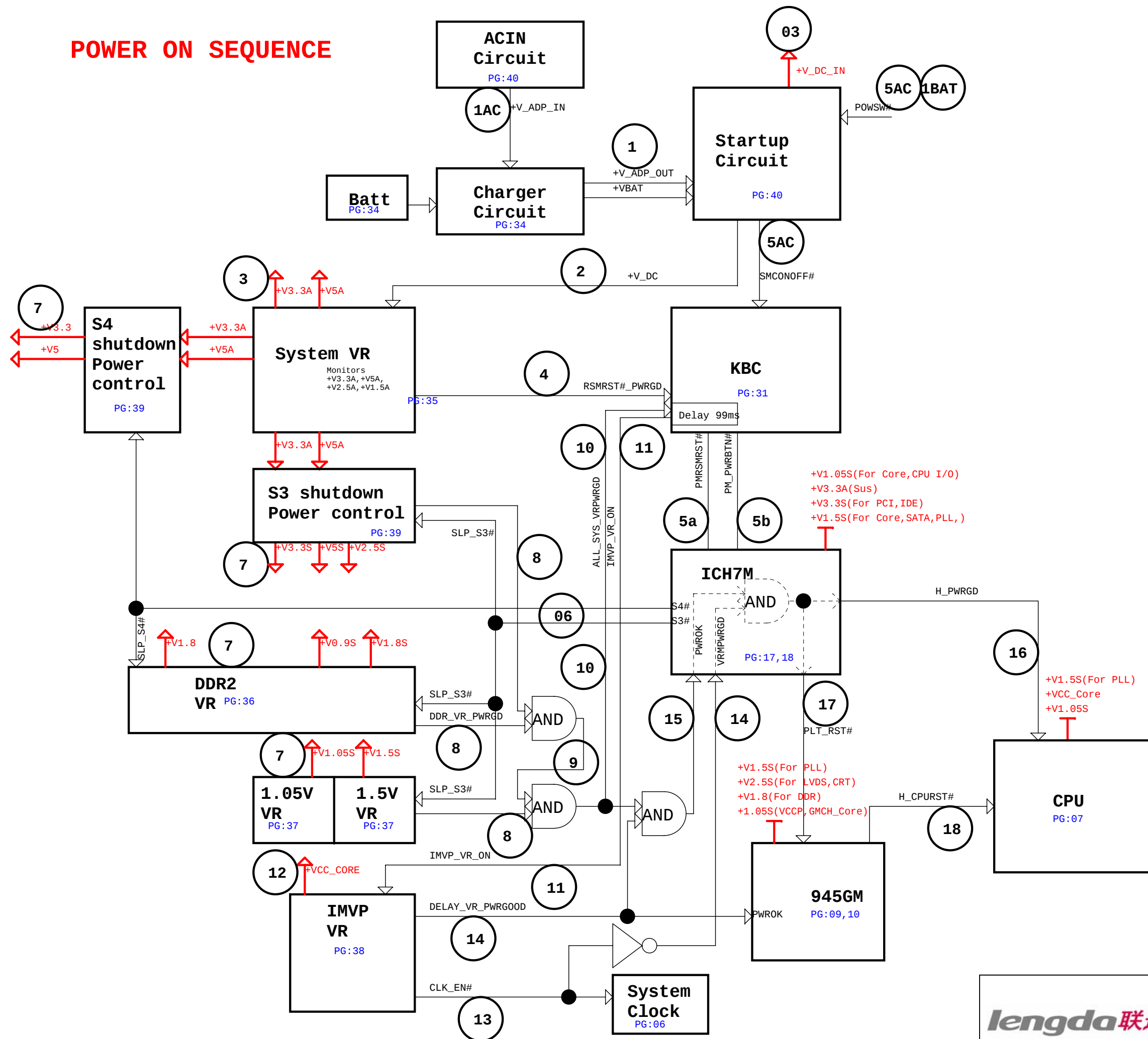
Part Value Prefix : "POP=NA" means nopop

Net Value postfix : "#" means Low Active

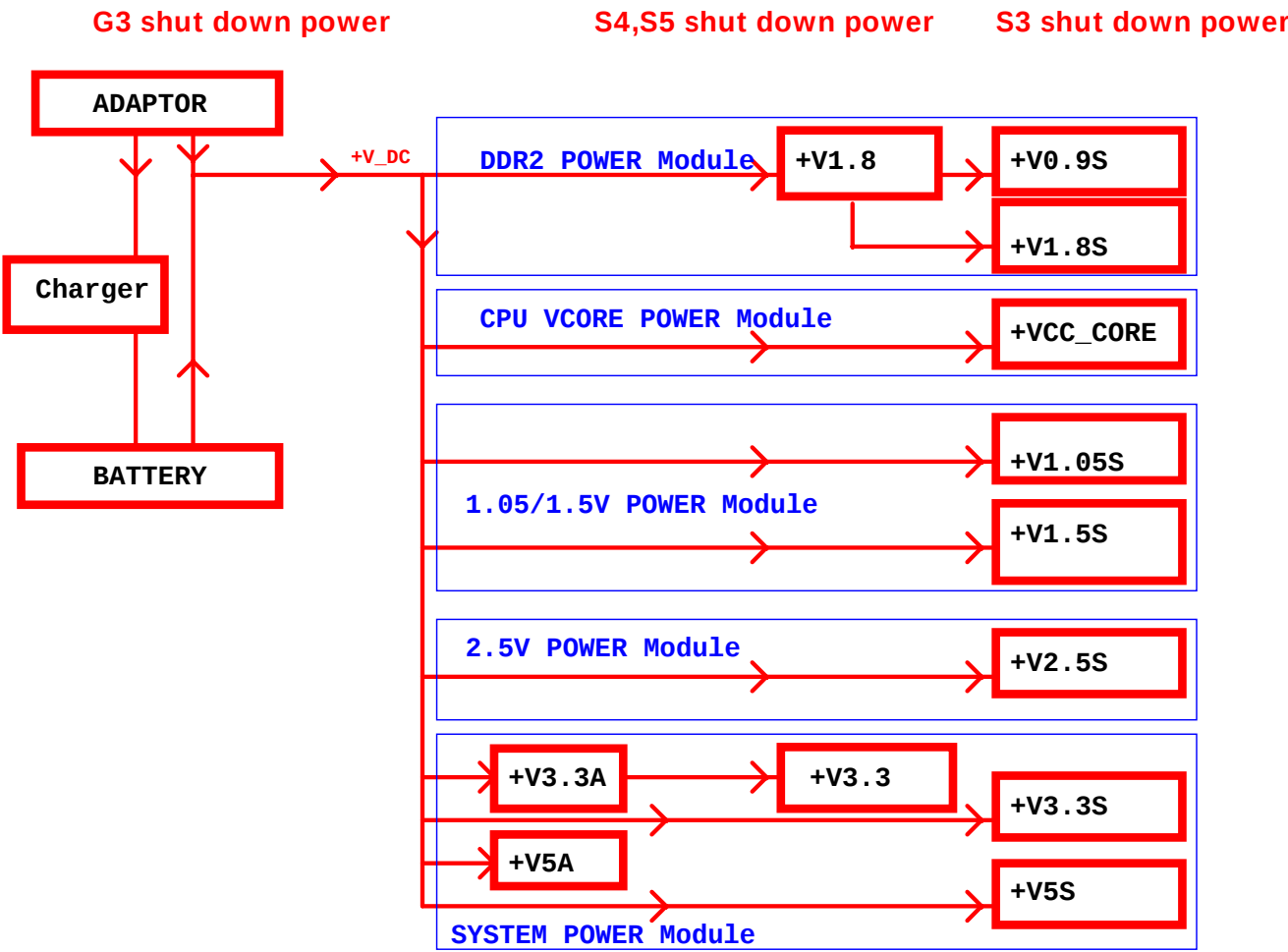
BLOCK DIAGRAM



POWER ON SEQUENCE



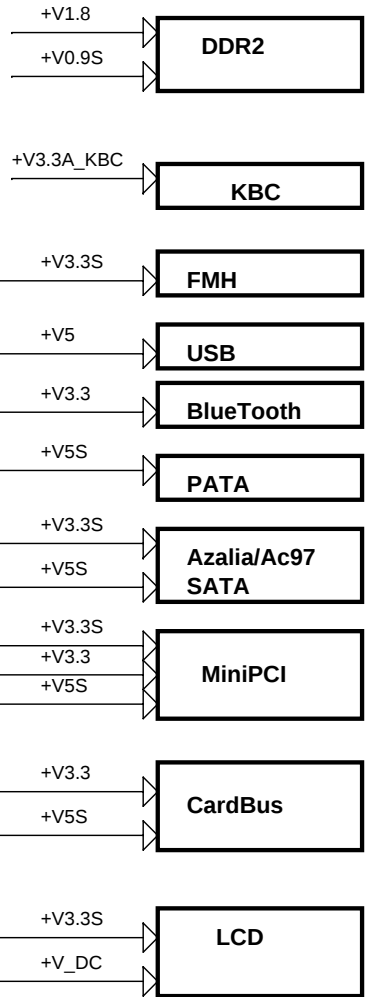
POWER Delivery Architectural Block Diagram



		Dothan-LV	
+Vcore		Vcore:0.726-1.116V /?A /S0	
+VCCP		VCCP:1.05V /3.0A /S0	
+VCC_PROC		VPLL:1.50V /0.3A /S0	

		GMCH	
+VCCP		VCCP:1.05V /S0	
+VCC_GMCH		Vcore:1.05-1.50V /S0	
+V1.5S		VPLLs:1.50V /S0	
		VccPCIE:1.5V /S0	
		VccDLVDS:1.5V /S0	
+V1.8		VccSM:1.8V /S0,S3	
+V2.5S		VccALVDS:2.5V /S0	
		VCRTDAC:2.5V /S0	
+V3.3S		VTVDAC:3.3V /S0	

ICH6-M	
+VCCP	VccpCPU:1.05V /S0
+V1.5S	Vcore:1.50V /S0
	VPLLs:1.50V /S0
	VccPCIE:1.5V /S0
+V2.5S	V2.5REF:2.5V /S0
+V3.3S	VccPCI:3.3V /S0
	VccIDE:3.3V /S0
	Vccp:3.3V /S0
	VccpAUX(LAN):3.3V /S0
+V3.3A	VccSUS:3.3V /S0,S3
+V5S	V5REF:5V /S0
+V5A	V5REFSUS:5V /S0,S3



lengda 联达

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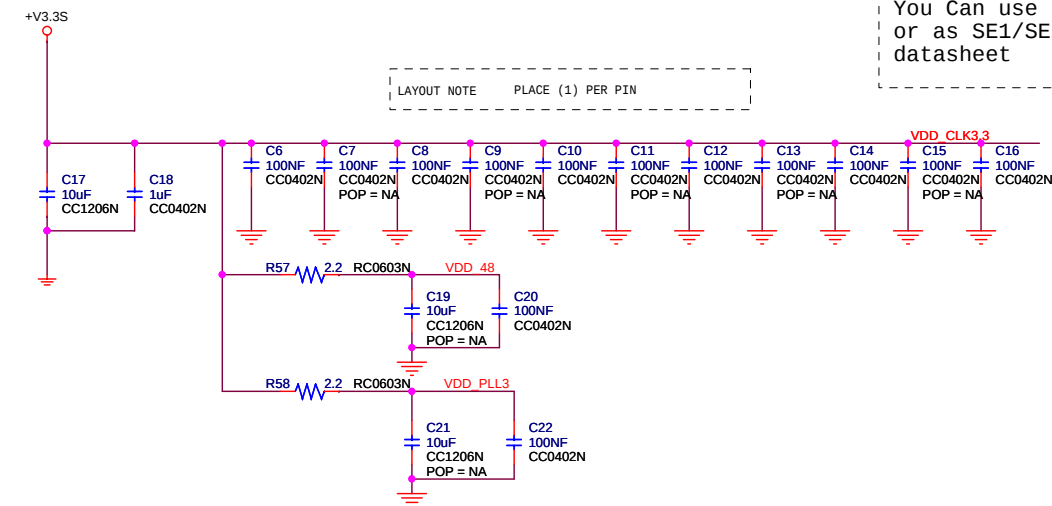
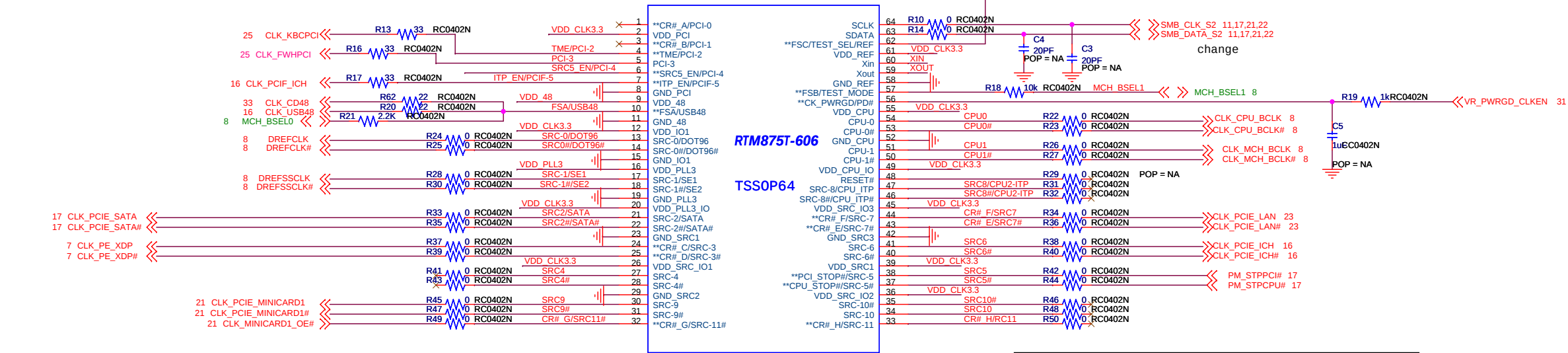
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Size C **Sheet** Name **Power_Block** **Rev** A

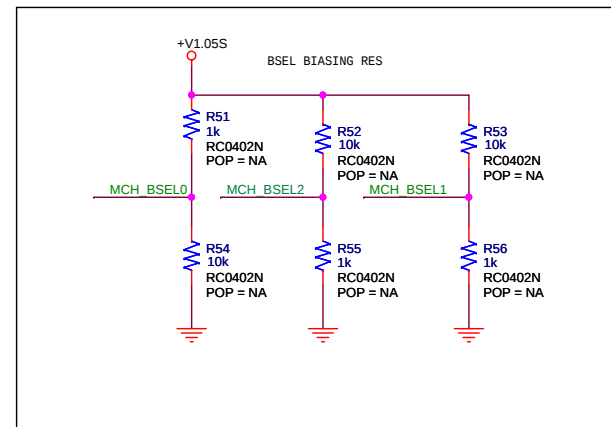
ENGINEER: Wain

Date: Wednesday, November 04, 2009 **Sheet** 4 of 36

POWER RAIL	DESTINATION	VOLTAGE	S0 CURRENT
VCORE_CPU	Banias	0.7-1.708V	32A
VCCP	Banias	0.9-1.105V	2.5A
	ICH4M MontaraGM		0.72A
1.8VDDM	Banias (PLL)	1.8V	0.3A
	MontaraGM(PLL)		0.099A
1.2VDDM	(CORE, HUB, DDRDDL)	1.2V	1.89A
			(1.4A, 0.09A, 0.4A)
1.5VDDM	MontaraGM	1.5V	0.23A
	(LVDS, DAC, DVO)		(0.07A, 0.07A, 0.09A)
	ICH4M (CORE)		0.5A
2.5VDDS	MontaraGM	2.5V	2.12A
	(DDR, LVDSIO)		(2.07A, 0.05A)
	DDR RAM		1.046A(Idle) 1.692A (Run 3DMark)
	R5C551		0.13A
1.8VDDS	82541EI		0.22A
1.25VDDM	DDR RAM	1.25V	0.0769A
1.5VDDS	ICH4M (LAN)	1.5V	0.0155A
1.2VDDS	82541EI	1.2V	0.47A
1.5VDDA	ICH4M (SUS)	1.5V	0.0675A
3VDDM	ICH4M (IO)	3.3V	0.528A
	R5C551		0.13A
	MiniPCI		
	FWH BIOS		
	LPC KBC		0.0308A (Idle)
	AC97 CODEC		0.0461A (Idle)
	CLK GEN		0.36A
	LVDS		0.246A
3VDDS	ICH4M (LAN)	3.3V	0.0092A
	R5C551		
	MiniPCI		
	82540EM		0.15A
	PCMCIA VCCA		
3VDDA	ICH4M (SUS)	3.3V	0.165A
5VDDM	AMP2020		0.0615A (Idle) 0.338A (Run)
	CDROM		0.0461A (Idle) 0.677~0.8A(Run)
	HDD		0.0461A (Idle) 0.492A (Run)
	INT KB/ INT MS		
	INVERTER		0.0615A (Idle) 0.569A (Run)
5VDDS	PCMCIA VCCA		
5VDDA	ICH4M		10UA
	USB		
PMU3V	PMU08		0.0615A
PMU5V	ASIC_B0		0.0615A

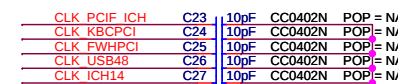


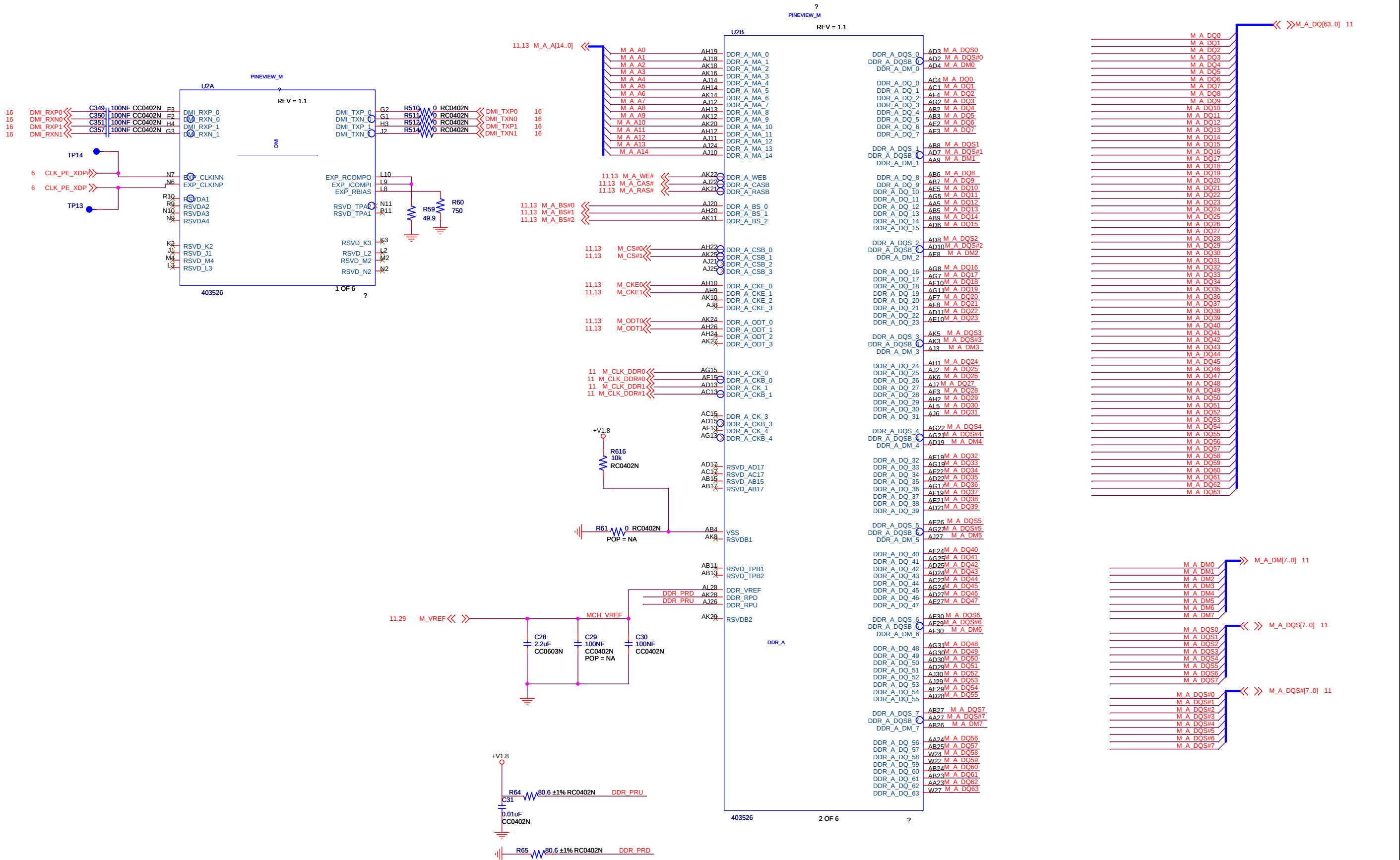
You Can use pin 24/25 either as SRC17/SRC1C or as SE1/SE2. Details please reference the datasheet

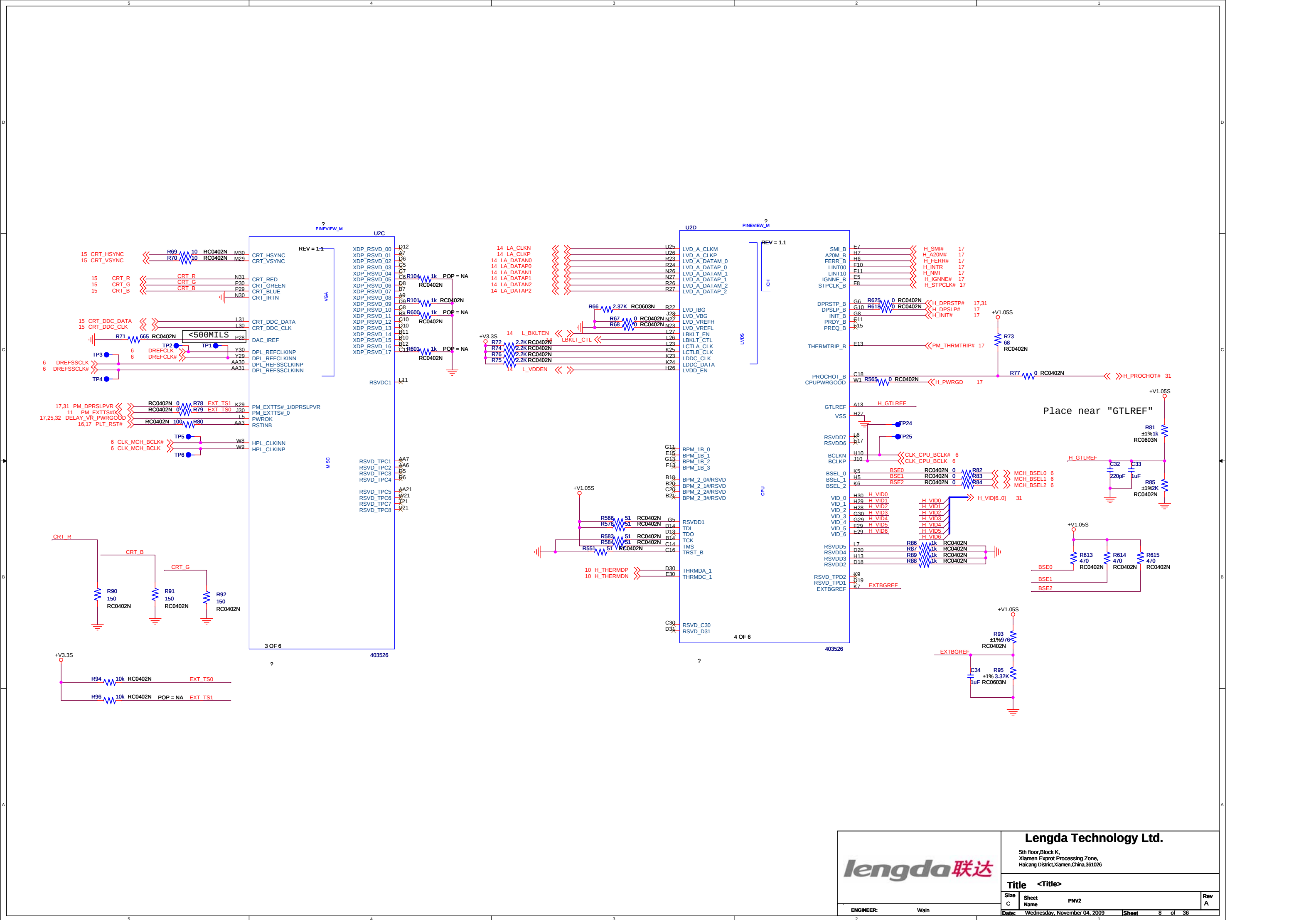


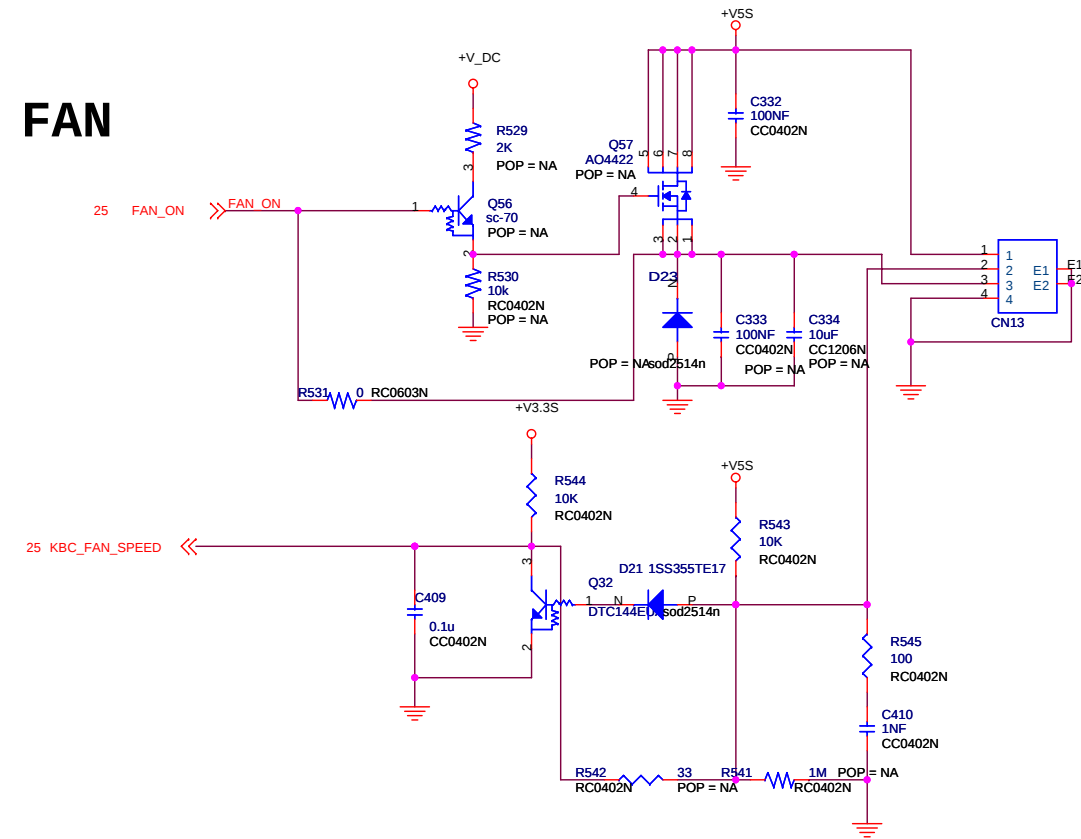
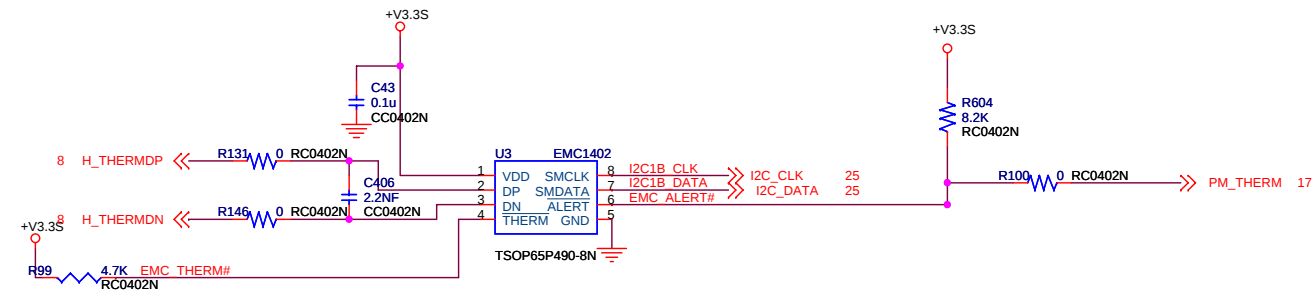
FS _L C	FS _L B	FS _L A	CPU	SRC	PCI	DOT	REF	USB
Bit2	Bit1	Bit0	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)
0	0	0	266.66	100.00	33.33	96.00	14.318	48.00
0	0	1	133.33	100.00	33.33	96.00	14.318	48.00
0	1	0	200.00	100.00	33.33	96.00	14.318	48.00
0	1	1	166.66	100.00	33.33	96.00	14.318	48.00
1	0	0	333.33	100.00	33.33	96.00	14.318	48.00
1	0	1	100.00	100.00	33.33	96.00	14.318	48.00
1	1	0	400.00	100.00	33.33	96.00	14.318	48.00
1	1	1	200.00	100.00	33.33	96.00	14.318	48.00

STRAP	MODE	STUFF	UNSTUFF
TME	NO OVERCLOCKING	R2 PULL UP	R4 PULLDOWN
	NORMAL	R4 PULLDOWN	R2 PULL UP
SRC5_EN	SRC5 ENABLED	R1 PULL UP	R5 PULLDOWN
	SRC5 DISABLED	R5 PULLDOWN	R1 PULL UP
ITP_EN	ITP ENABLED	R3 PULL UP	R6 PULLDOWN
	SRC8 ENABLED	R6 PULLDOWN	R3 PULL UP









DDR2 SODIMM0

M_CLK_DDR0

C44 10pF CC0402N

M_CLK_DDR#0

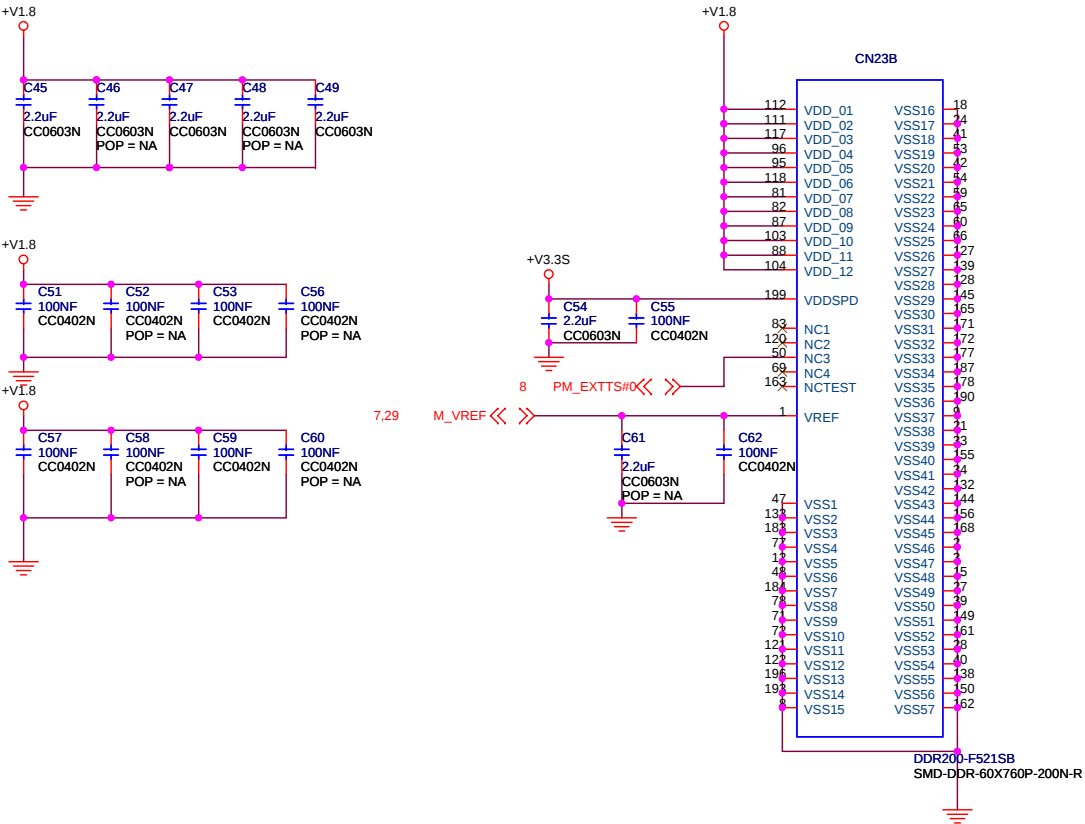
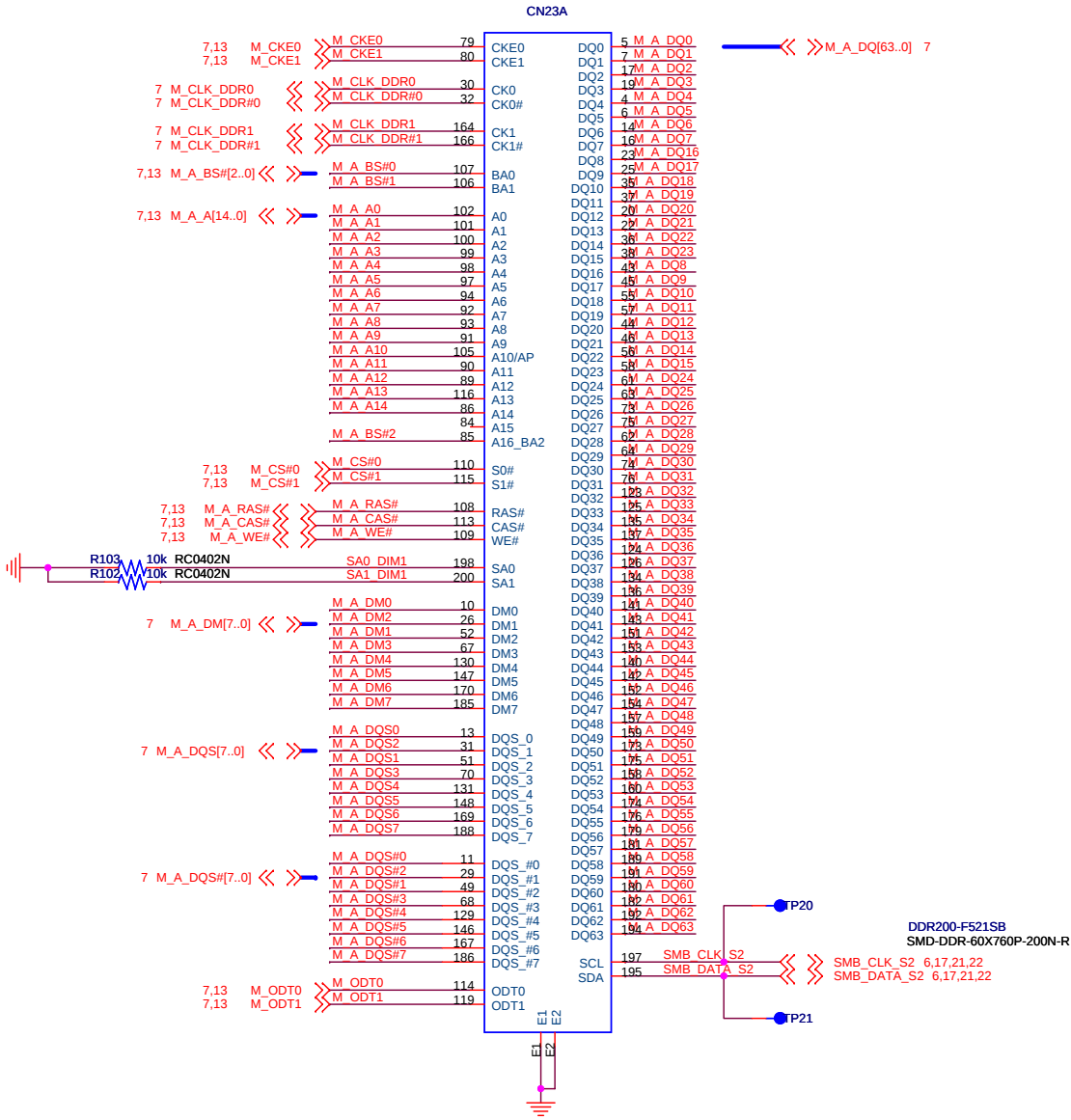
Layout Note:
Place near SO-DIMM

M_CLK_DDR1

C50 10pF CC0402N

M_CLK_DDR#1

Layout Note:
Place near SO-DIMM





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Title	<Title>
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Size

C

Sheet

Sheet
Name**DDR2_SODIMM2**

Rev

A

ENGINEER:

Wain

C
Date:

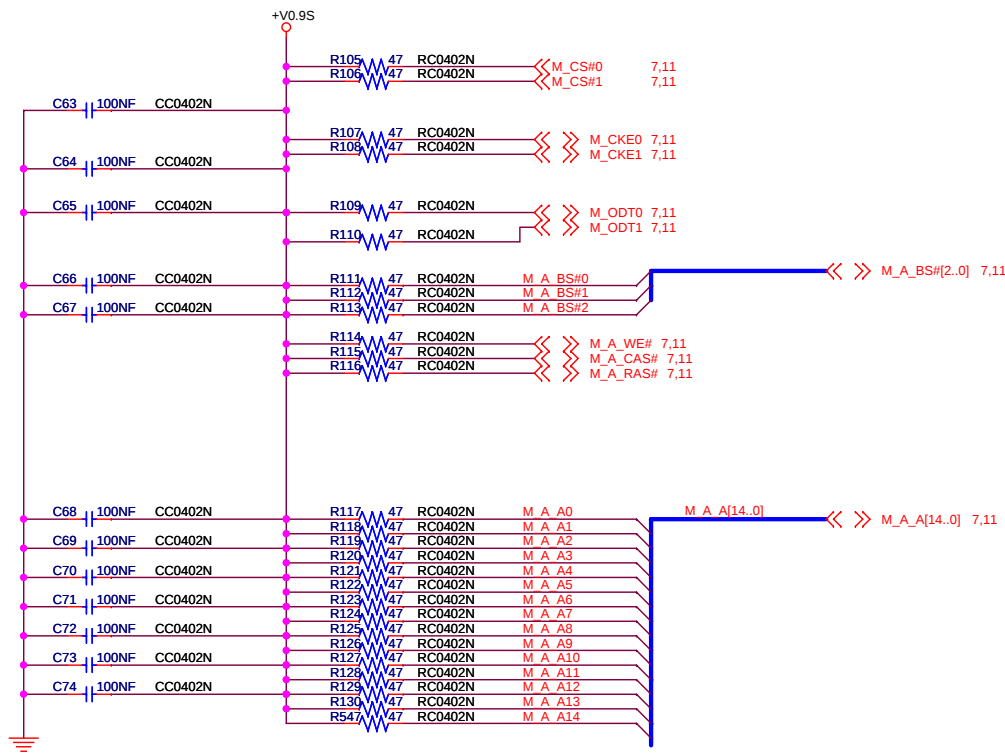
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Wednesday, November 04, 2009

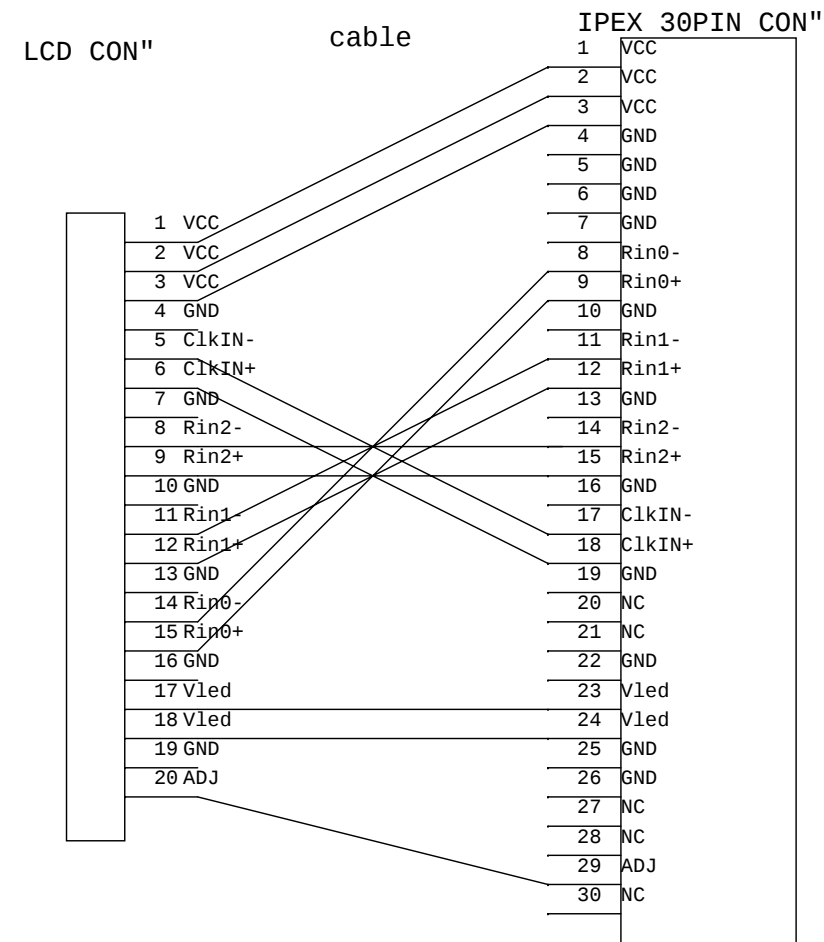
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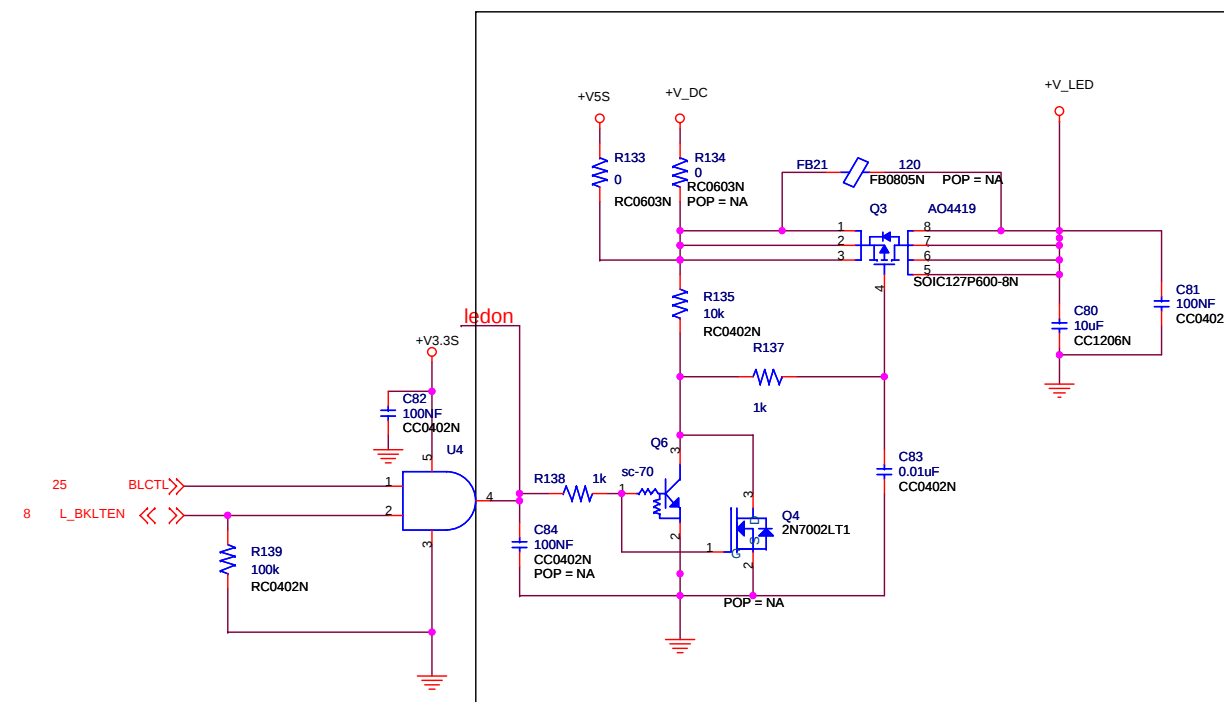
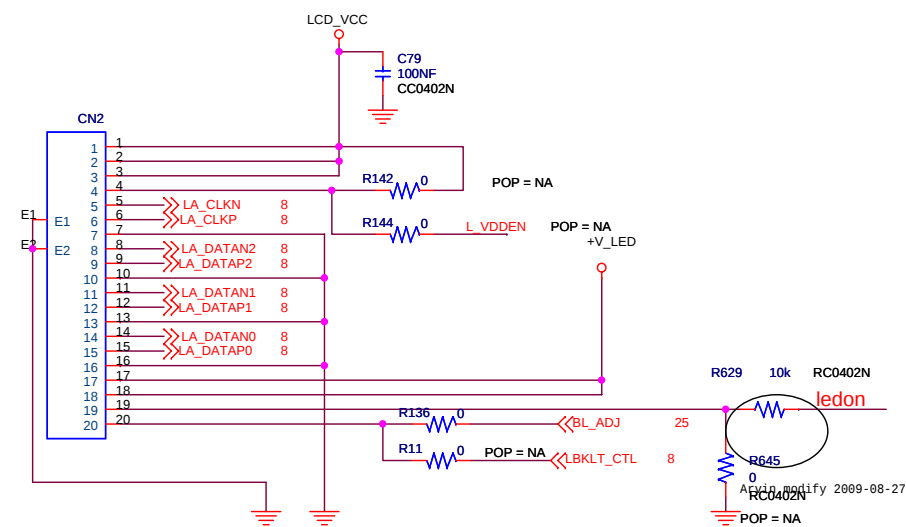
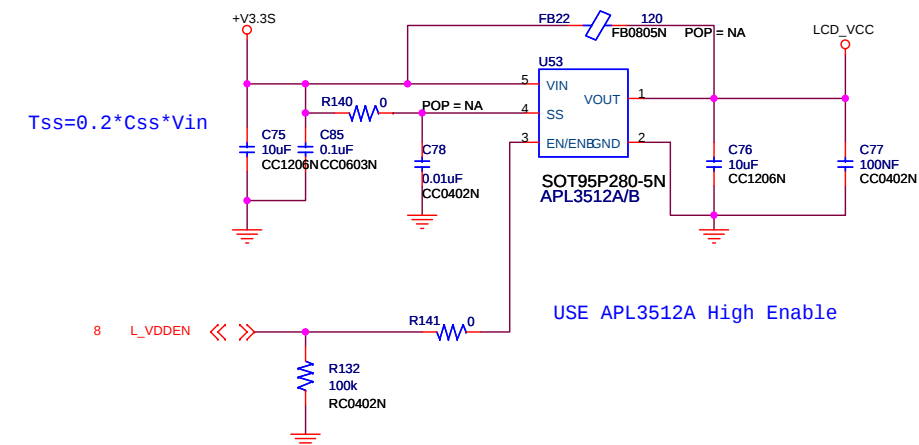
DDR2 Termination

Layout note:
Place one cap
close to every 2
pullup resistors
terminated to +0.9S

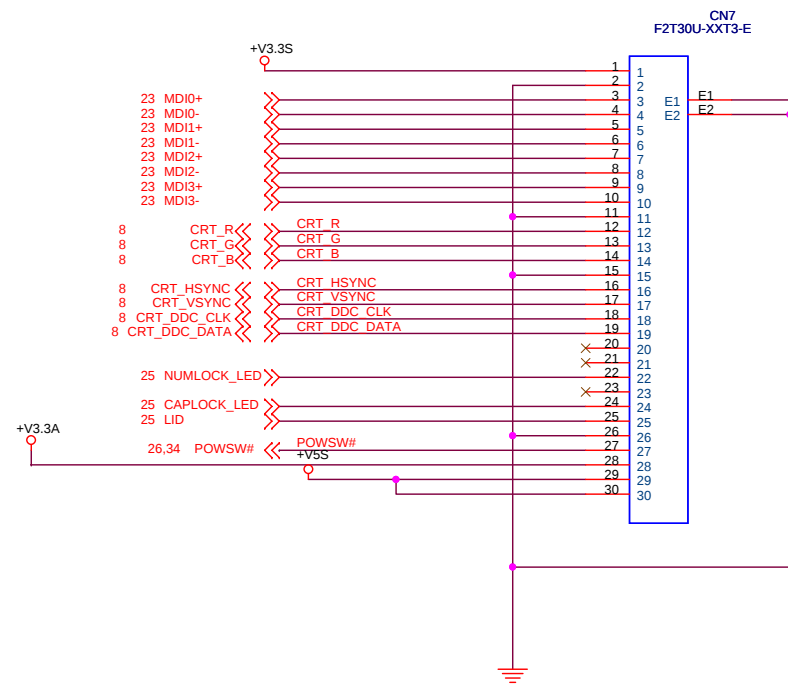




LVDS Connector



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Title <Title>			
Size C	Sheet Name LCD_CON	Rev A	
ENGINEER: Wain		Date: Wednesday, November 04, 2009	Sheet 14 of 36



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Title <Title>

Size

C

Sheet

Name

CRT

Rev

A

ENGINEER:

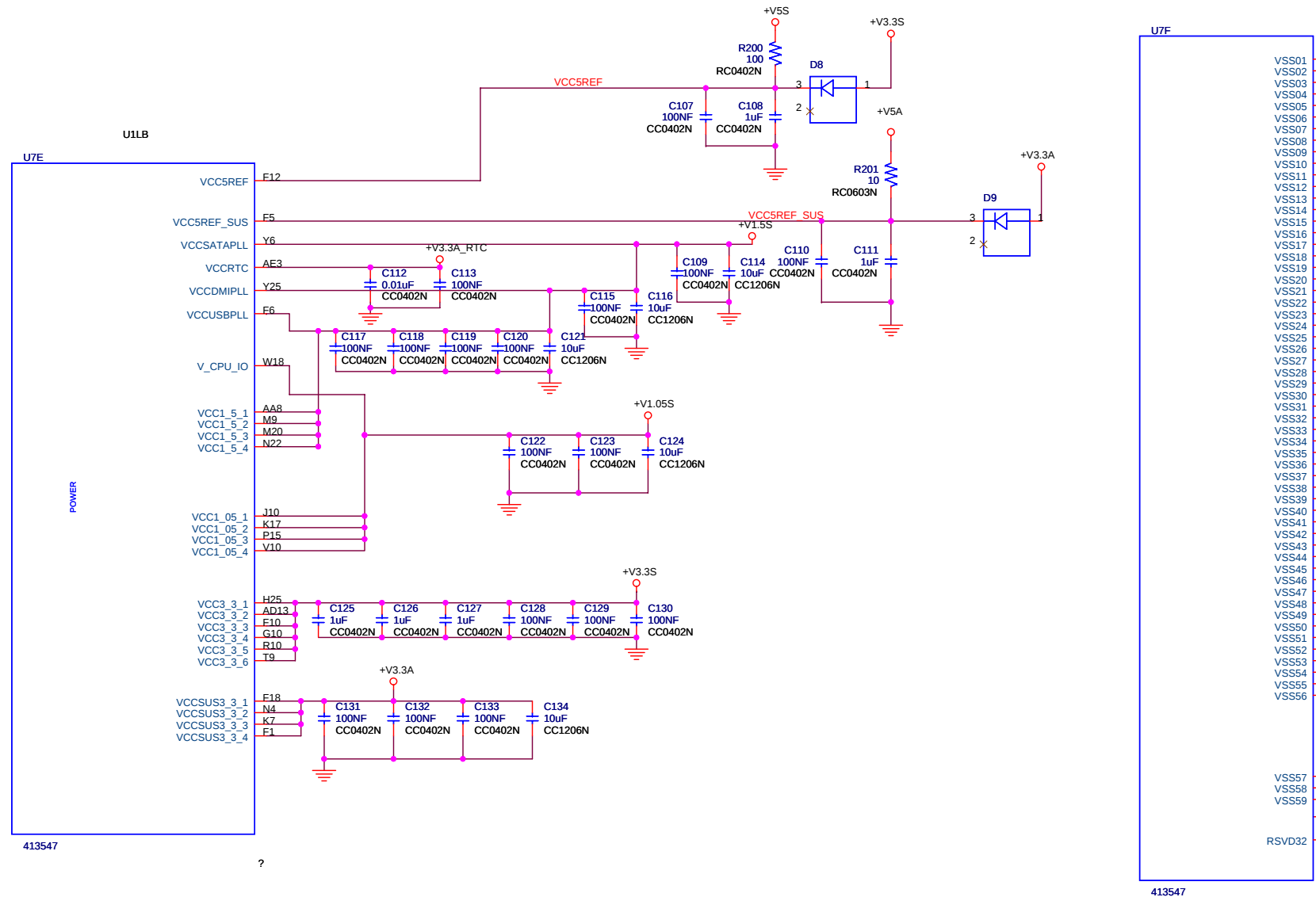
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Date:

Wednesday, November 11, 2009

Sheet

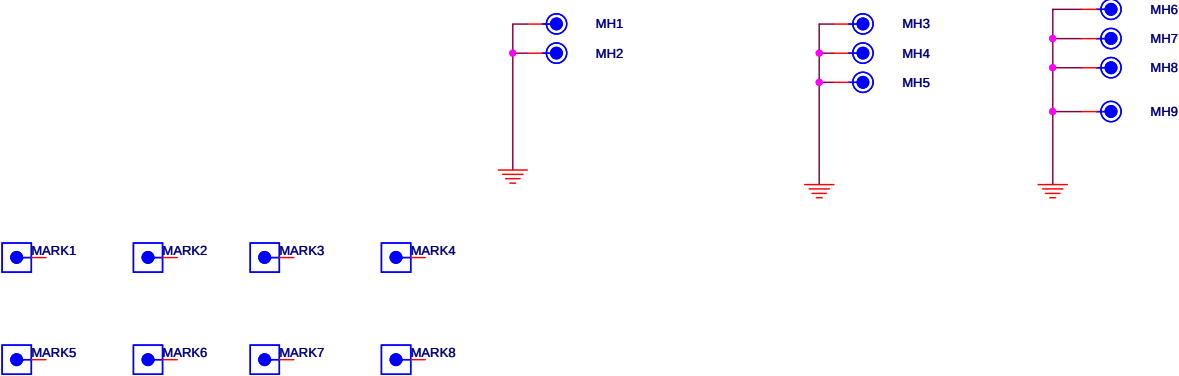
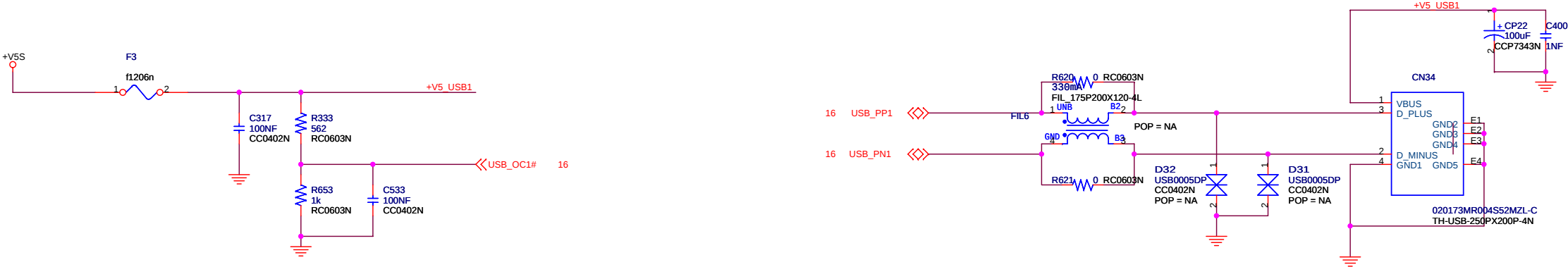
15 of 36

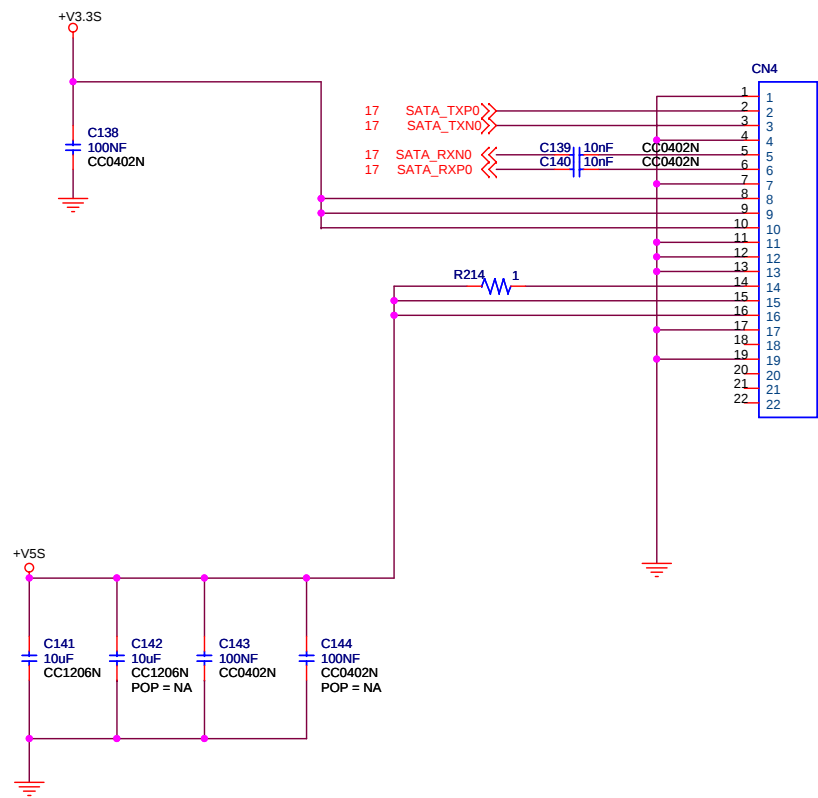


- VSS01 A1
- VSS02 A25
- VSS03 A6
- VSS04 B10
- VSS05 B16
- VSS06 B20
- VSS07 B24
- VSS08 B18
- VSS09 B16
- VSS10 C4
- VSS11 C8
- VSS12 H1
- VSS13 H4
- VSS14 H5
- VSS15 K4
- VSS16 K8
- VSS17 K11
- VSS18 K19
- VSS19 K20
- VSS20 L4
- VSS21 M7
- VSS22 M11
- VSS23 M3
- VSS24 M12
- VSS25 M13
- VSS26 M14
- VSS27 N23
- VSS28 B11
- VSS29 B13
- VSS30 B19
- VSS31 B14
- VSS32 B22
- VSS33 T2
- VSS34 T22
- VSS35 V1
- VSS36 V7
- VSS37 V8
- VSS38 V19
- VSS39 V22
- VSS40 V25
- VSS41 W12
- VSS42 W22
- VSS43 Y2
- VSS44 Y24
- VSS45 AB4
- VSS46 AB6
- VSS47 AB7
- VSS48 AB8
- VSS49 AC8
- VSS50 AD2
- VSS51 AD10
- VSS52 AD20
- VSS53 AD24
- VSS54 AE1
- VSS55 AE10
- VSS56 AE25
- VSS57 C24
- VSS58 AE13
- VSS59 E2
- RSVD32 AE16

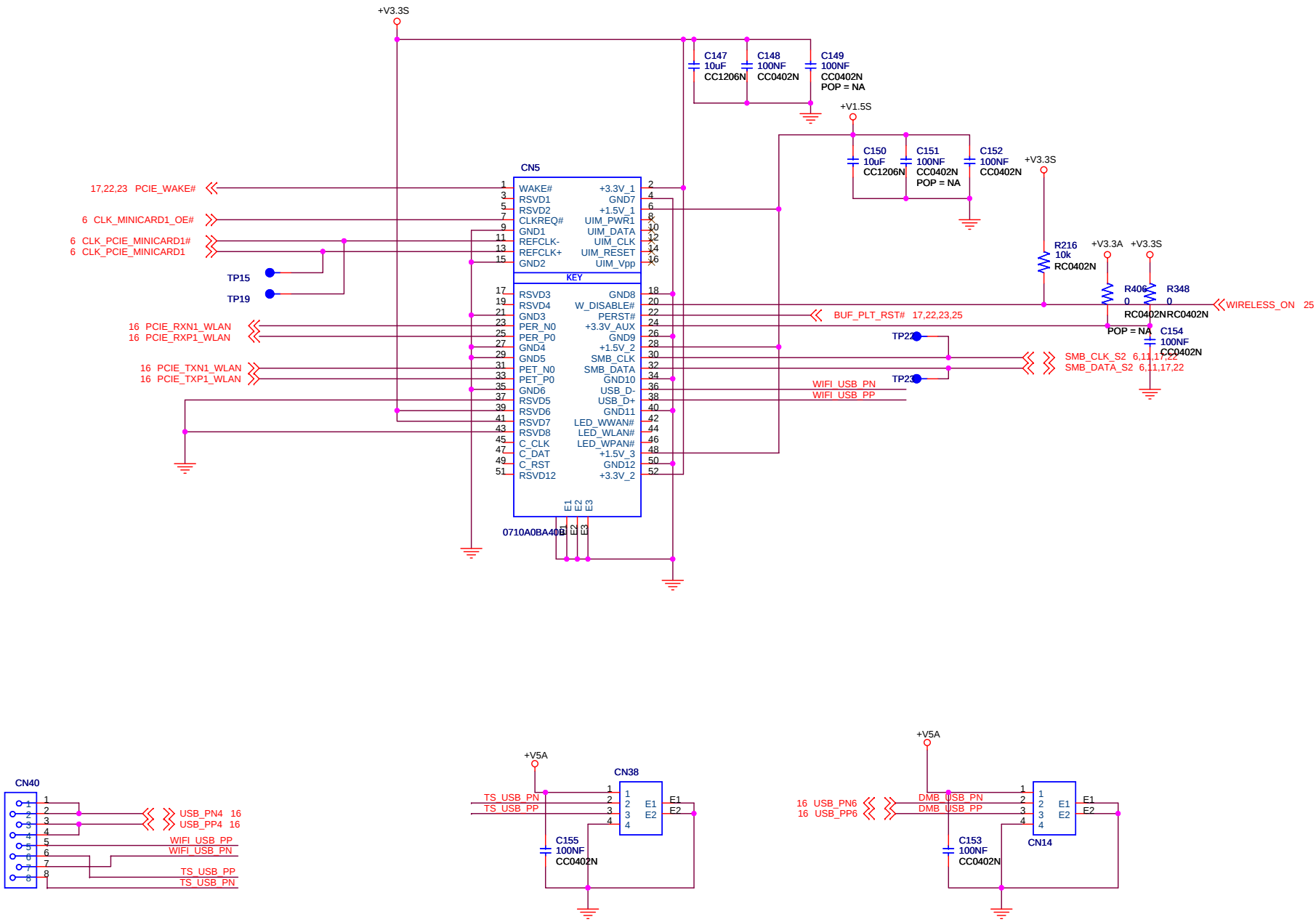
USB

USB Port3



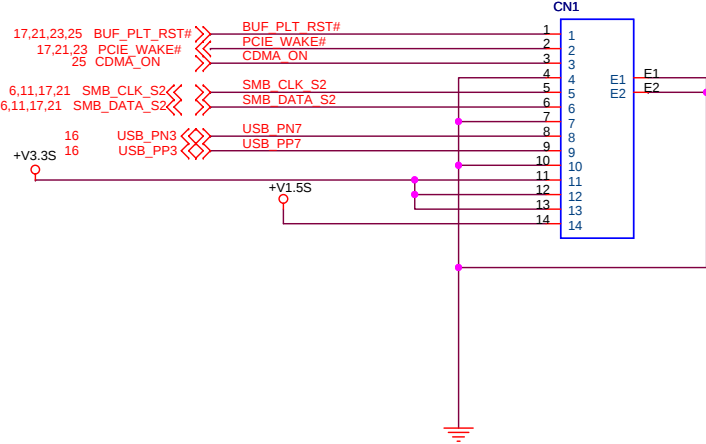


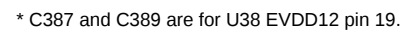
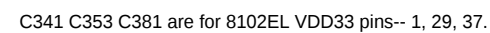
Minicard



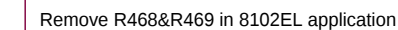
Add Touchscreen connector (use an usb port with wifi) & dmb connector 2009-10-15

CDMA



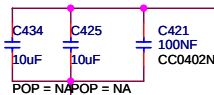
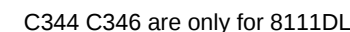


C29 C32 are only for RTL8111DL.

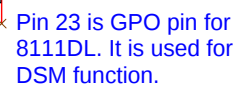


* C372 C379 C388 C392 C393 are for 8111DL DVDD12 pins-- 10, 13, 30, 36, 39.

* C372 C379 C388 C392 are for 8102EL DVDD12 pins-- 10, 13, 30, 36.



Remove R423 and R426 for RTL8102EL application.
R423 and R426 are used in the RTL8111DL application.
Remove R426 if switching regulator is enabled. Remove R423 if external power 1.2V is used.



R461 is only required by RTL8102EL



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Title	<Title>
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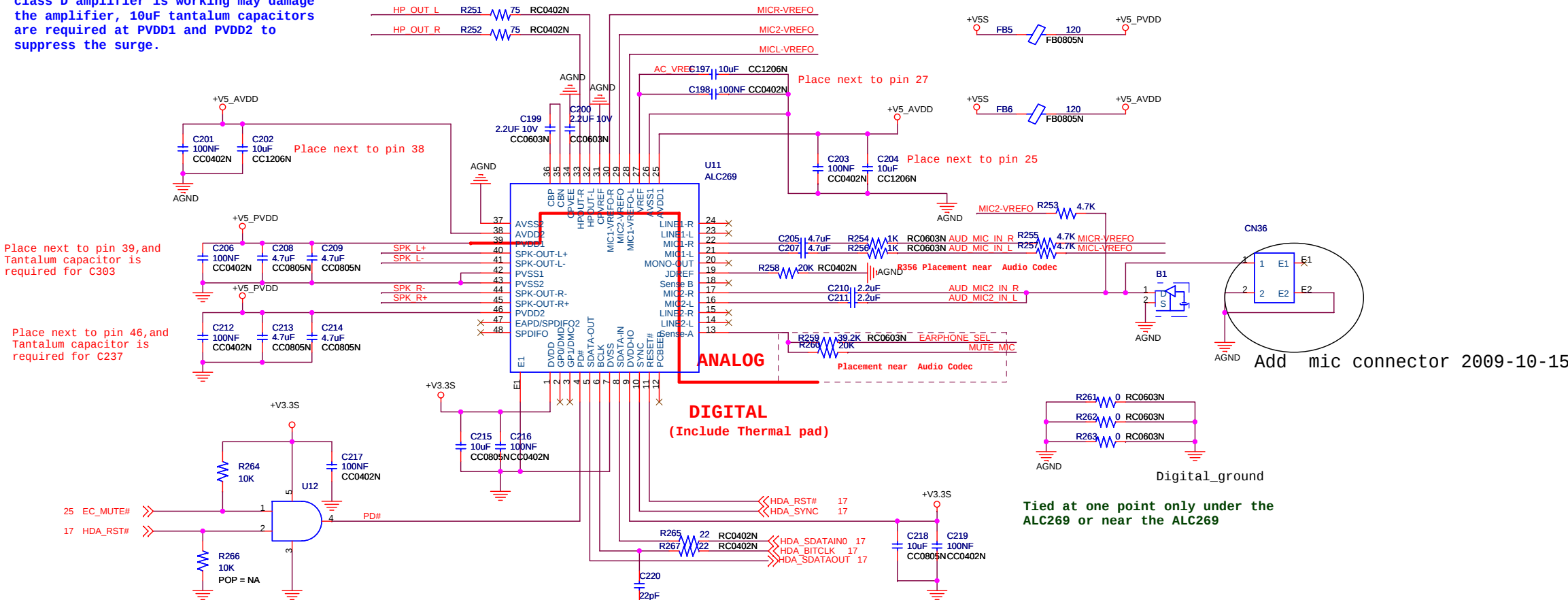
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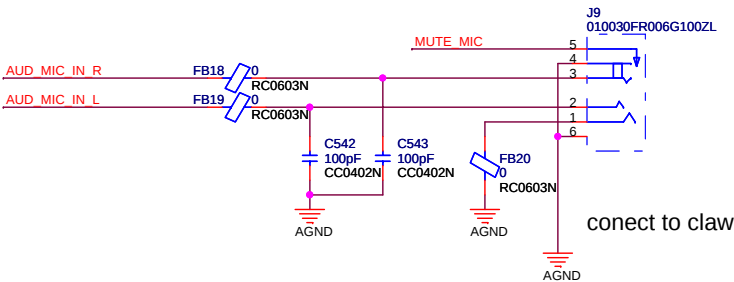
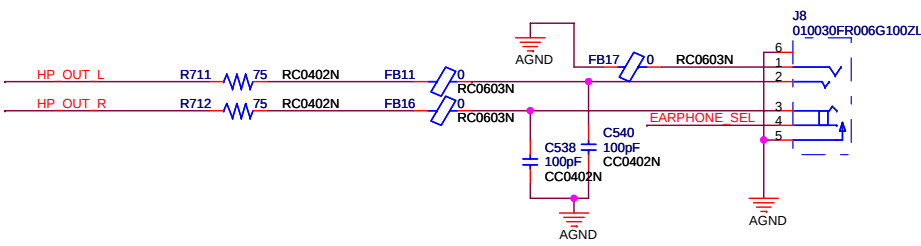
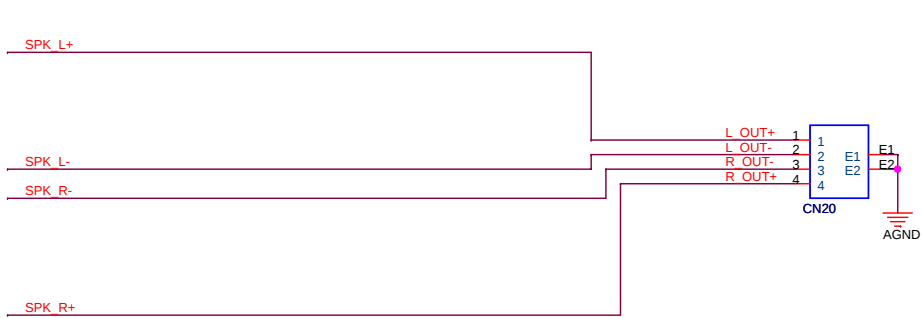
ENGINEER: Arvin

<<Attention>>
Surges of PVDD >7V duration 0.1ms when class D amplifier is working may damage the amplifier, 10uF tantalum capacitors are required at PVDD1 and PVDD2 to suppress the surge.



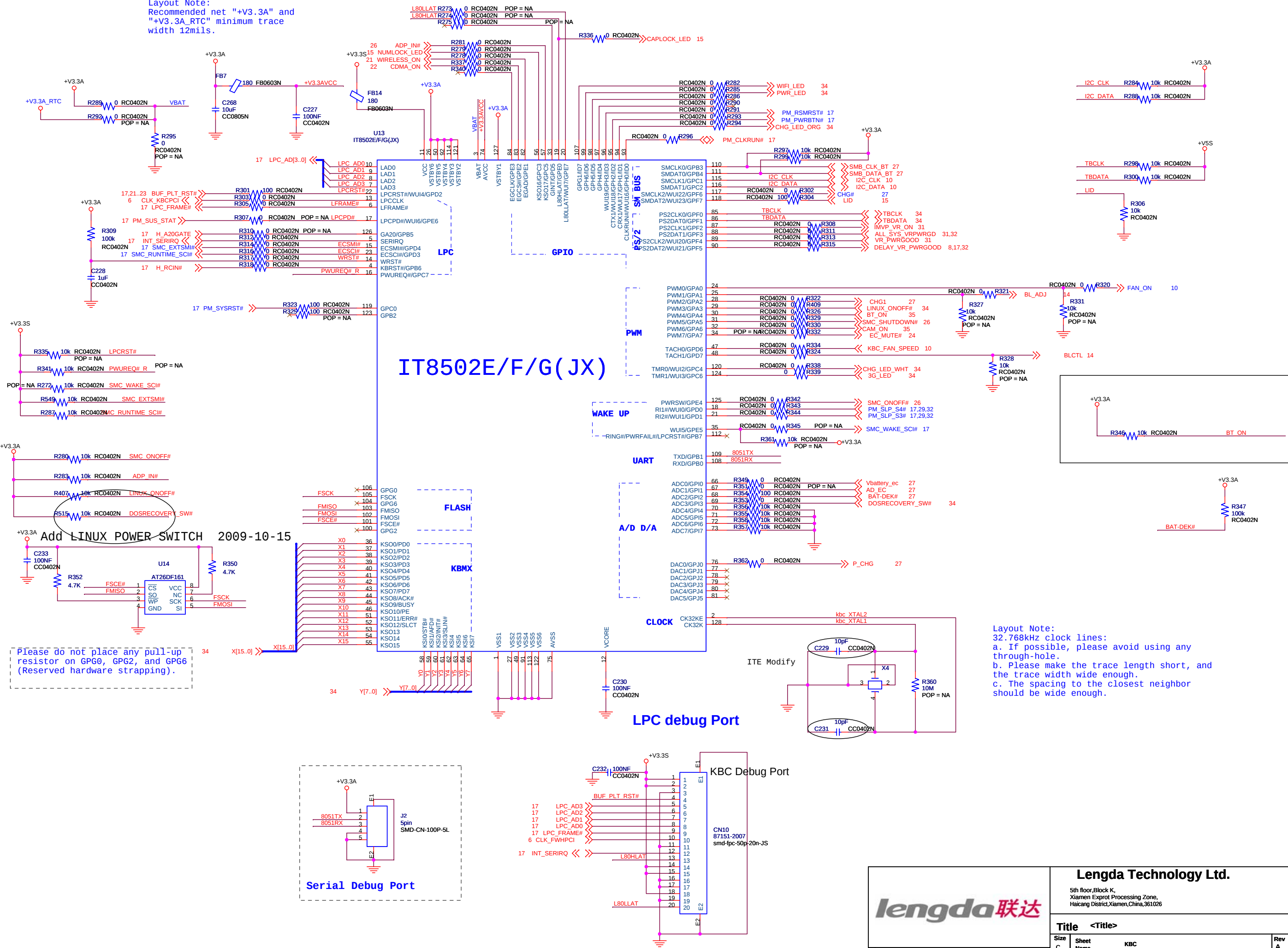
<<Attention>>
For power_on/off de-pop circuit and system booting warning signal: Please System BIOS Engineer Note :
1. If you want the system make warning signal after power on , please let EC_MUTE# High first.
2. When you want to exit your Bios Programming Code, please let the EC_MUTE# Low. (The programming is different from before .)

PD#=0V : Power down Class D SPK amplifier
PD#=3.3V : Power up Class D SPK amplifier



<<Attention>>
If mount the LC filter((L9~L12;C295/C299;C300/C293/C294/C296),Please let them together and close to codec. If the PCB trace and Speaker wire length is less than 20cm, don't need the LC filter(L9~L12;C295/C299) to eliminate the EMI,If L9,L0,L11,L12 are replaced by 0 ohm/1.6A resistor(please don't use general bead, because it may influence the THD+N quality) ,and C295,C299 should be NC.And,please make the trace length/ Speaker wire length of SPKL+/L-/R+/R- be the same as possible as you can.
C300/C293/C294/C296 are reserved for EMI fine-tune ; For EMI issue, please also refer our ALC269 Layout guide document

Layout Note:
Recommended net "+V3.3A" and
"+V3.3A_RTC" minimum trace
width 12mils.



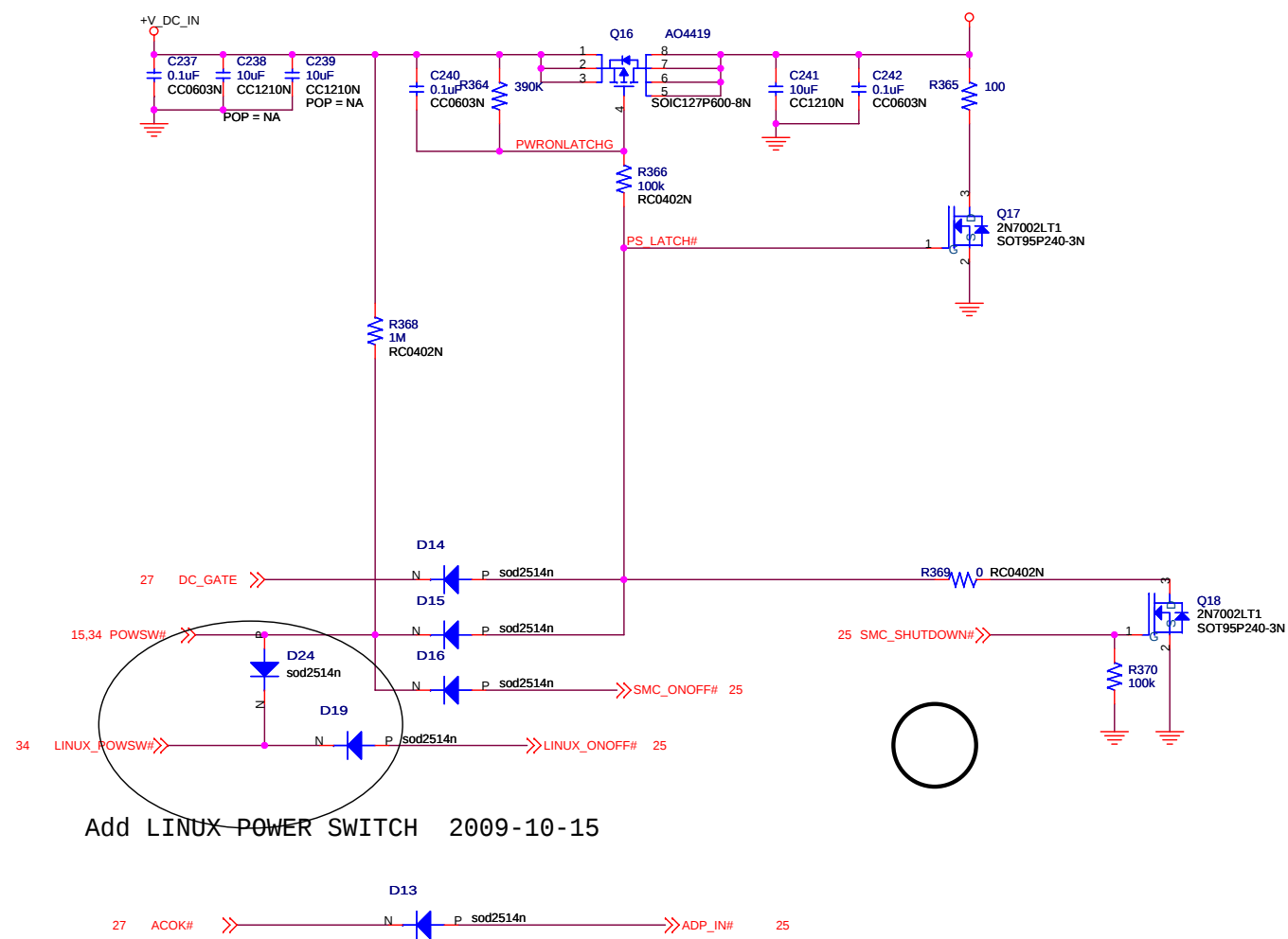
Layout Note:
32.768kHz clock lines:

- a. If possible, please avoid using any through-hole.
- b. Please make the trace length short, and the trace width wide enough.
- c. The spacing to the closest neighbor should be wide enough.

Power Button Detect & Latch

Power Sequence

05

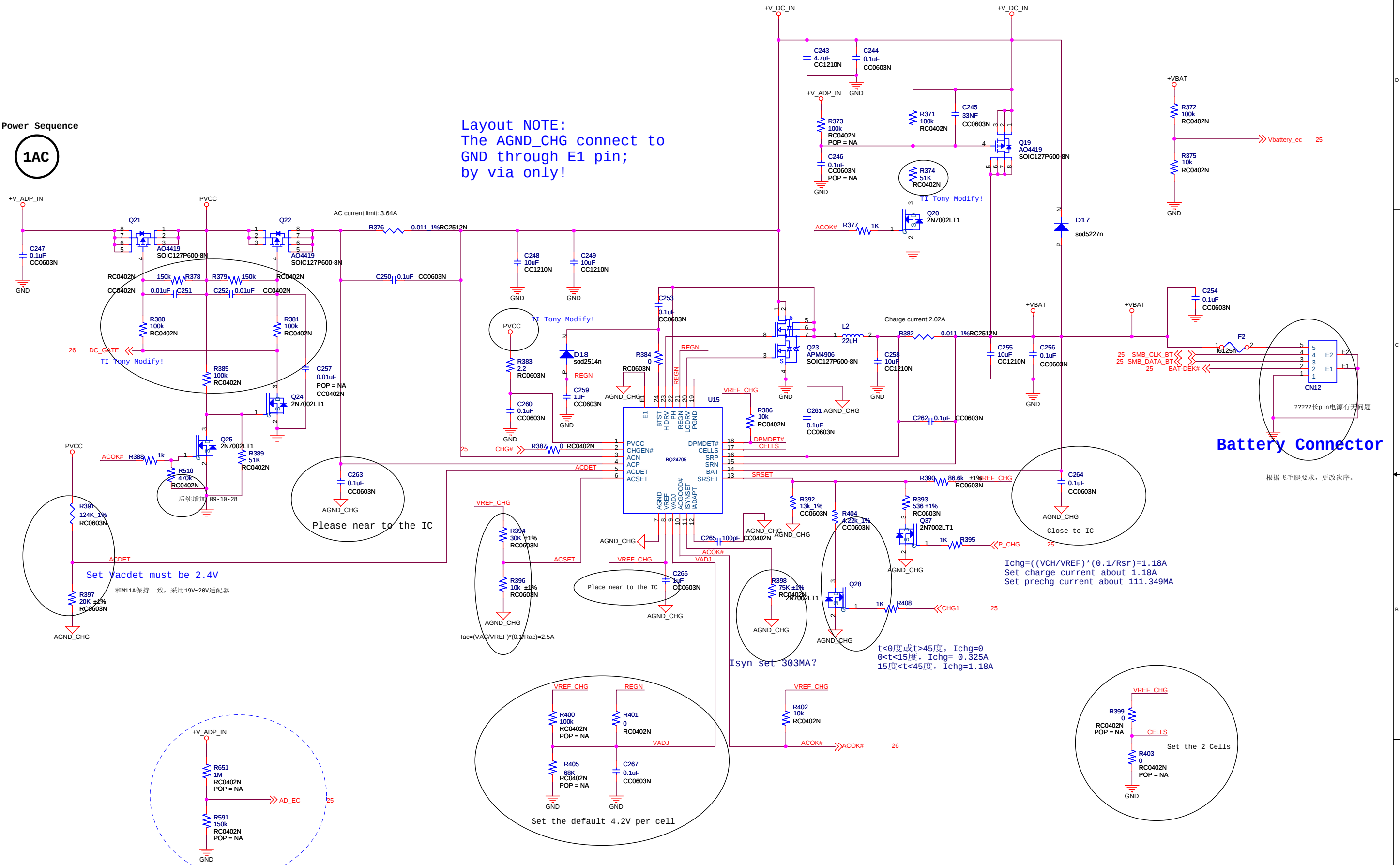


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Title		<Title>	
Size	Sheet	ACIN	Rev
C	Name		A
ENGINEER: Wain		Date: Wednesday, November 04, 2009	Sheet 26 of 36

Power Sequence

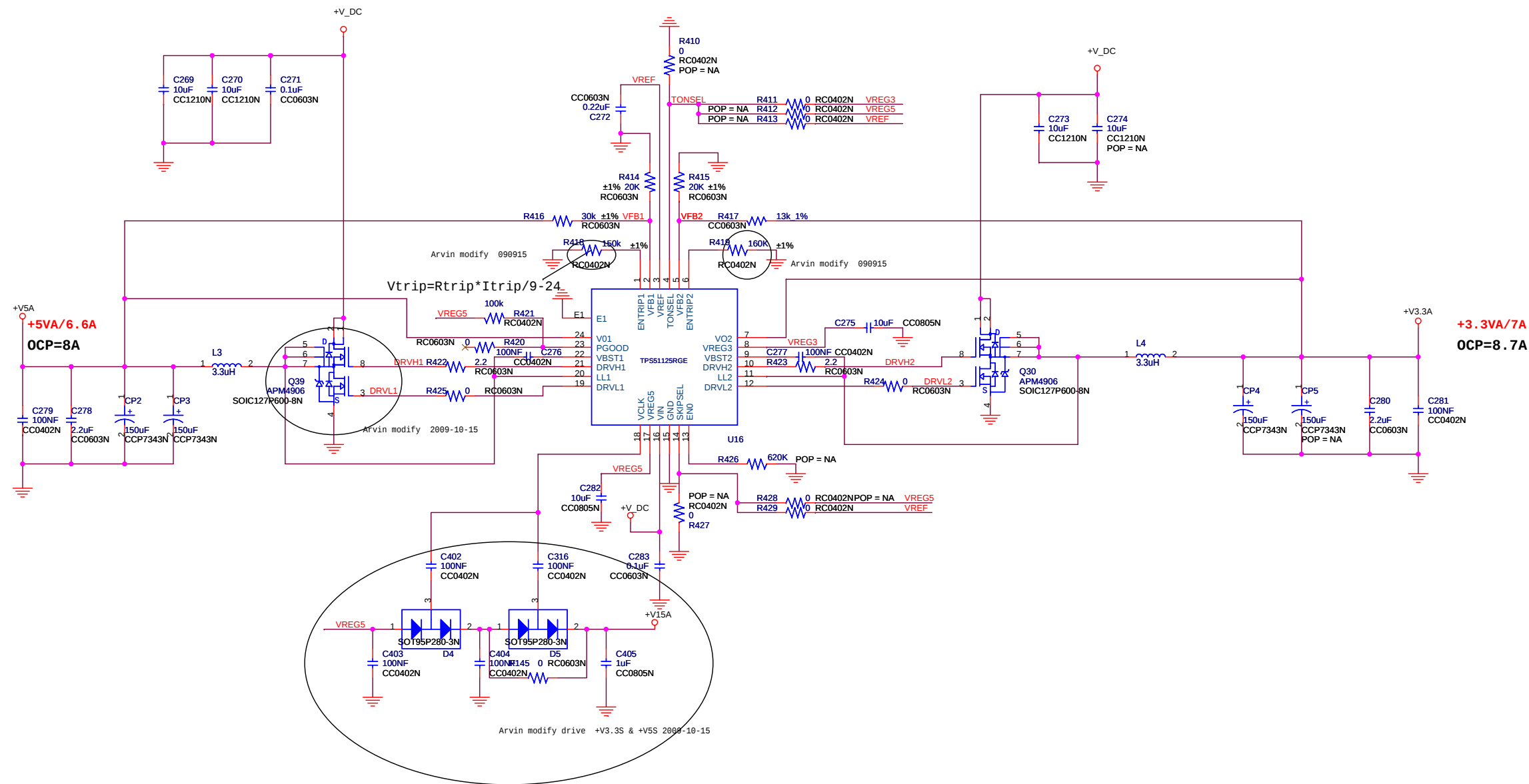
1AC

Layout NOTE:
The AGND_CHG connect to
GND through E1 pin;
by via only!

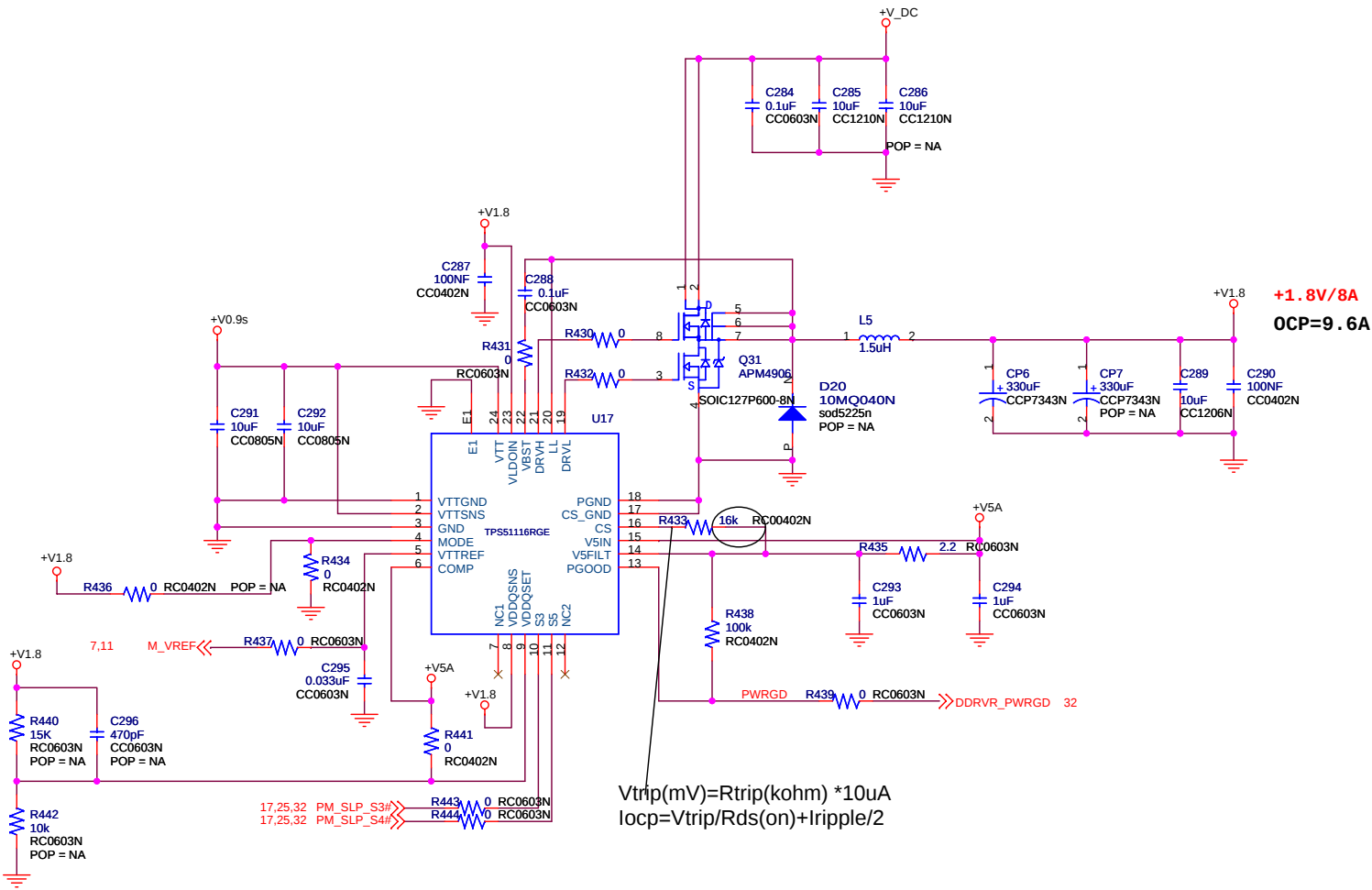


Battery Connector

根据飞毛腿要求，更改次序。



MODE	DISCHARGE MODE
V5IN	No discharge
VDDQ	Tracking discharge
S4/GND	Non-tracking discharge



S3 & S5 Control

STATE	S3	S5	VDDQ	VTTREF	VTT
S0	HI	HI	ON	ON	ON
S3	LO	HI	ON	ON	OFF(HI-Z)
S4/S5	LO	LO	OFF(Discharge)	OFF(Discharge)	OFF(Discharge)

VDDQSET	VDDQ (V)	VTTREF & VTT	NOTE
GND	2.5	VDDQSNS/2	DDR
V5IN	1.8	VDDQSNS/2	DDR2
FB Resistors	Adjustable	VDDQSNS/2	1.5V< VDDQ<3V

(100*VDDQ-75)kohm

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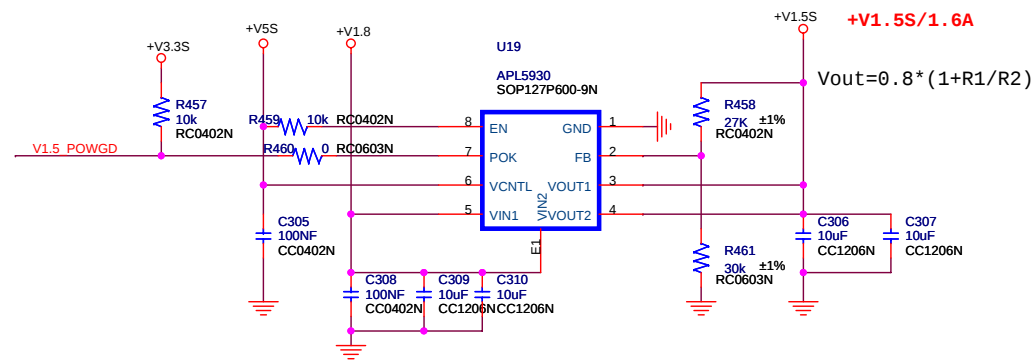
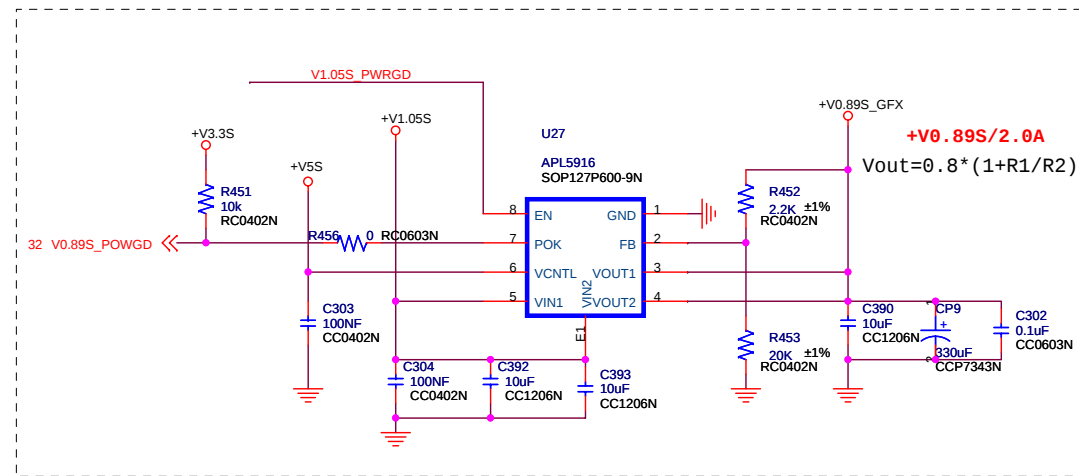
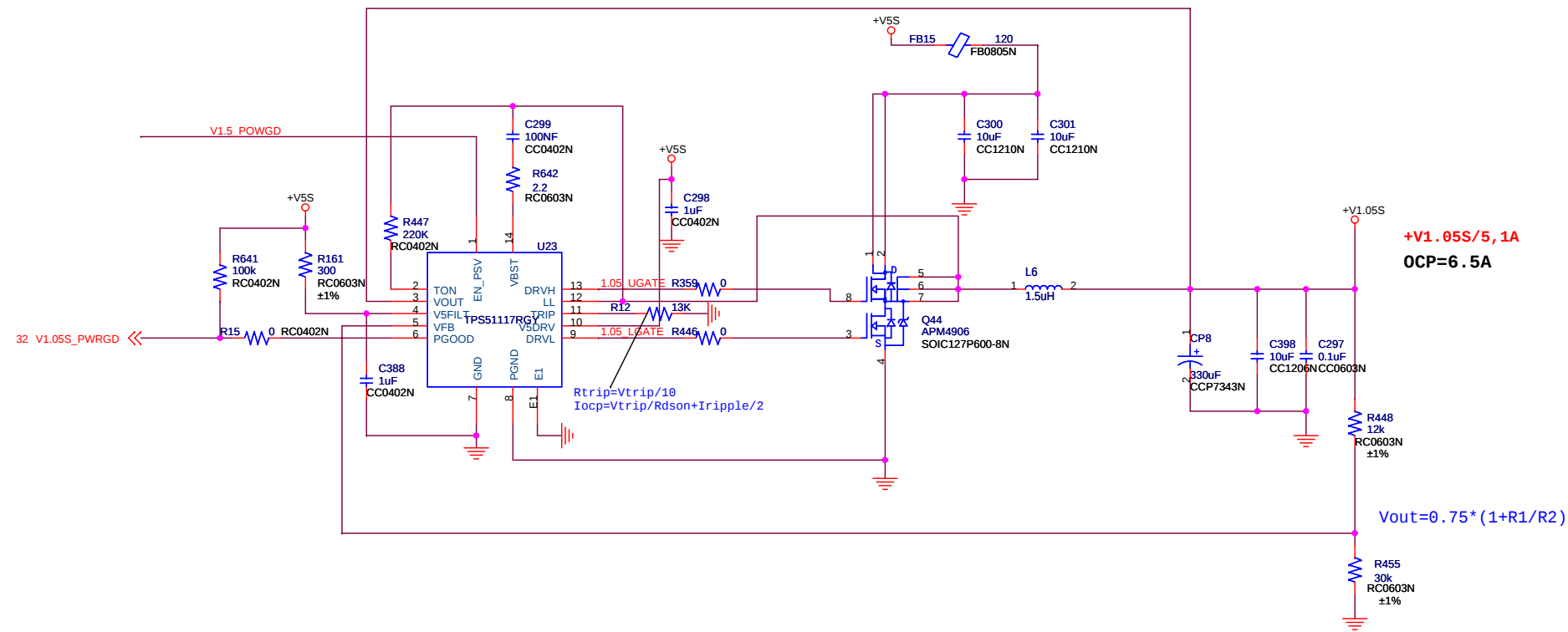
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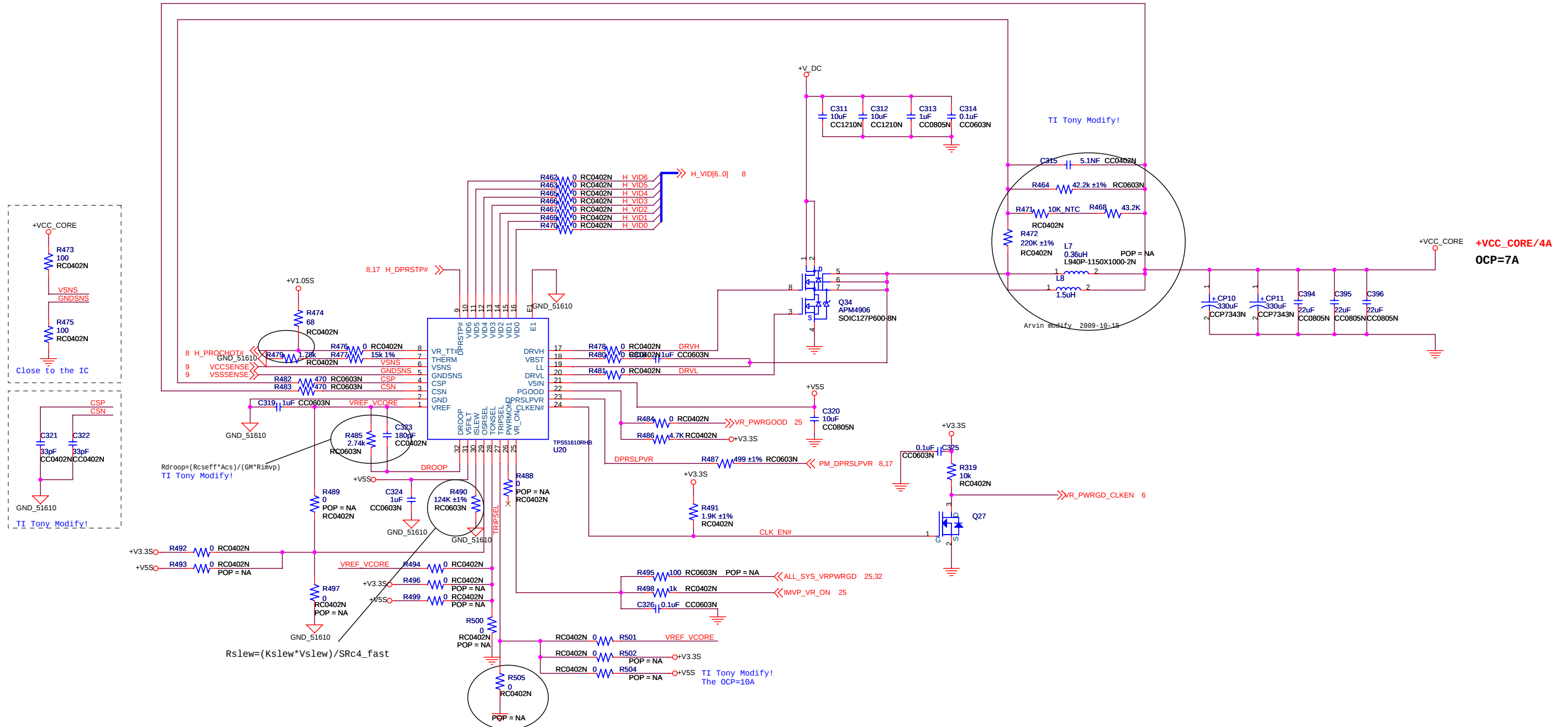
Size C	Sheet Name	Power_+v1.8	Rev A
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ENGINEER: Wain

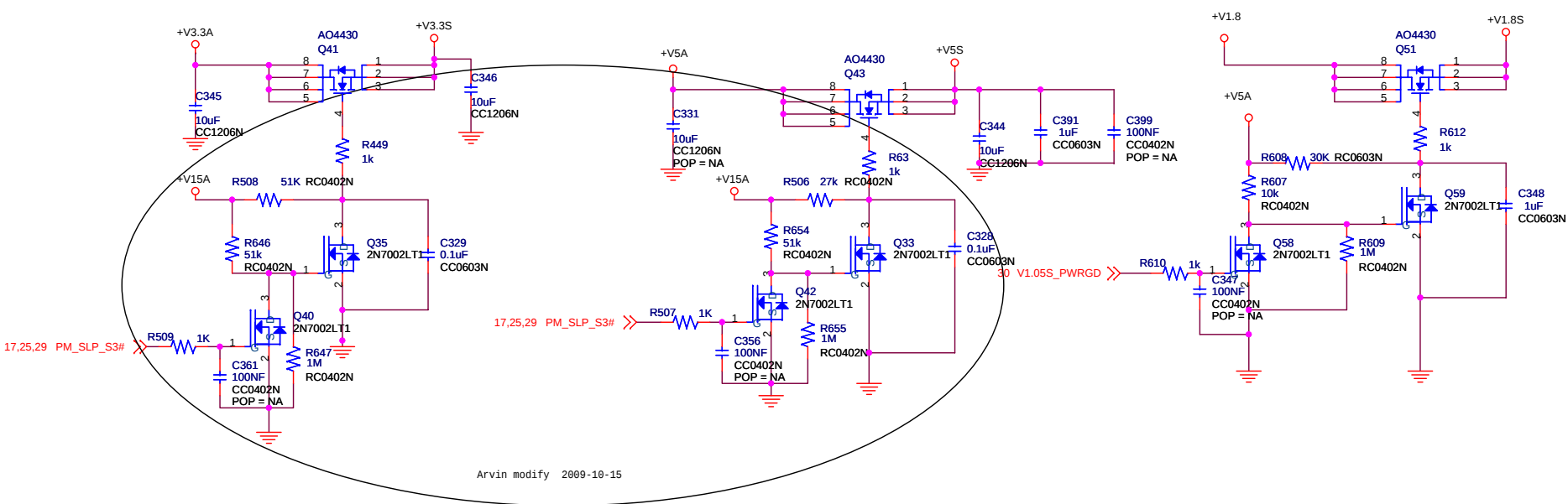
Date: Wednesday, November 04, 2009

Sheet 29 of 36

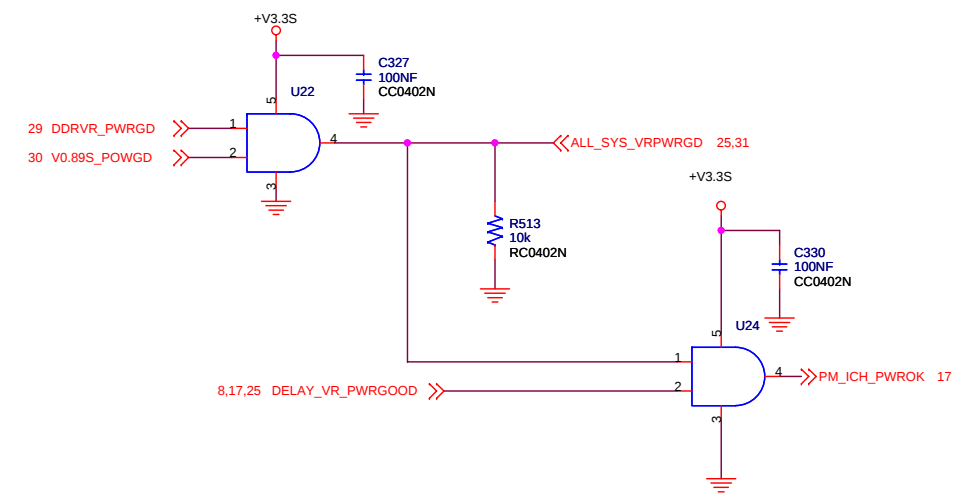




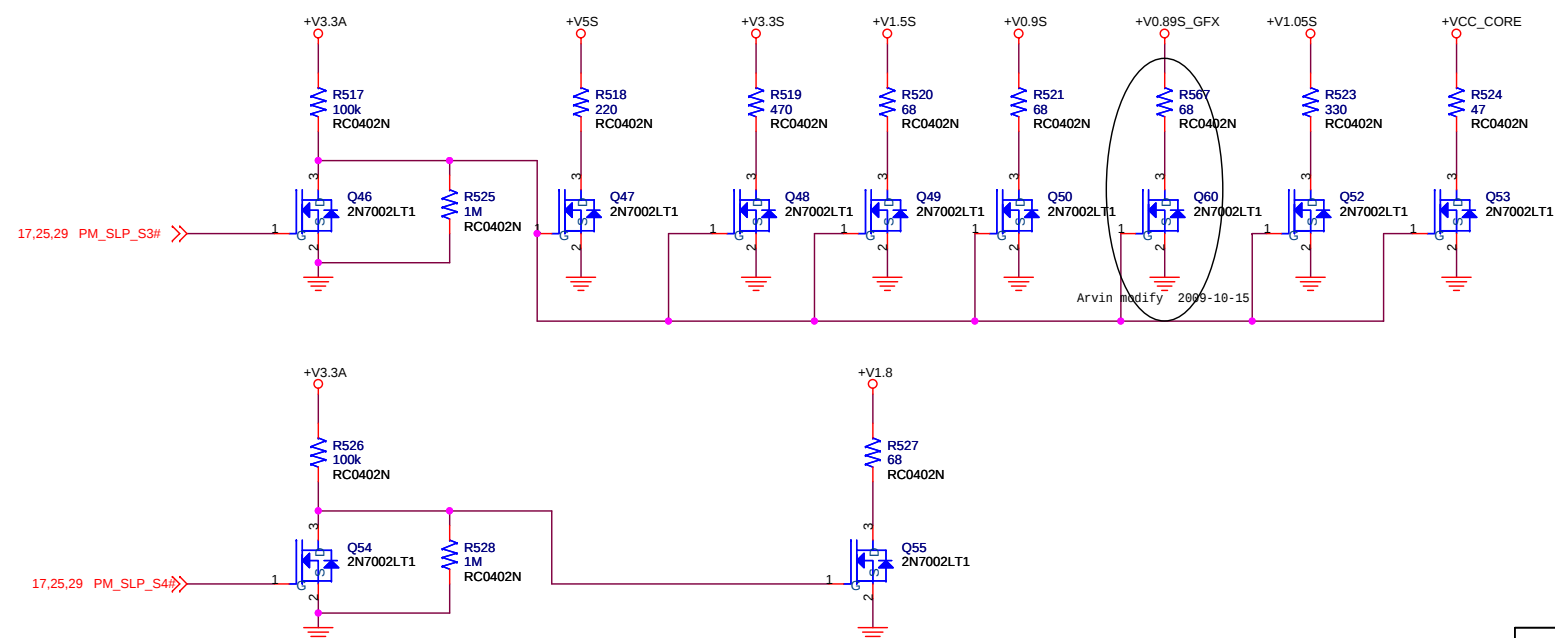
S3 /S4 Power control



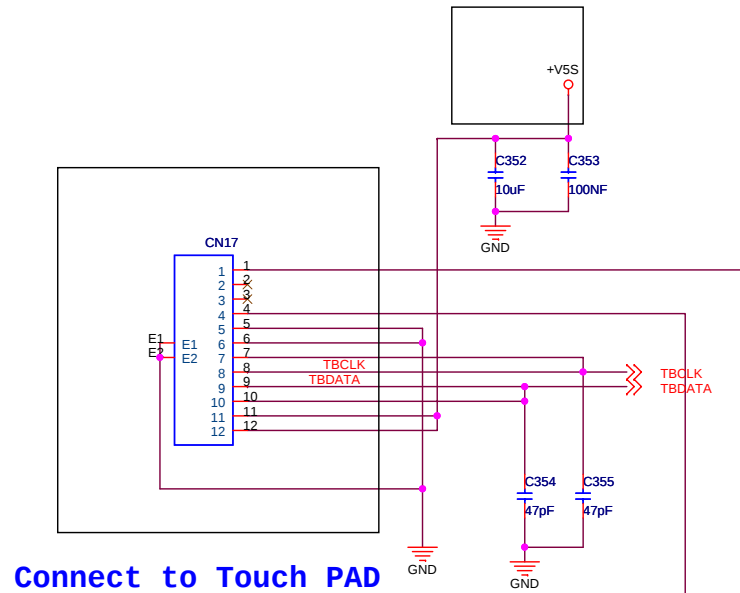
Power Good



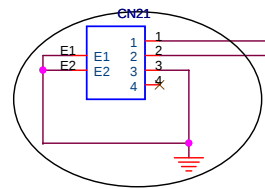
Power Discharge Circuit



	Lengda Technology Ltd. 5th floor,Block K, Xiamen Exprot Processing Zone, Haicang District,Xiamen,China,361026		
	Title <Title>		
Size C	Sheet Name	Power_S3_S4/Power Good	Rev A
ENGINEER: Wain		Date: Wednesday, November 04, 2009	Sheet 32 of 36



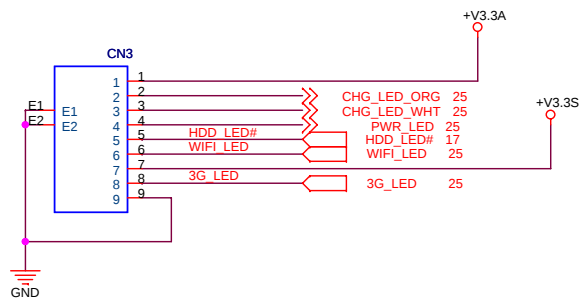
Connect to Touch PAD



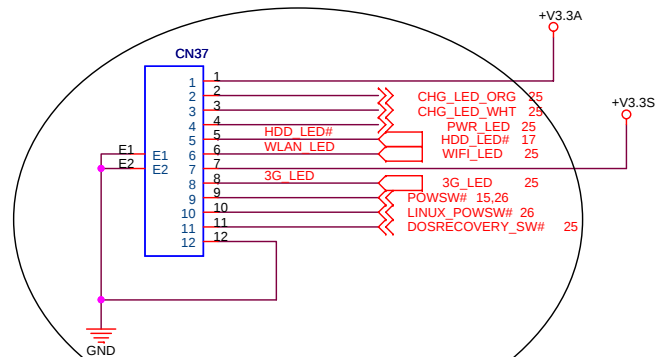
modify 1.0mm pitch 2009-10-15

TO TP_BOARD

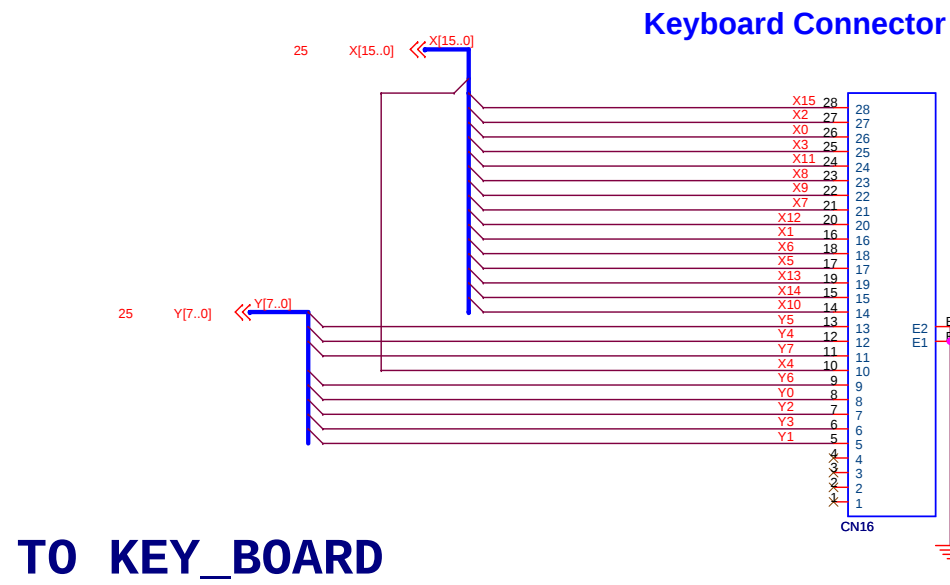
TO LED_BOARD



T0 princeton sw_BOARD

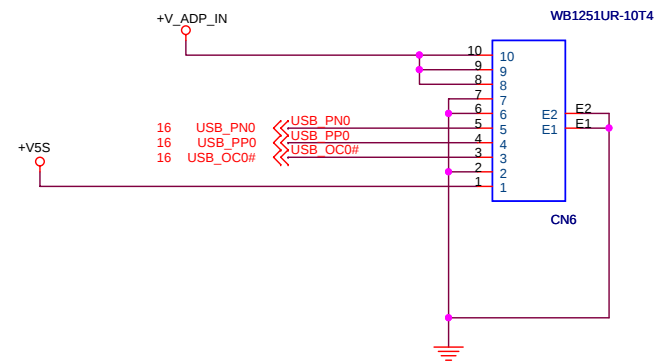


Add power switch connector 2009-10-15

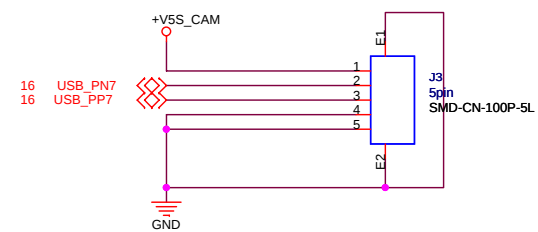
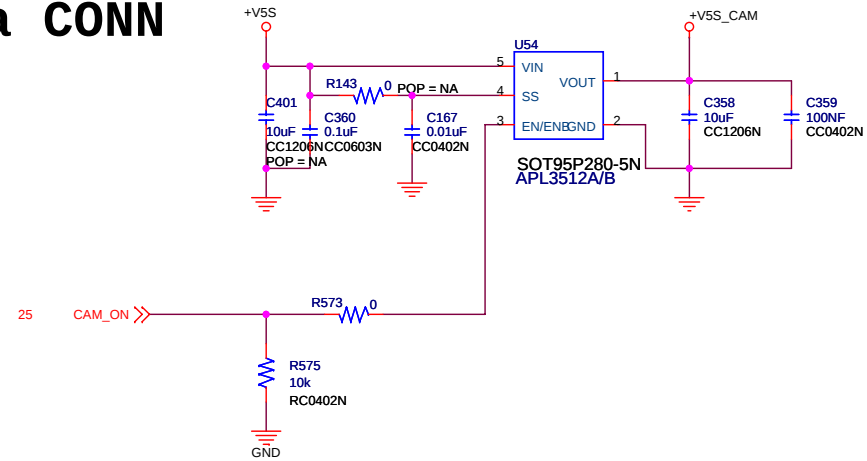


TO KEY_BOARD

TO DCIN_BOARD



Camera CONN



- 5

4

3

2

1
- D

C

B

A
- 1.H_PROCHOT# 上拉改到电阻前，靠近CPU PIN

2.CN15:RTC 电池插座，PIN1和PIN2对换

3.Add X5,with X1 dualay,;X7,with X3 dualay 2009-10-15

4.Add touchscreen conector dmb conector mic connector 2009-10-15

5 Add 12pin connector & startup on system function 2009-10-15

6 Add L8,with L7 dualay 2009-10-15

7 modify +V3.3S & +V5S CIRCUIT 2009-10-15