



PCB

DA80000B000

# Compal Confidential

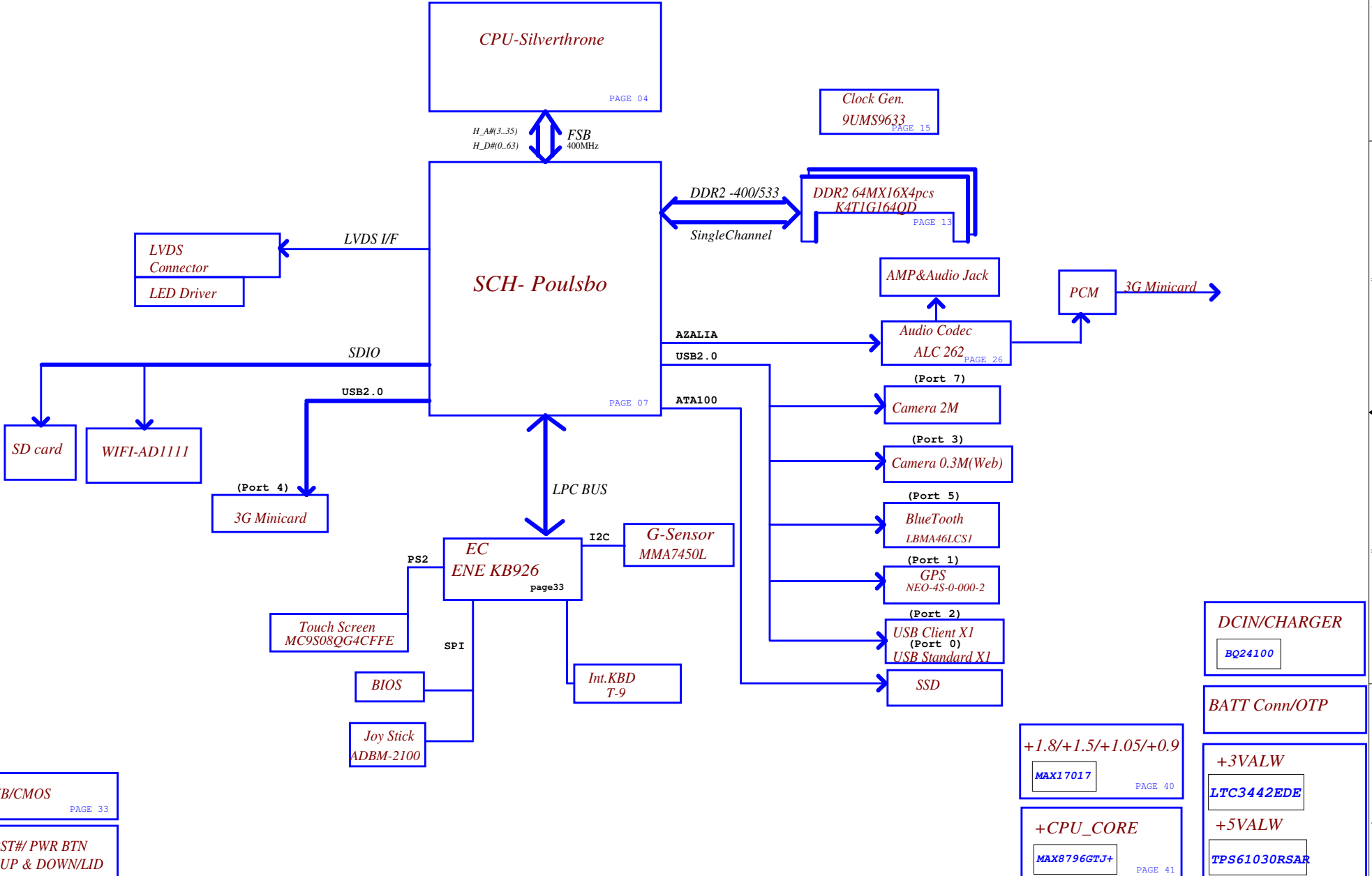
Monday, April 28, 2008

## Amazon Schematics Document

## Menlow-Silverthorne with Poulsbo

Security Classification	Compal Secret Data			Title <i>Compal Electronics, Inc.</i>		
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INT KB/CMOS  
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RTCST#/ PWR BTN  
VOL\_UP & DOWN/LID  
Shutter BTN  
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**Voltage Rails**    O MEANS ON    X MEANS OFF

power plane / State	+VBAT	+5VALW +3VALW	+1.8V +0.9V	+5VS +3VS +1.8VS +1.5VS +CPU_CORE +VCCP	CLOCK
S0	O	O	O	O	O
S3	O	O	O	X	X
S5 S4/AC	O	O	X	X	X
S5 S4/ Battery only	O	X	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X	X

O MEANS ON    S3 : STR  
X MEANS OFF    S4 : STD  
                     S5 : SOFT OFF

**SKU ID Table**

Vcc	3.3V +/- 5%			
Ra	100K +/- 5%			
Board ID	Rb	V <sub>AD_BID</sub> min	V <sub>AD_BID</sub> typ	V <sub>AD_BID</sub> max
* 0	0	0 V	0 V	0 V
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V
2	18K +/- 5%	0.436 V	0.503 V	0.538 V
3	33K +/- 5%	0.712 V	0.819 V	0.875 V
4	56K +/- 5%	1.036 V	1.185 V	1.264 V
5	100K +/- 5%	1.453 V	1.650 V	1.759 V
6	200K +/- 5%	1.935 V	2.200 V	2.341 V
7	NC	2.500 V	3.300 V	3.300 V

SKU ID	MB ID (H)	MB ID (L)
0		
* 1	IEL10	
2	IDL11	IDL01
3	HDL10	HDL00
4		HDL20
5	IDL12	HDL30
6		
7		

	MB ID
H	JAX10
L	JAX60

TBD

**BOM Structure**

MARK	FUNCTION
@	NC FOR ALL

Address

**USB PORT LIST**

PORT	DEVICE
0	SPR
1	Client
2	SPR
3	CMOS
4	3G, GPS
5	BT
6	
7	

**EC SM Bus1 address**

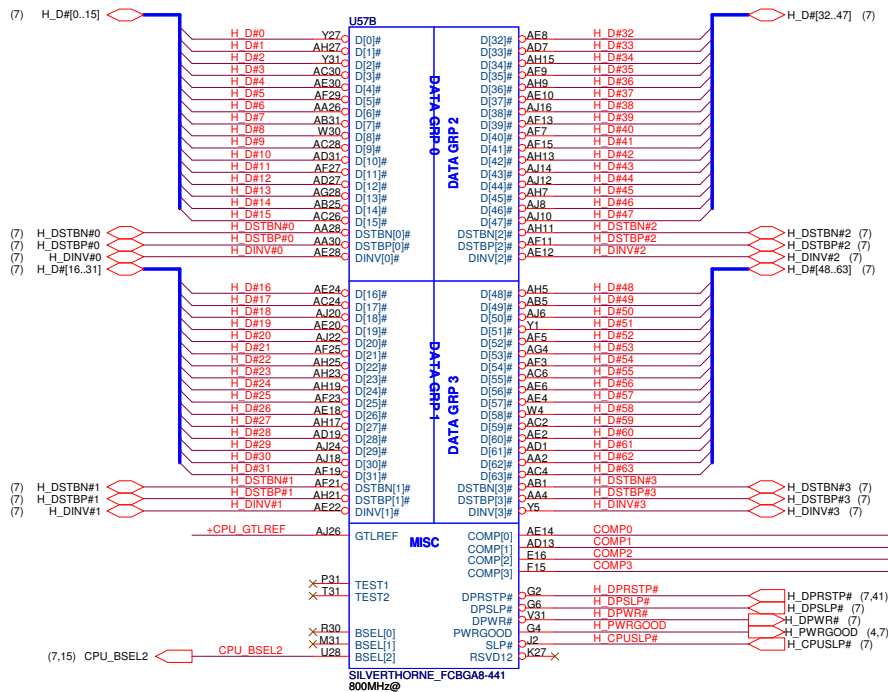
**EC SM Bus2 address**

Device	Address	Device	Address
EEPROM(24C16/02)	1010 000X b	ADM1032	1001 100X b

**Poulsbo SM Bus address**

Device	Address
Clock Generator (ICS954226)	1101 001Xb

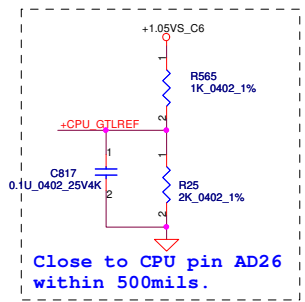




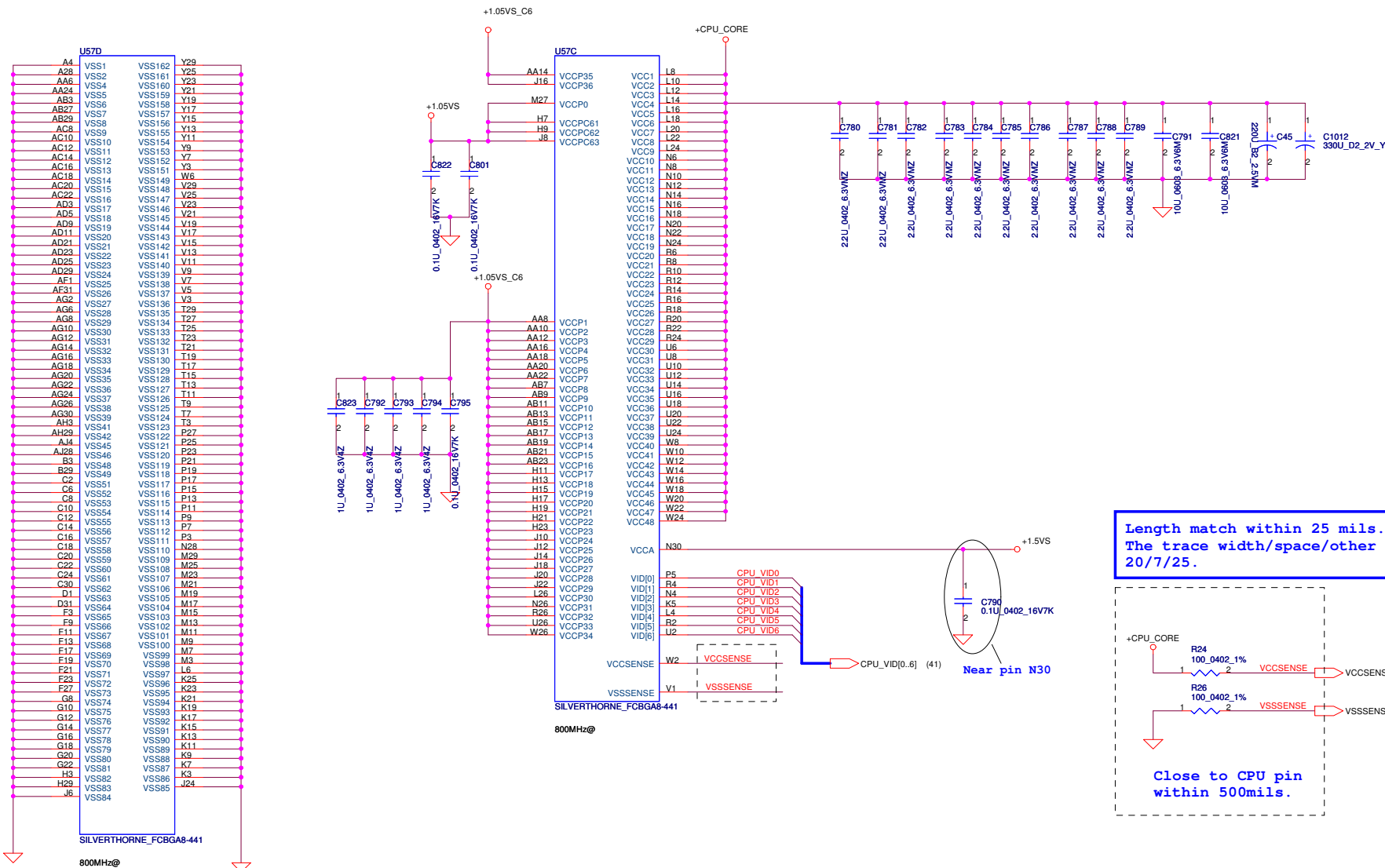
layout note: Route TEST3 & TEST5 traces on ground referenced layer to the TPs

CPU_BSEL	CPU_BSEL2	CPU_BSEL1	CPU_BSEL0
100	1	0	1
133	0	0	1

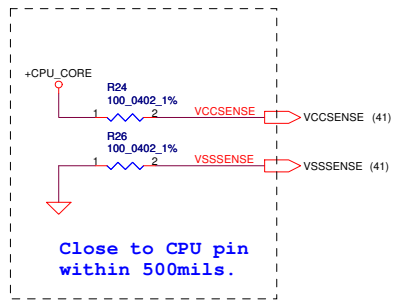
Resistor placed within 0.5" of CPU pin. Trace should be at least 25 mils away from any other toggling signal. COMP[0,2] trace width is 18 mils. COMP[1,3] trace width is 4 mils.



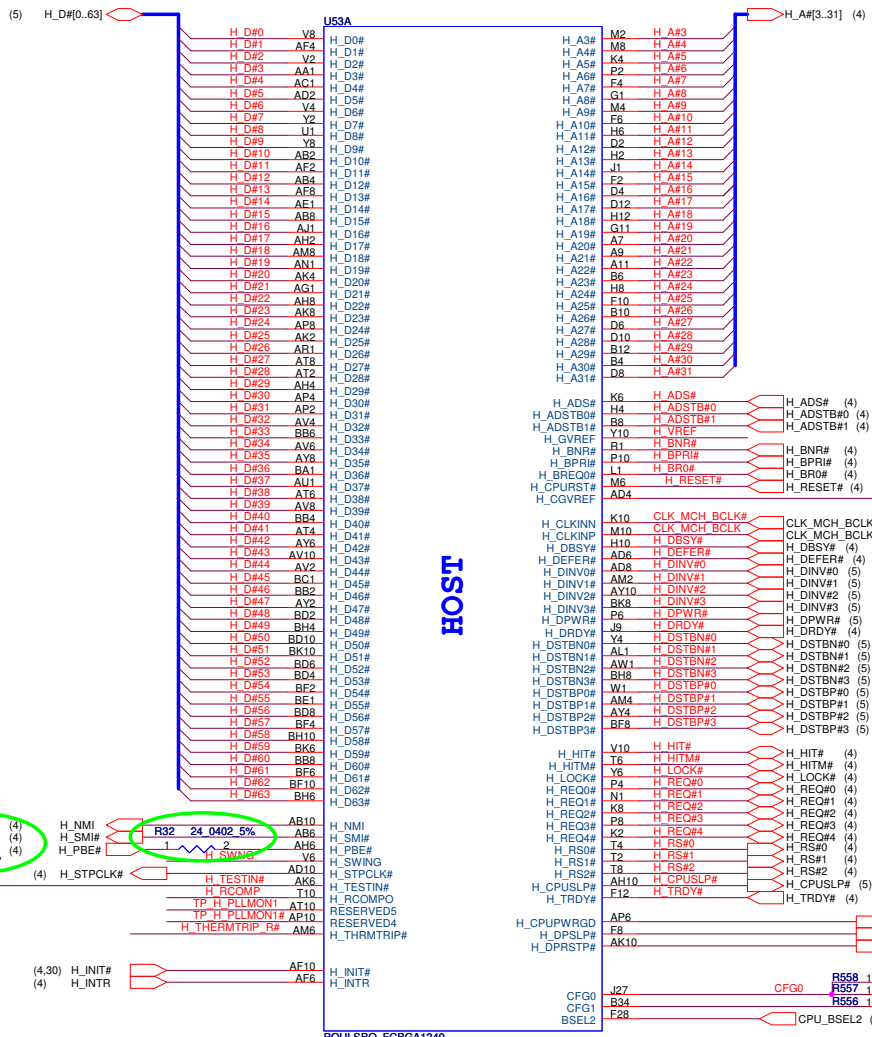
Close to CPU pin AD26 within 500mils.



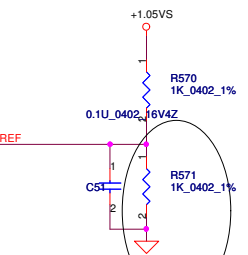
Length match within 25 mils.  
The trace width/space/other is 20/7/25.



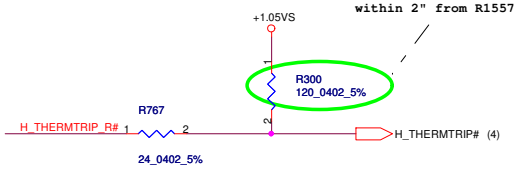
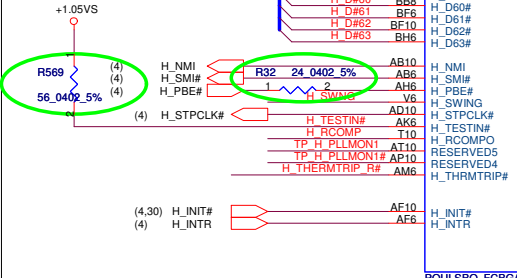
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HOST

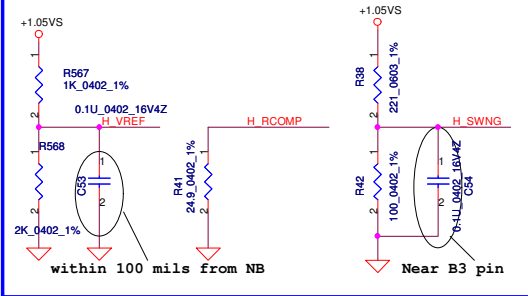


In pre-ES R571=2k H\_CGVREF=2/3VCCP  
In ES R571 choose 1k

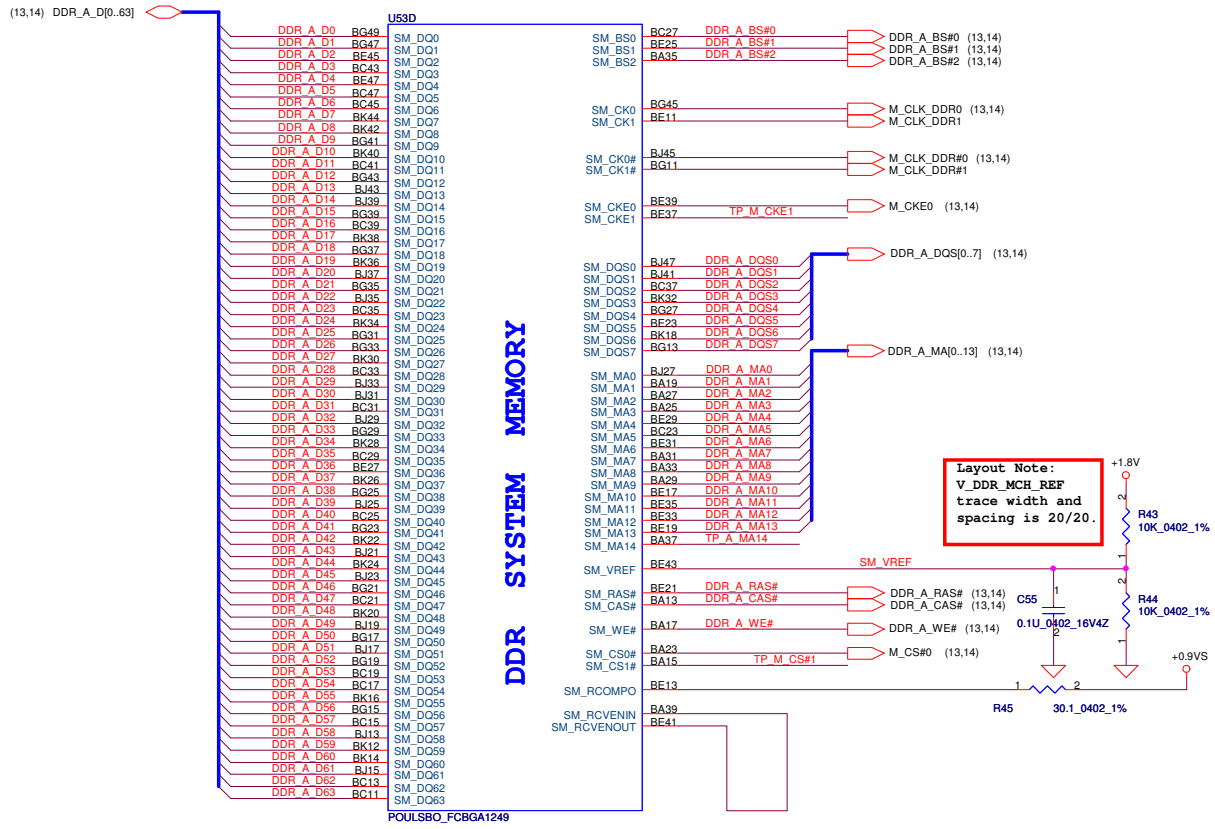


layout note:  
Route H\_SCOMP and H\_SCOMP# with trace width, spacing and impedance (55 ohm) same as FSB data traces

Layout Note:  
H\_RCOMP / H\_VREF / H\_SWNG  
trace width and spacing is 10/20



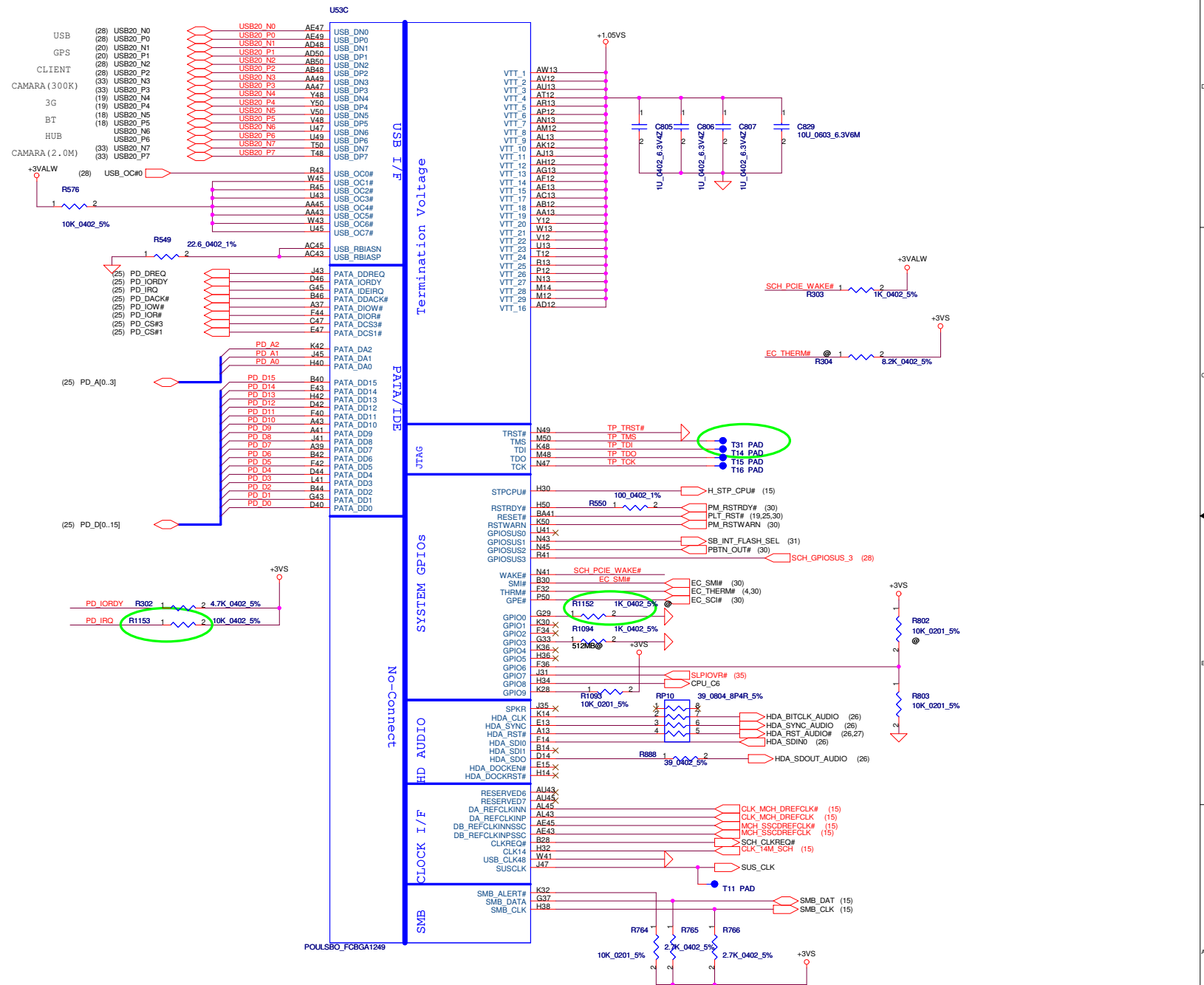
FSB	BSEL2	CFG1	CFG0	FSB DDR
100	1	0	0	100
133	0	0	1	133



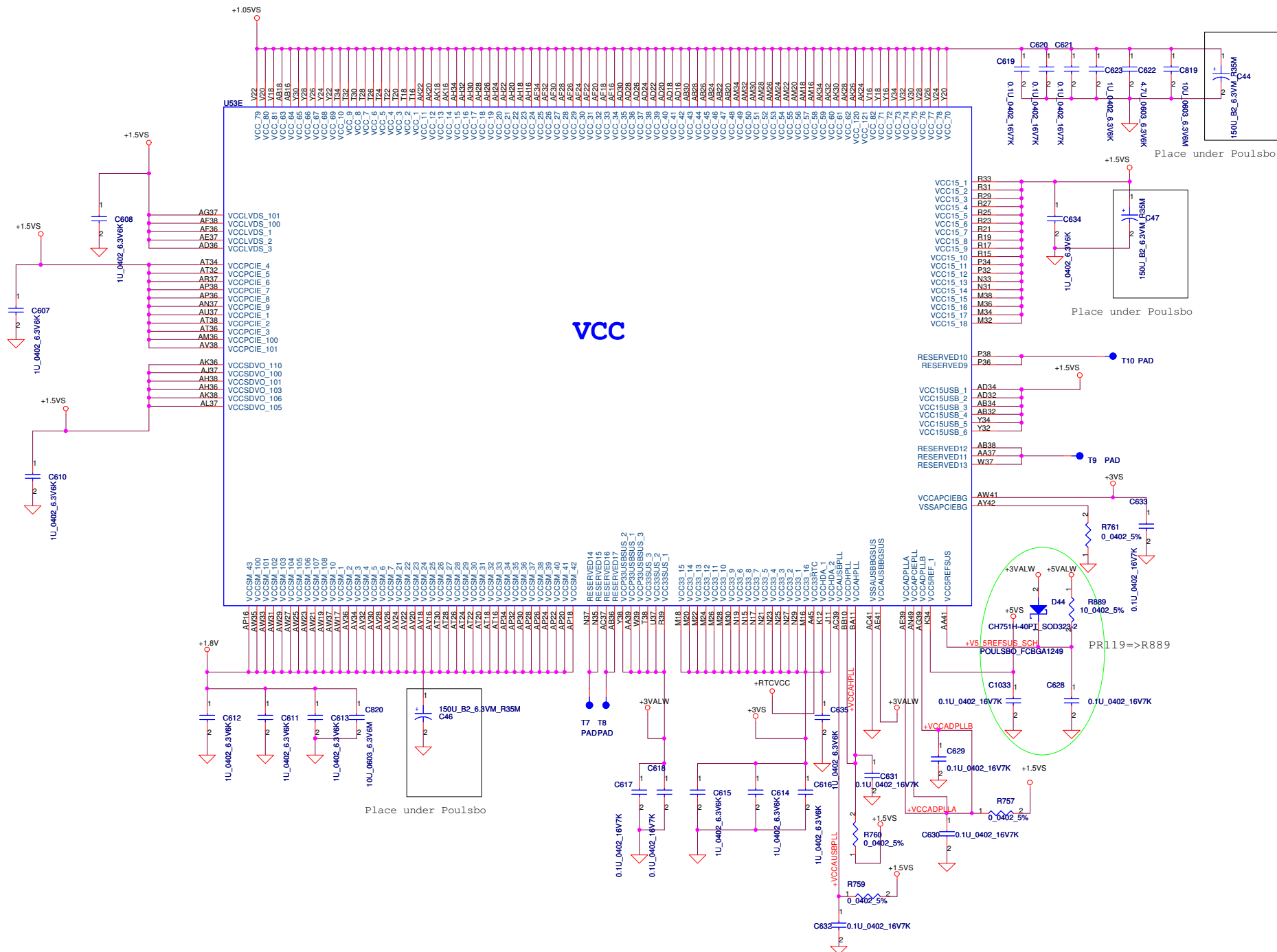
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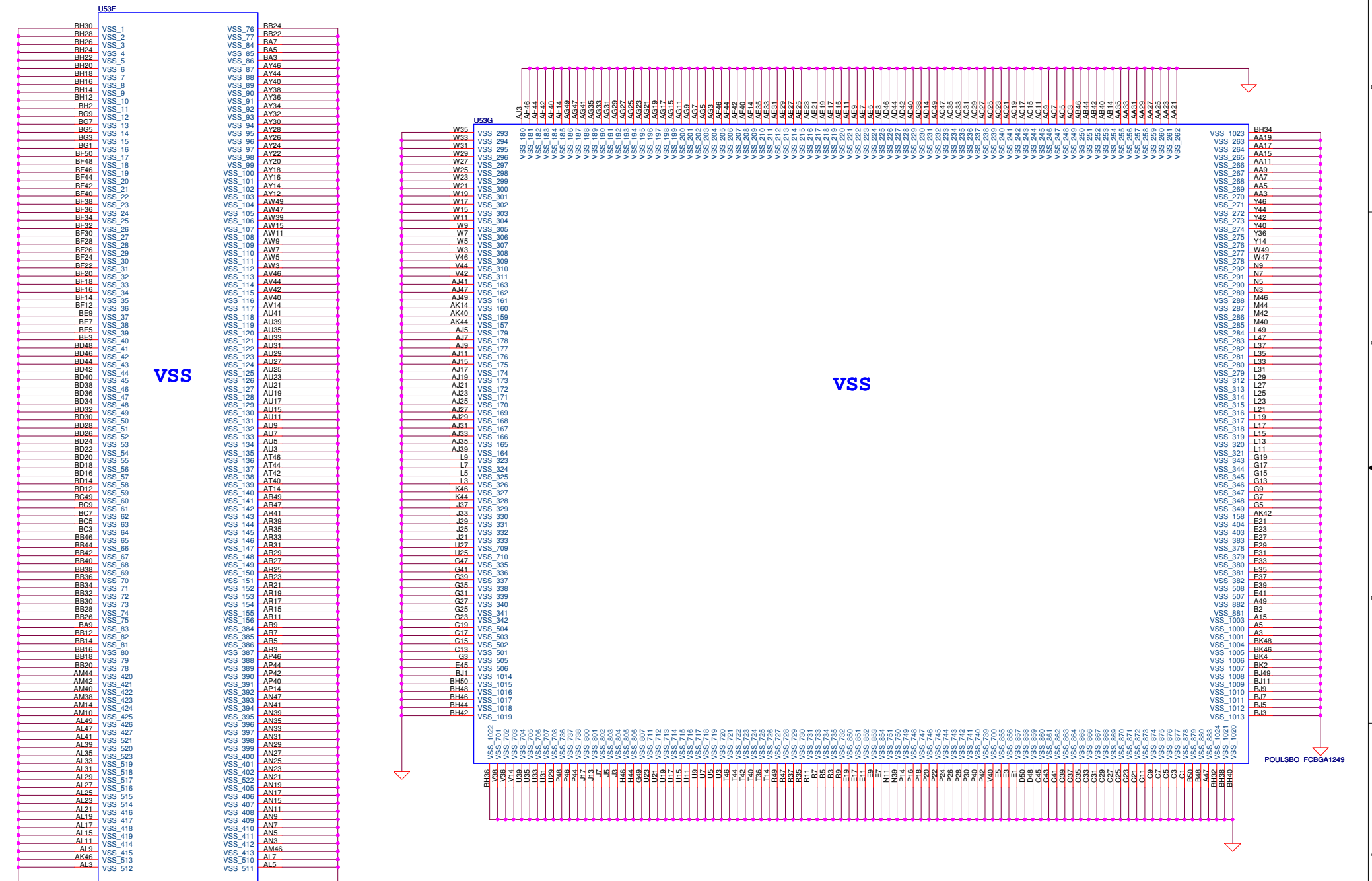






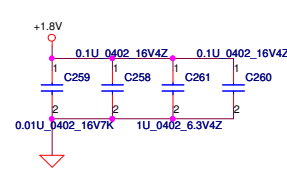
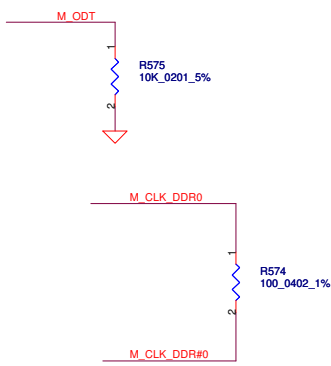
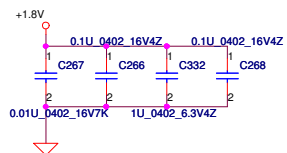
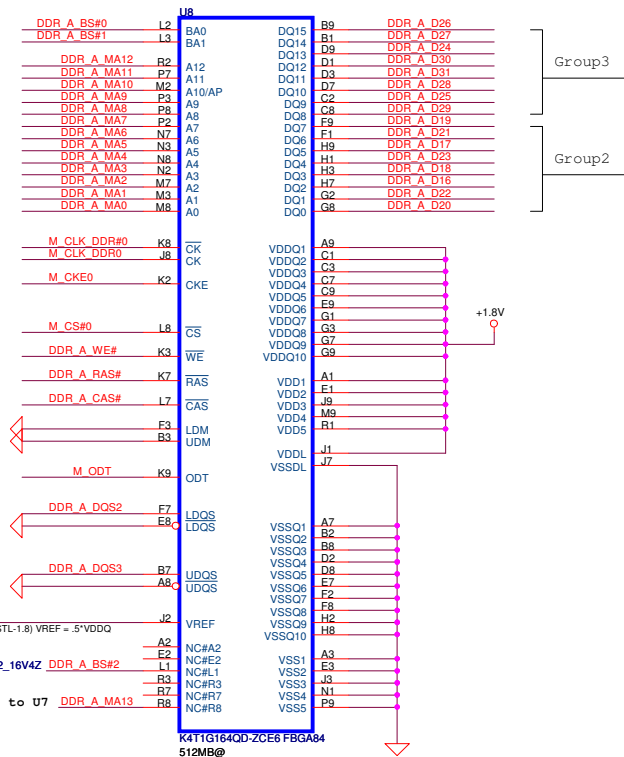
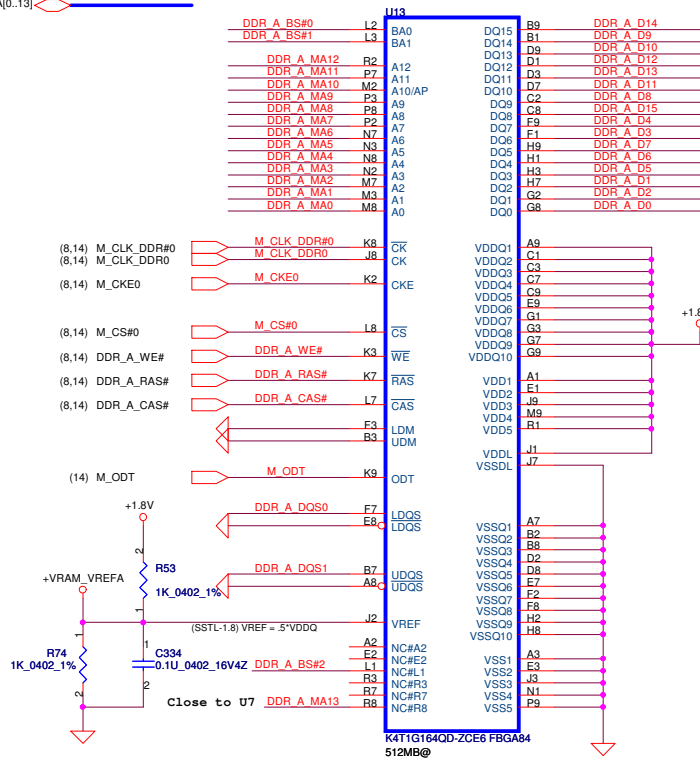
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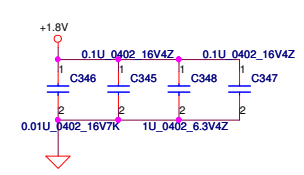
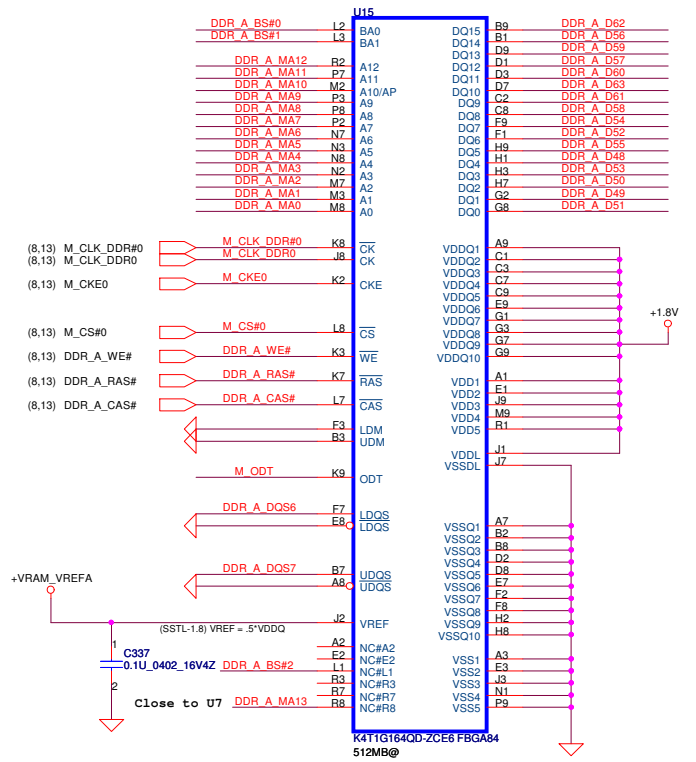
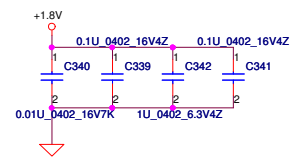
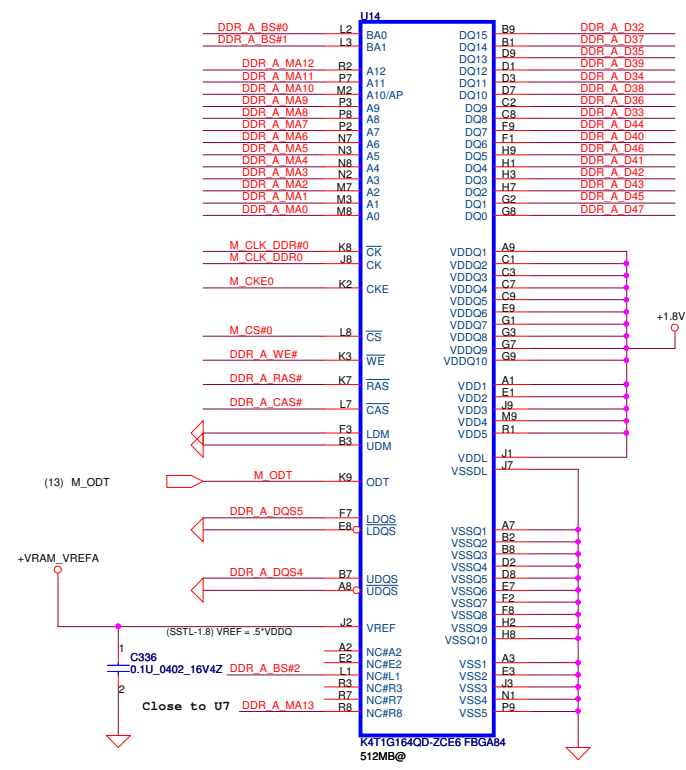
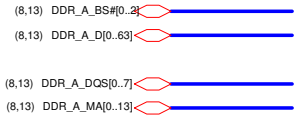


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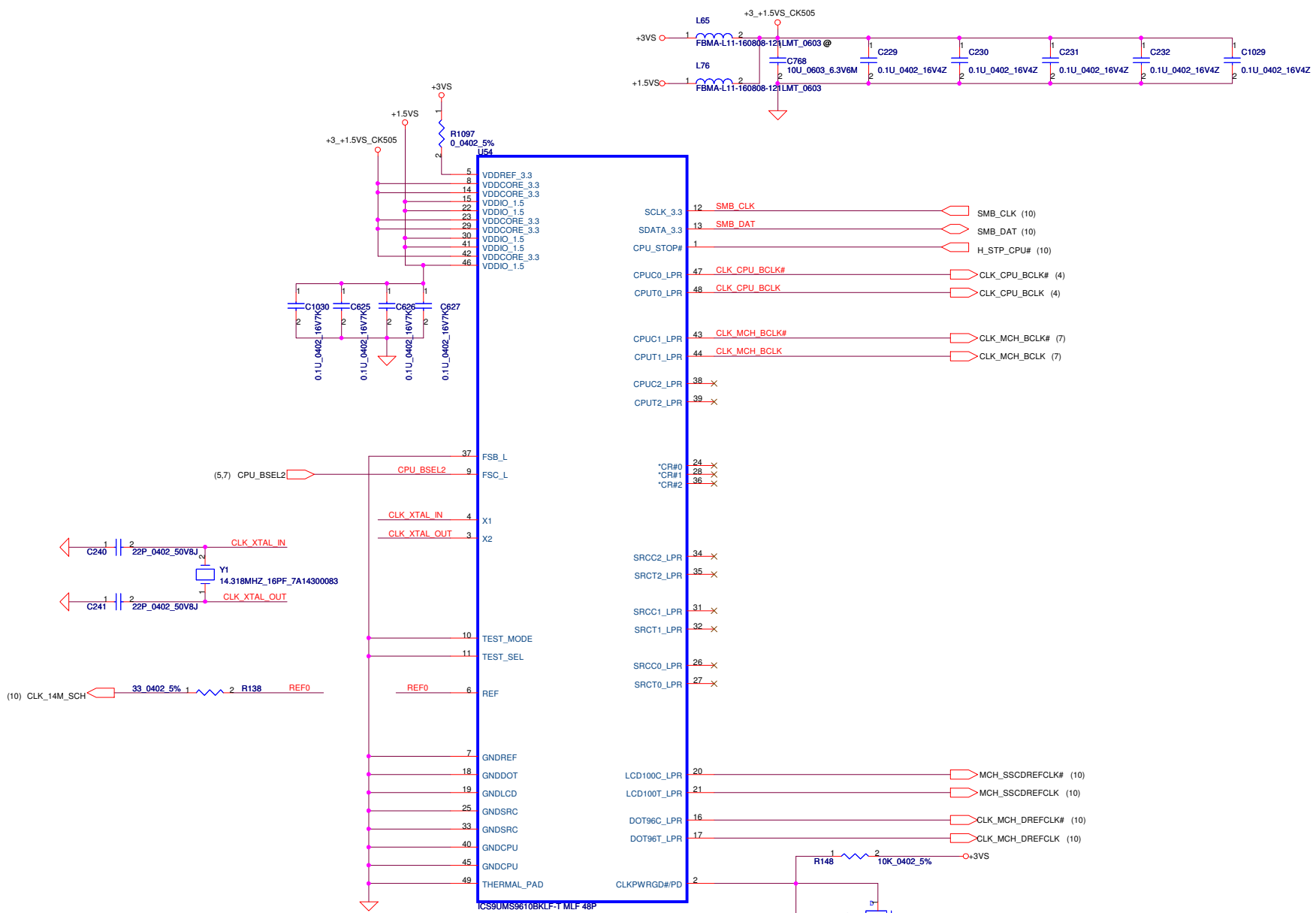
(8,14) DDR\_A\_BS#[0..2]  
 (8,14) DDR\_A\_D[0..63]  
 (8,14) DDR\_A\_DQS[0..7]  
 (8,14) DDR\_A\_MA[0..13]



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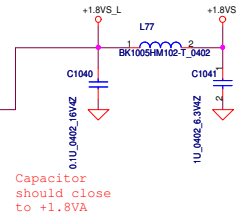
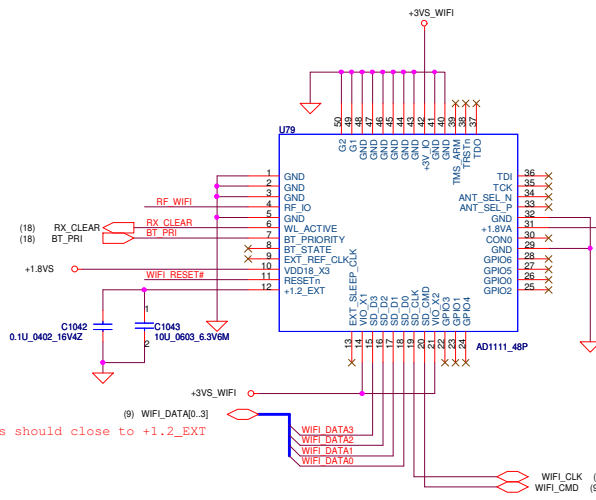
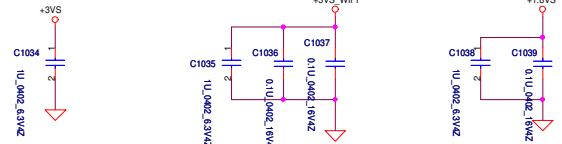
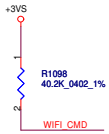
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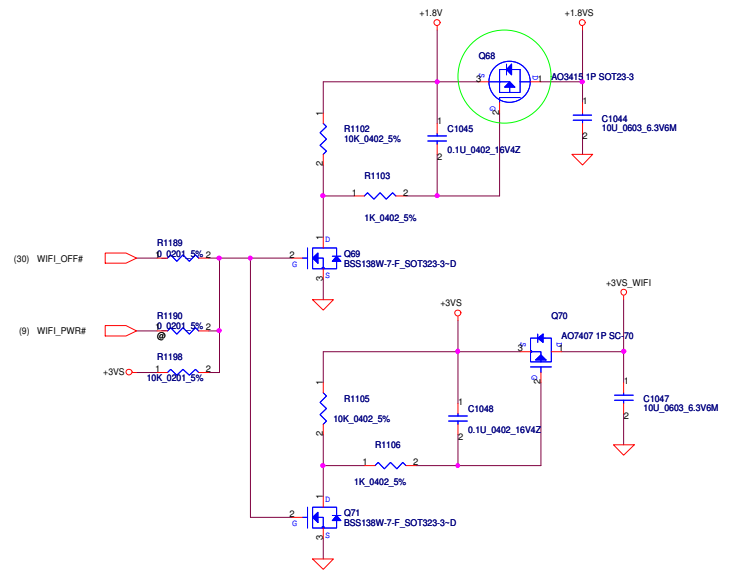
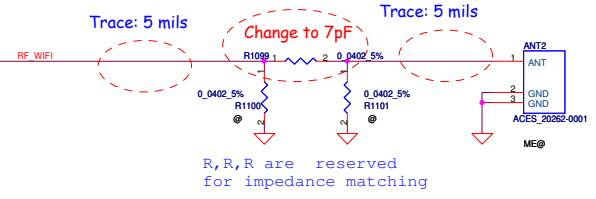


3.3V operation 120mA  
 1.8V operation 200mA

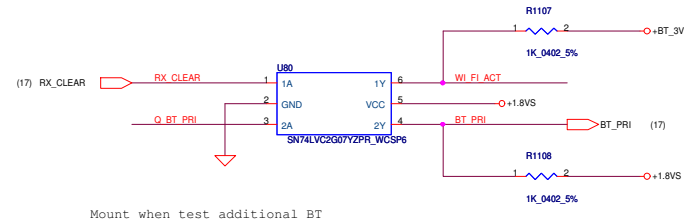
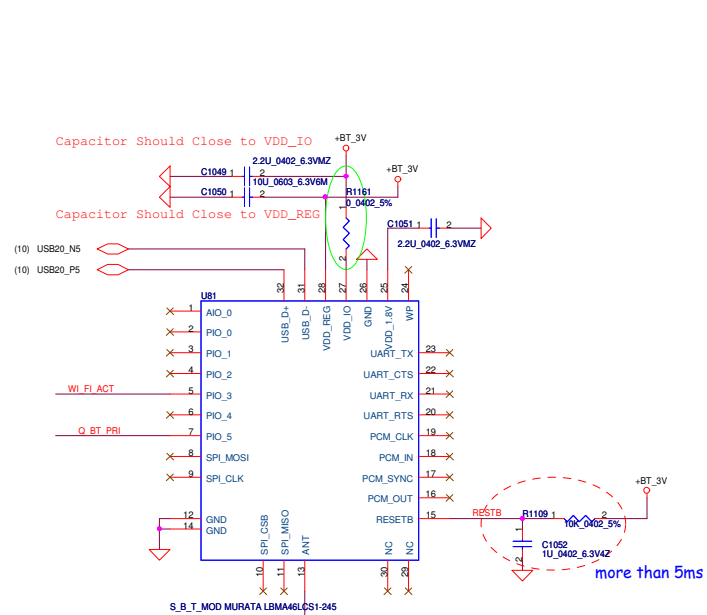
SDIO Signal Level



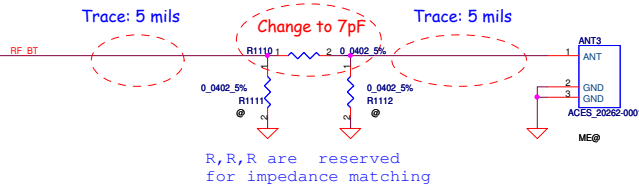
Capacitors should close to +1.2\_EXT



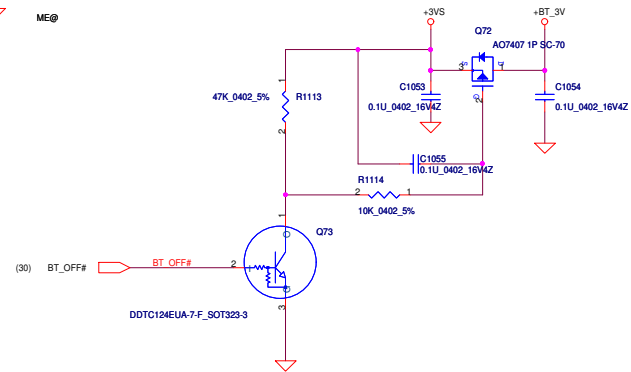
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Mount when test additional BT

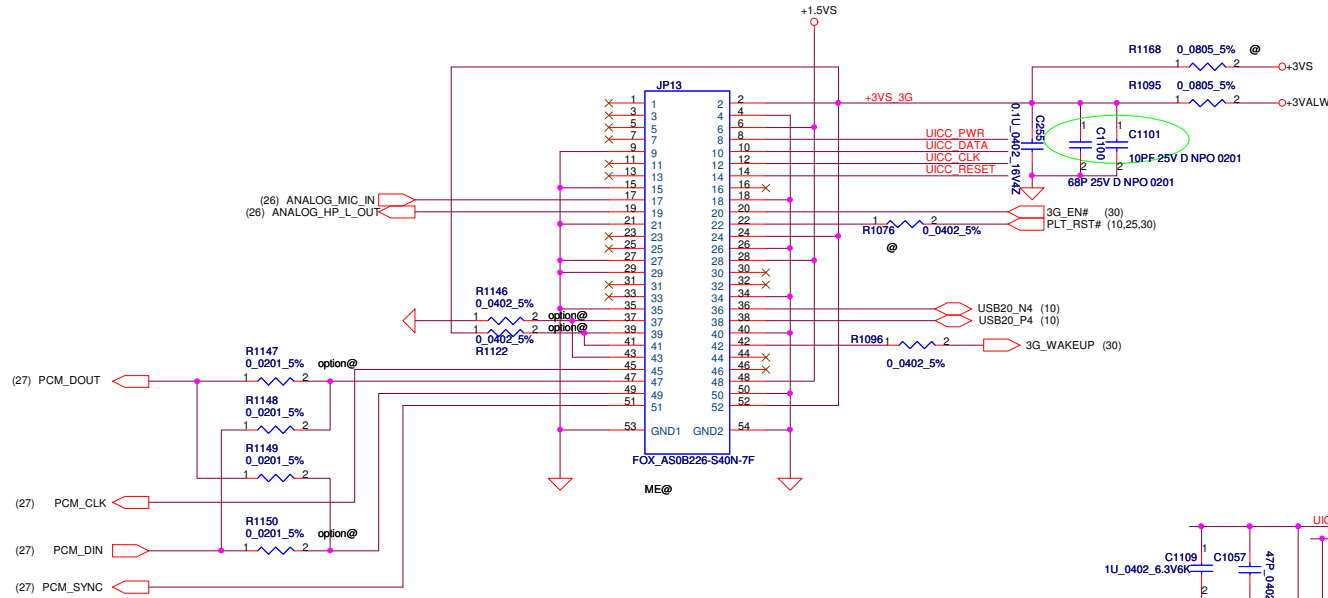


R,R,R are reserved for impedance matching

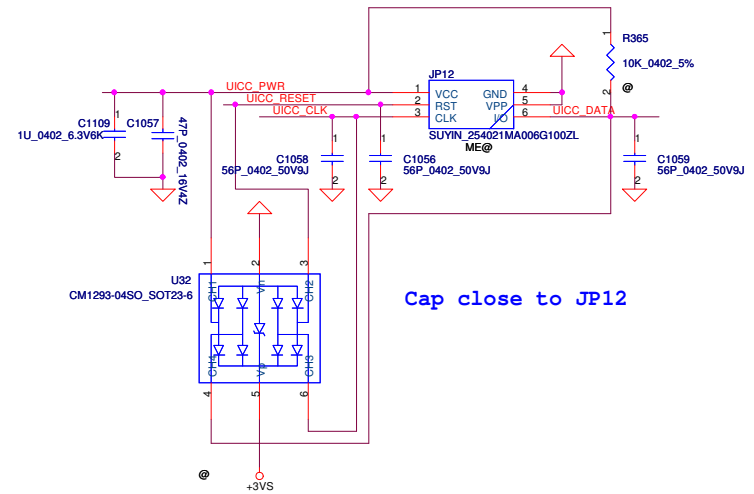


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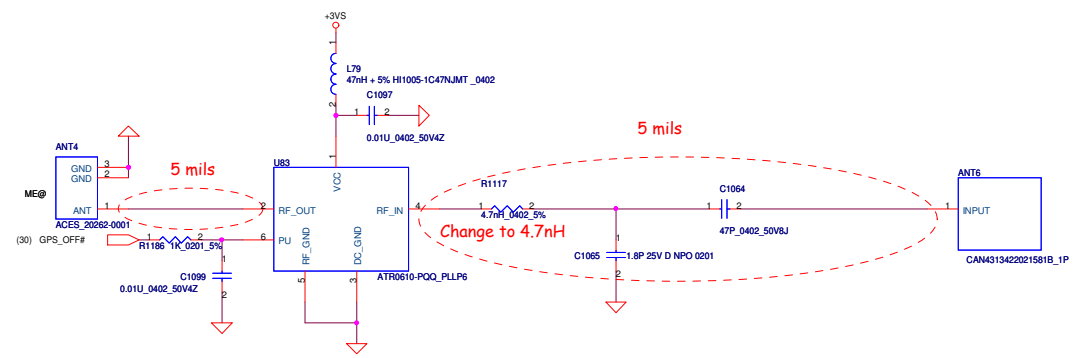
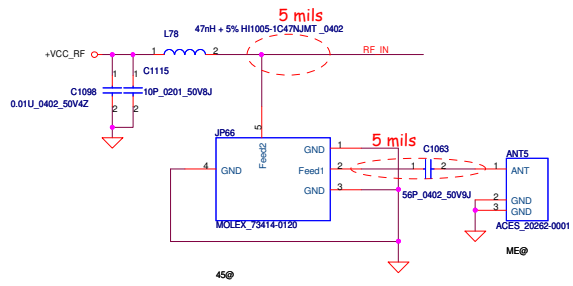
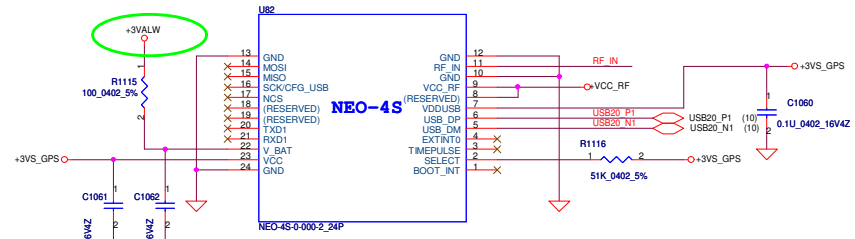
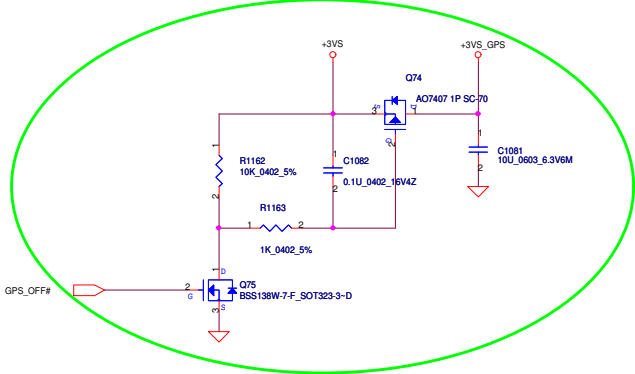
# MINI-EXPRESS CARD



# SIM Connector



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4

3

2

1

D

D

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C

B

B

A

A

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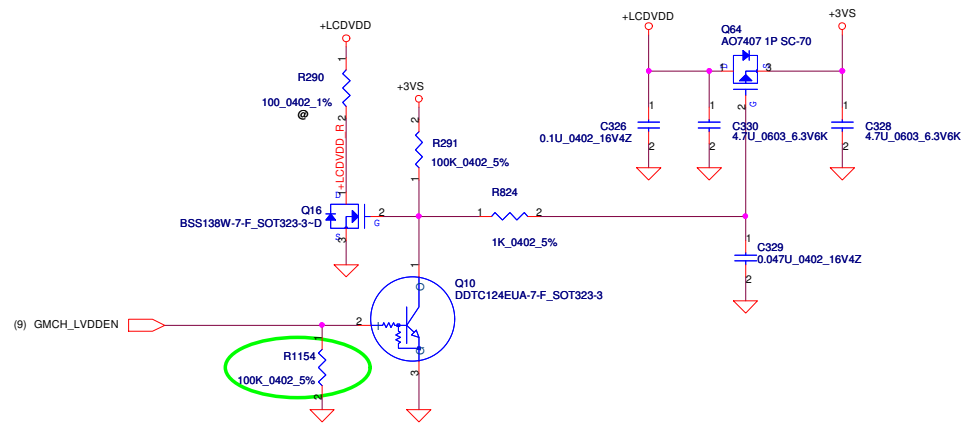
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4

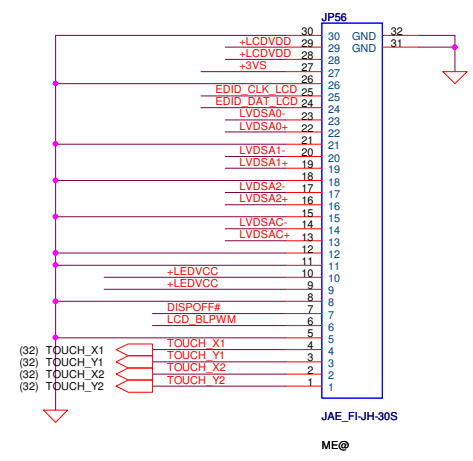
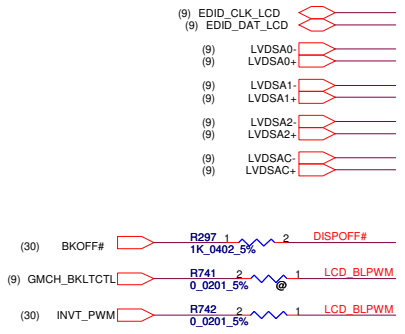
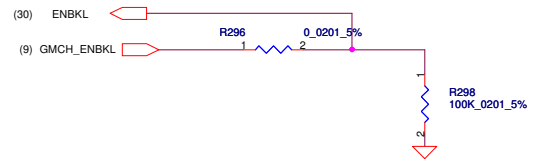
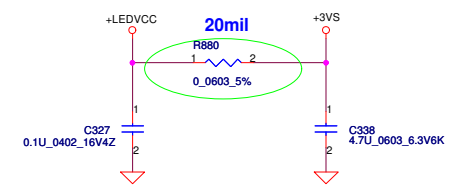
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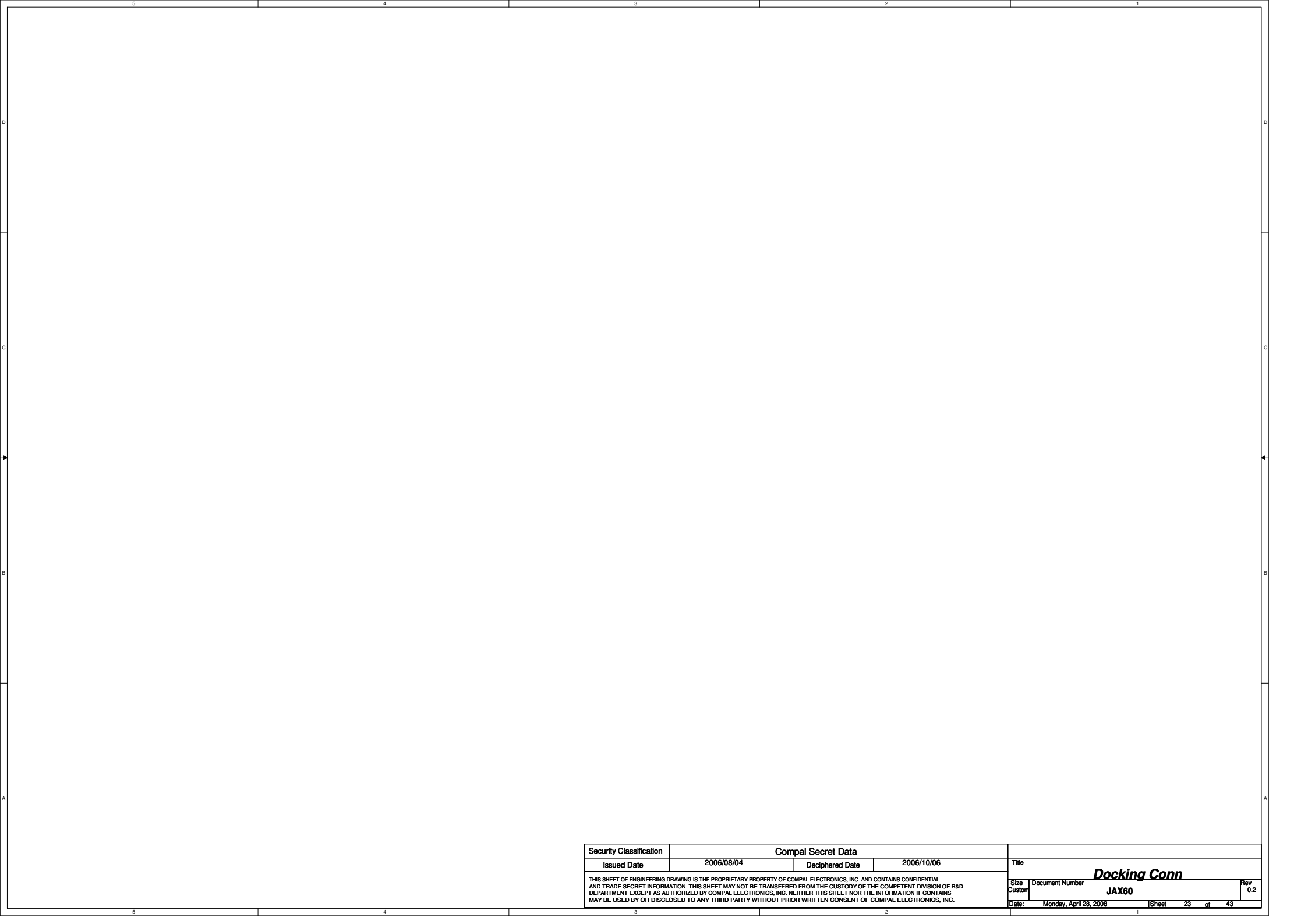
1



**LED Driving 2 parallel string of 6 serial power consumption 1.6W 0.5A max**



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4

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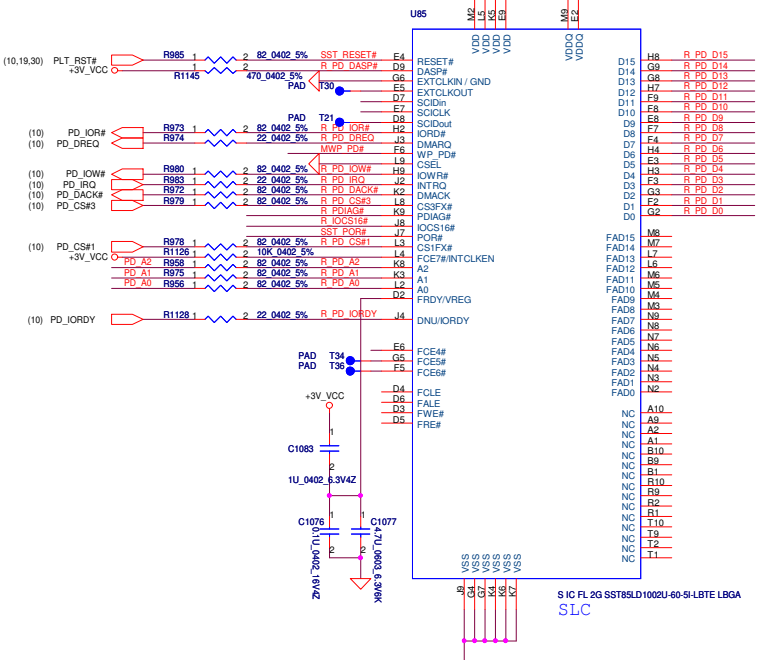
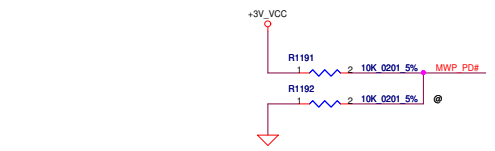
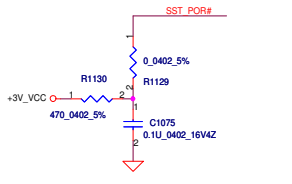
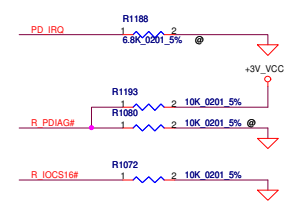
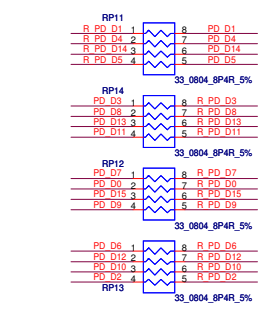
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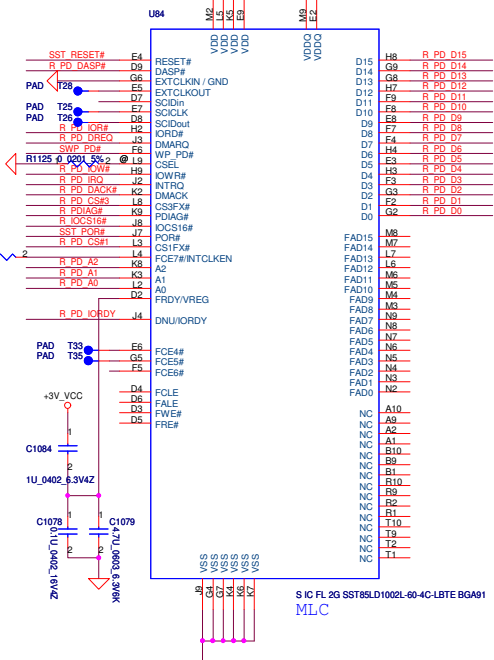
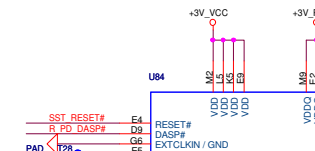
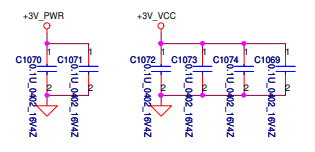
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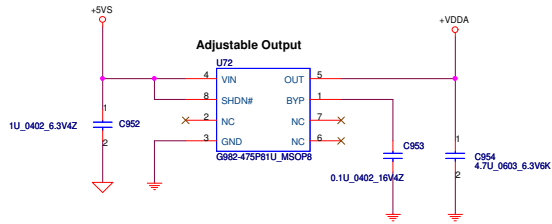


S I C FL 2G SST85LD1002U-60-LBTE LBGA SLC



S I C FL 2G SST85LD1002L-60-4C-LBTE BGA91 MLC

# Regulator for CODEC



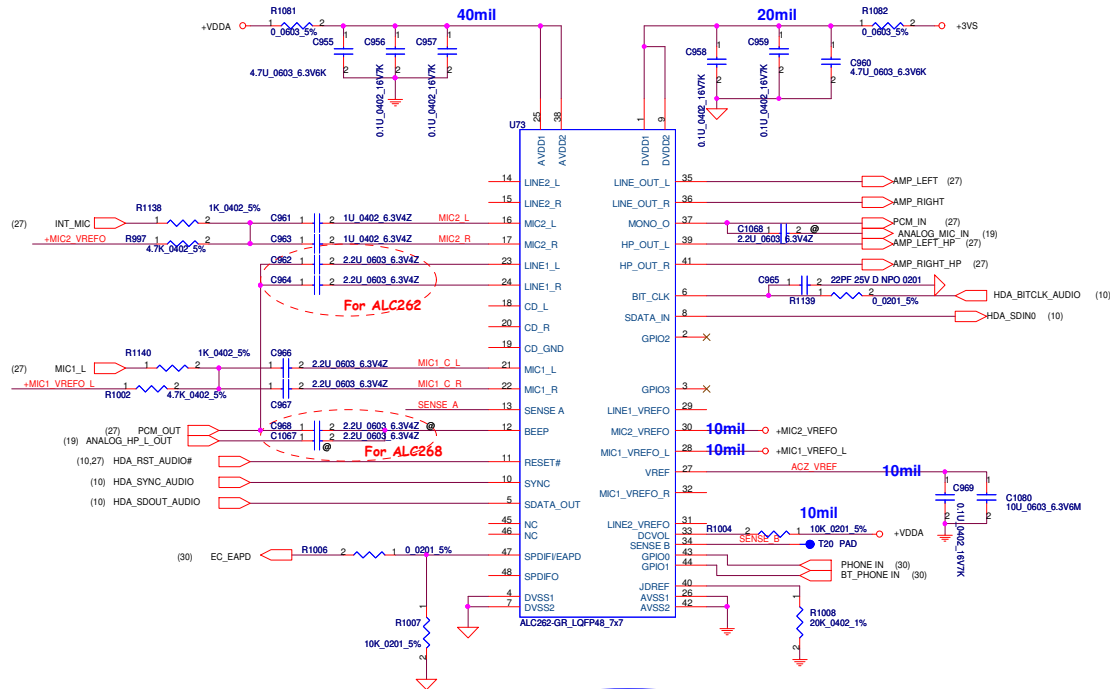
	GPIO Low	GPIO High
GPIO1 Low	codec phone call mode is off	codec phone call mode on
GPIO1 High	codec phone call mode is off	codec phone call mode on But Headphone/Speaker/Mic are off) Bluetooth is enabled

# HD Audio Codec

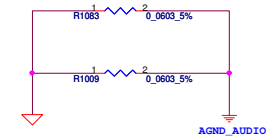
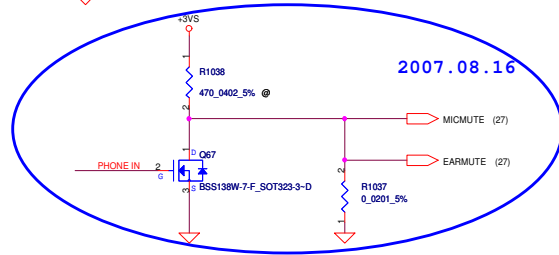
## SENSE FOR Ext. Mic.



## SENSE FOR HP

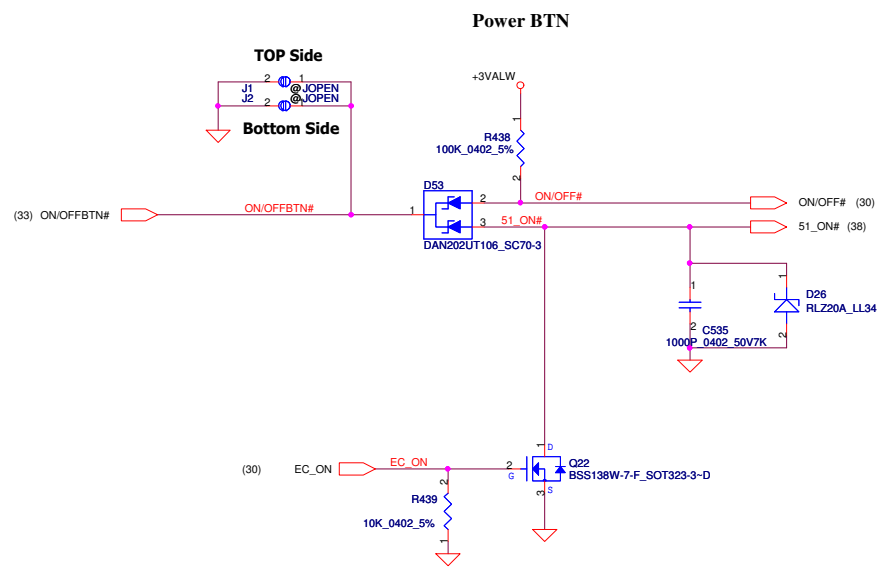


Sense Pin	Impedance	Codec Signals
SENSE A	39.2K	PORT-A (PIN 39, 41)
	20K	PORT-B (PIN 21, 22)
	10K	PORT-C (PIN 23, 24)
	5.1K	PORT-D (PIN 35, 36)
SENSE B	39.2K	PORT-E (PIN 14, 15)
	20K	PORT-F (PIN 16, 17)
	10K	PORT-G (PIN 43, 44)
	5.1K	PORT-H (PIN 45, 46)

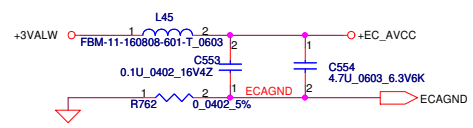
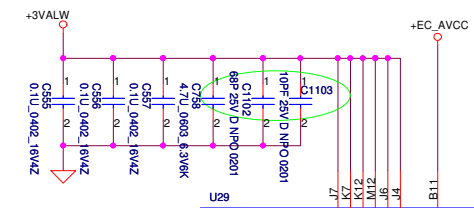
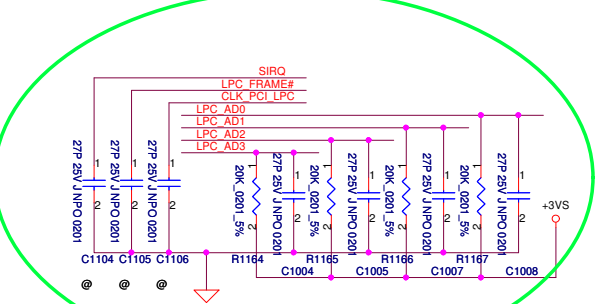




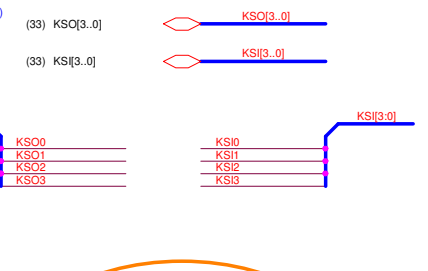
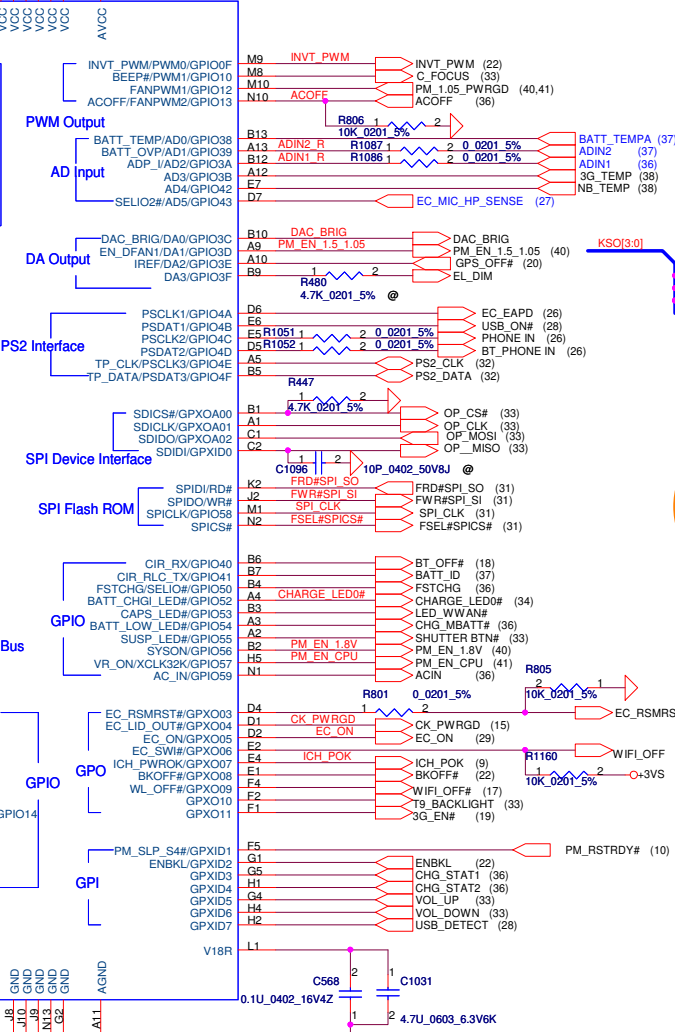
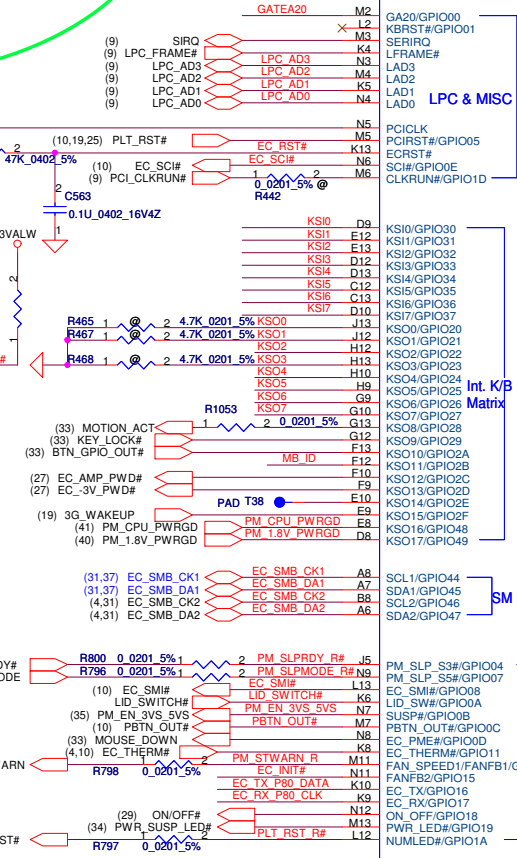
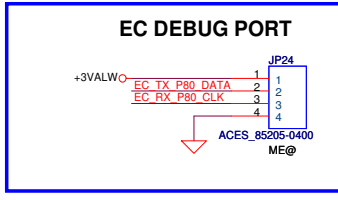
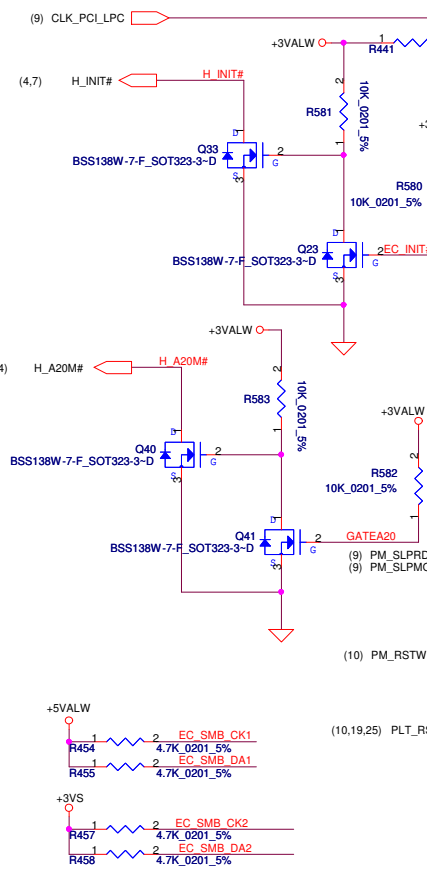
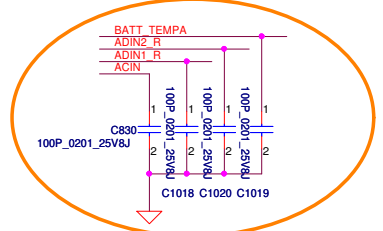




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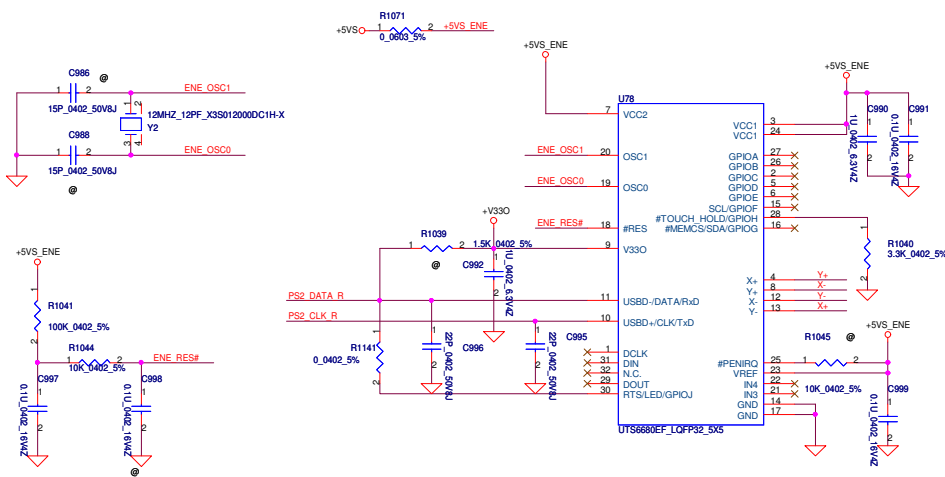
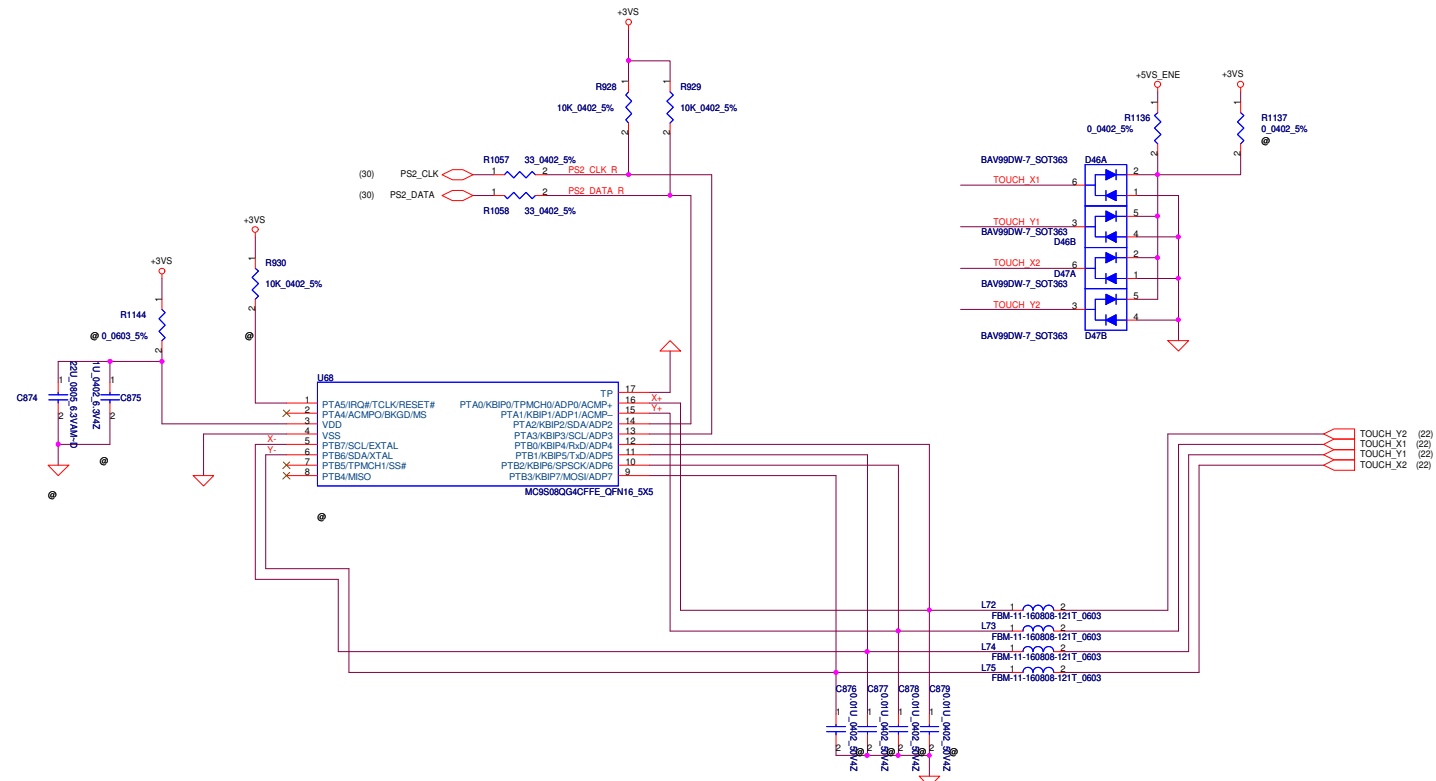


### KEYBOARD MATRIX



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				JAX60	Rev 0.2
				Date	Monday, April 28, 2008
				Sheet	32 of 43

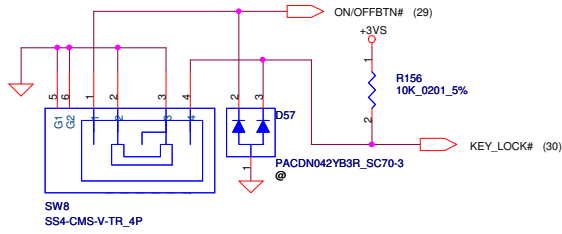
Compal Electronics, Inc.

TOUCH SCREEN

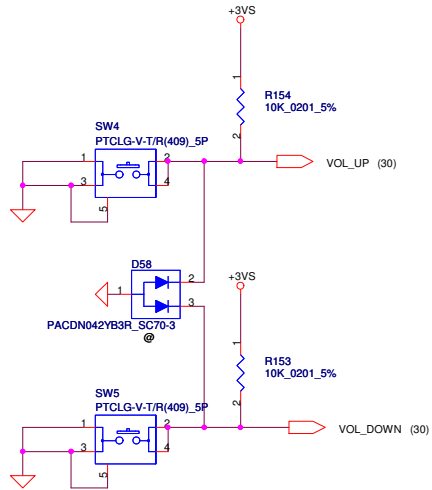
Monday, April 28, 2008 Sheet 32 of 43



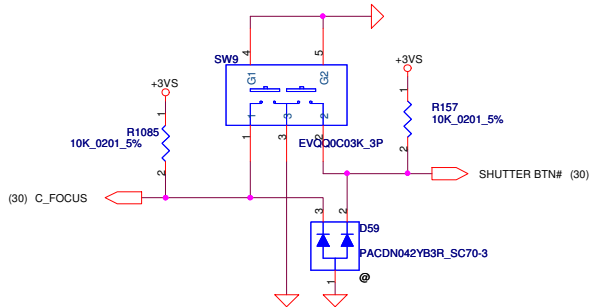
PWR SWITCH



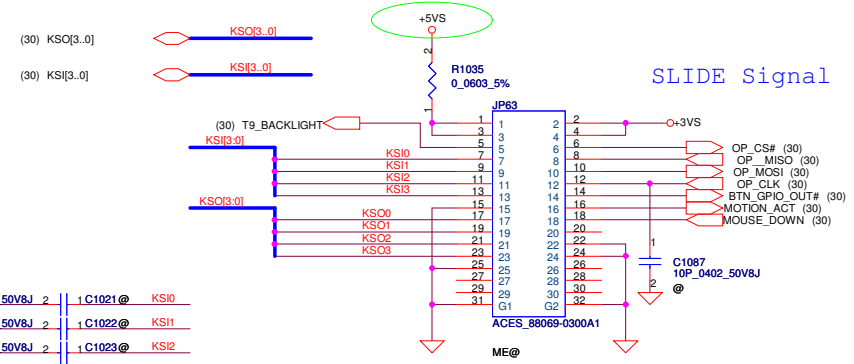
VOLUME ON/OFF



SHUTTER BUT

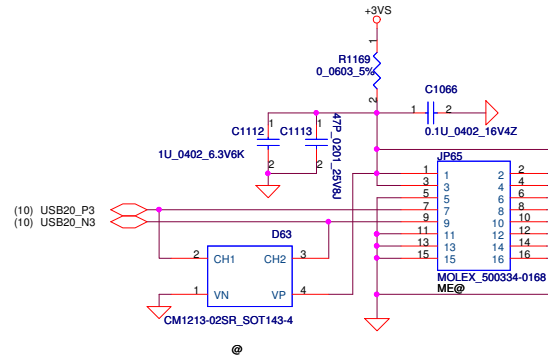


T9 Conn

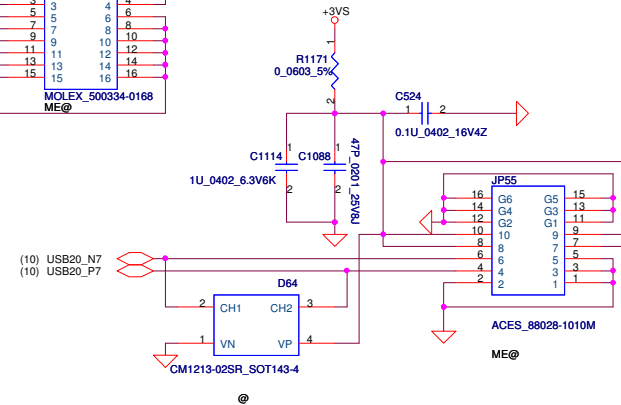


100P_0402_50V8J	2	1	C1021@	KSI0
100P_0402_50V8J	2	1	C1022@	KSI1
100P_0402_50V8J	2	1	C1023@	KSI2
100P_0402_50V8J	2	1	C1024@	KSI3
100P_0402_50V8J	2	1	C1025@	KSO0
100P_0402_50V8J	2	1	C1026@	KSO1
100P_0402_50V8J	2	1	C1027@	KSO2
100P_0402_50V8J	2	1	C1028@	KSO3

0.3M Camera Conn



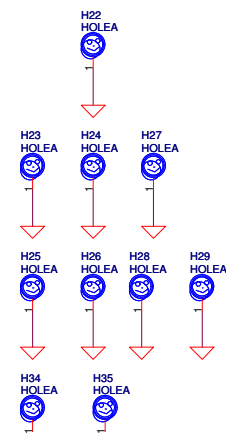
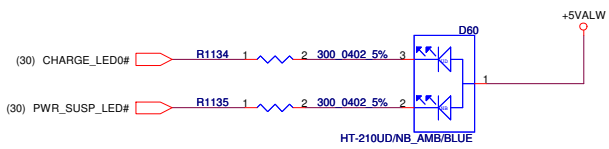
2.0M Camera Conn



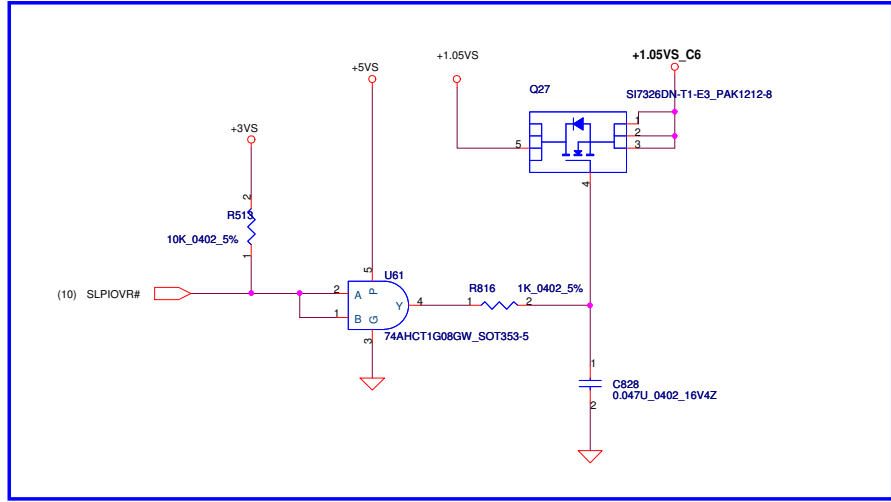
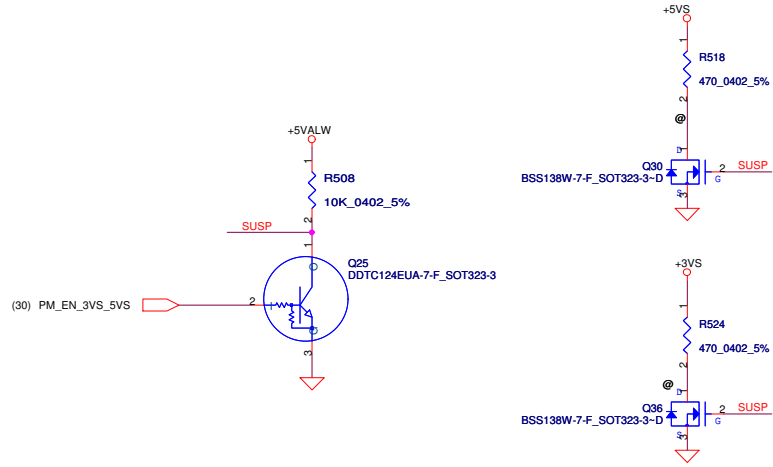
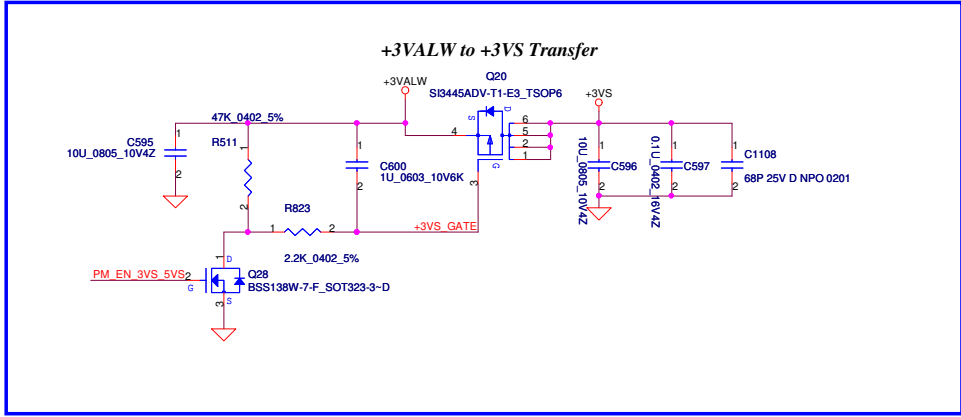
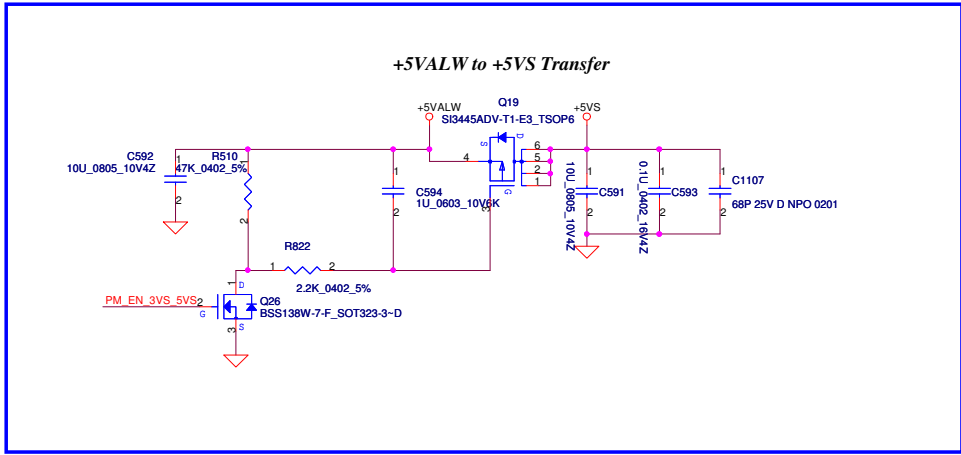
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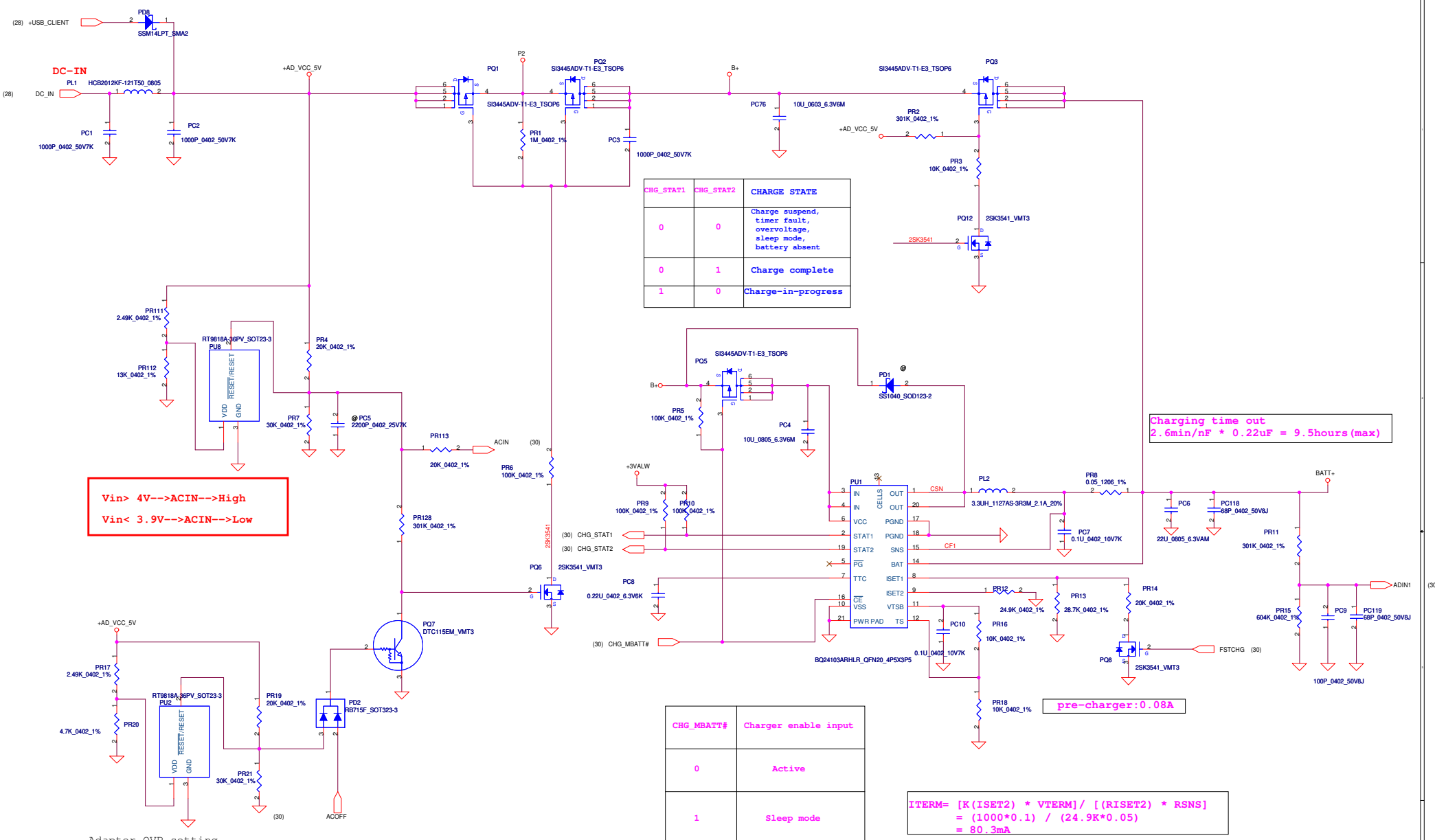
### Front LEDs



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CHG_STAT1	CHG_STAT2	CHARGE STATE
0	0	Charge suspend, timer fault, overvoltage, sleep mode, battery absent
0	1	Charge complete
1	0	Charge-in-progress

Charging time out  
 $2.6\text{min}/nF * 0.22\mu F = 9.5\text{hours (max)}$

**Vin > 4V --> ACIN --> High**  
**Vin < 3.9V --> ACIN --> Low**

**Vin > 5.5V --> ACIN --> Low**  
**Vin < 5.45V --> ACIN --> High**

pre-charger: 0.08A

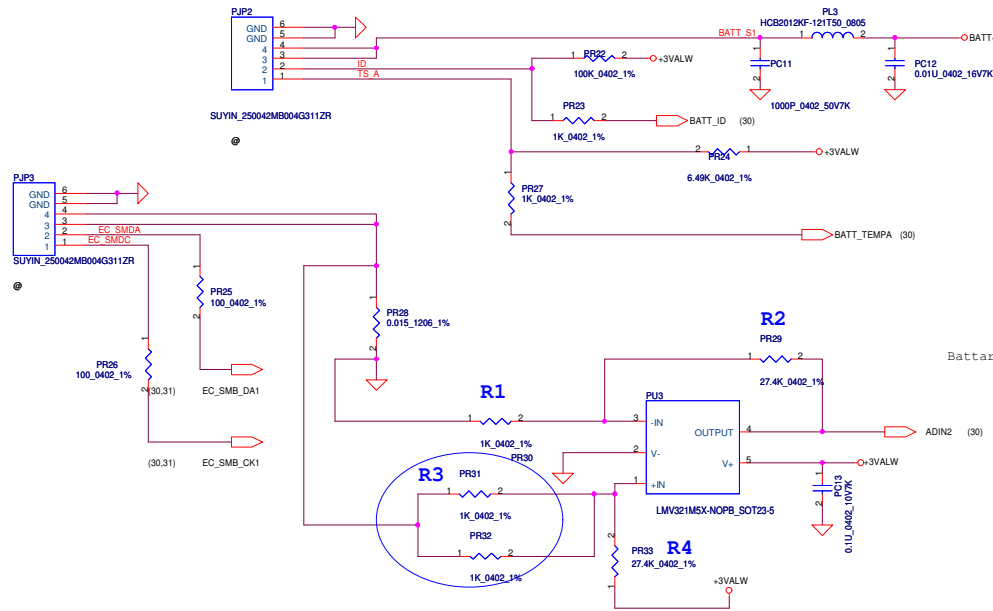
CHG_MBATT#	Charger enable input
0	Active
1	Sleep mode

$$I_{TERM} = \frac{[K(ISET2) * V_{TERM}]}{[(RIS2) * RSNS]}$$

$$= \frac{(1000 * 0.1)}{(24.9K * 0.05)}$$

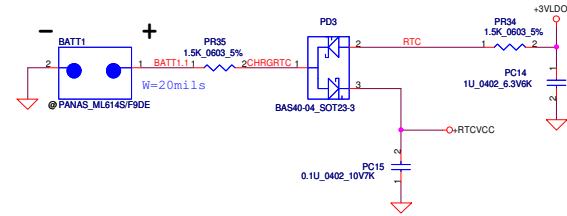
$$= 80.3\text{mA}$$

FSTCHG	Charge Current
0	0.7A ( System ON / USB IN but SYS OFF)
1	1.7A (System Off)

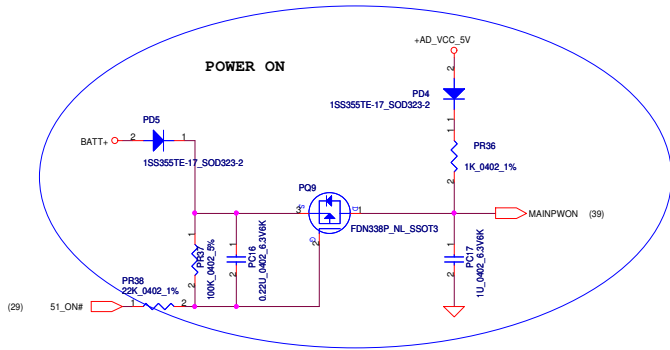
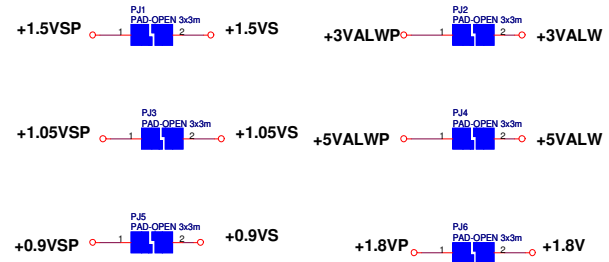
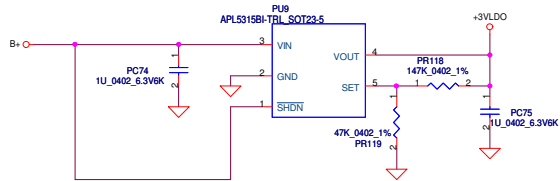


For Discharging		For charging	
Battery current (A)	ADIN2 (V)	Battery current (A)	ADIN2 (V)
0A	1.65V	0A	1.65V
0.5A	1.44V	0.25A	1.75V
1A	1.24V	0.5A	1.85V
1.5A	1.03V	0.8A	1.98V
2A	0.83V	1A	2.06V
2.5A	0.62V	1.25A	2.16V
3A	0.42V	1.5A	2.27V
3.5A	0.21V	1.75A	2.37V
4A	0.00V	2A	2.47V

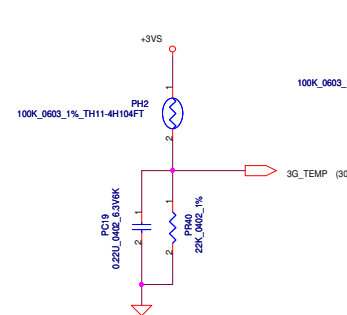
If  $R1=R3$  ,  $R2=R4$   
 $V_o = (R2/R1) (V_2 - V_1) + (V_+ / 2)$



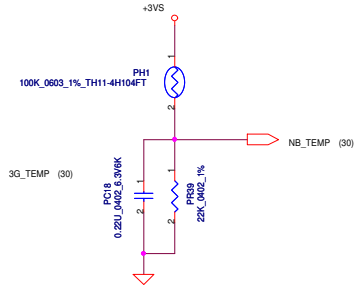
**RTC BATTERY**



**PH2 near 3G**



**PH1 under NB**

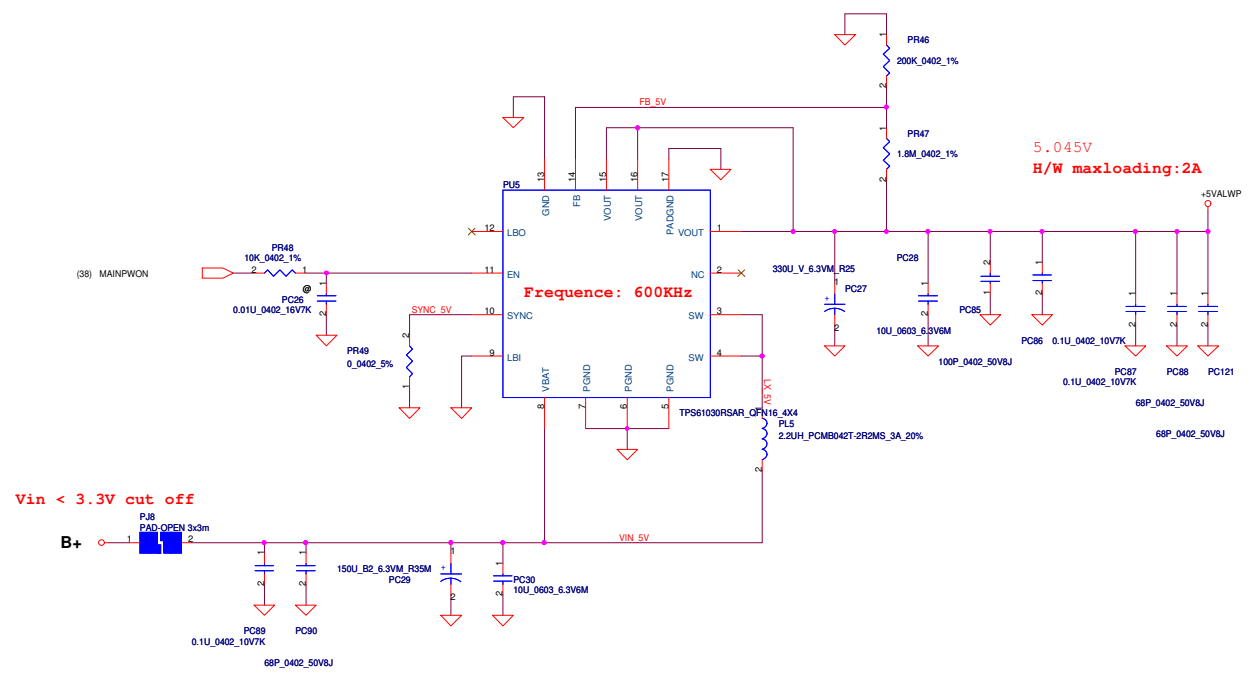
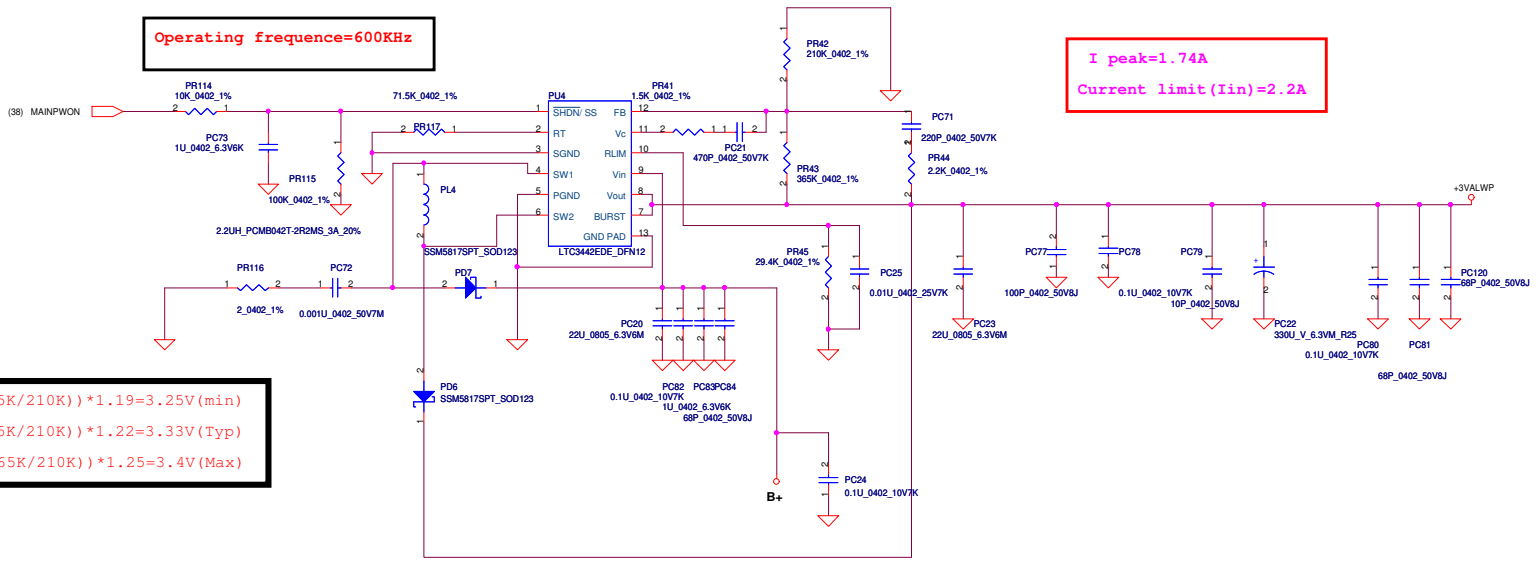


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Operating frequency=600KHz

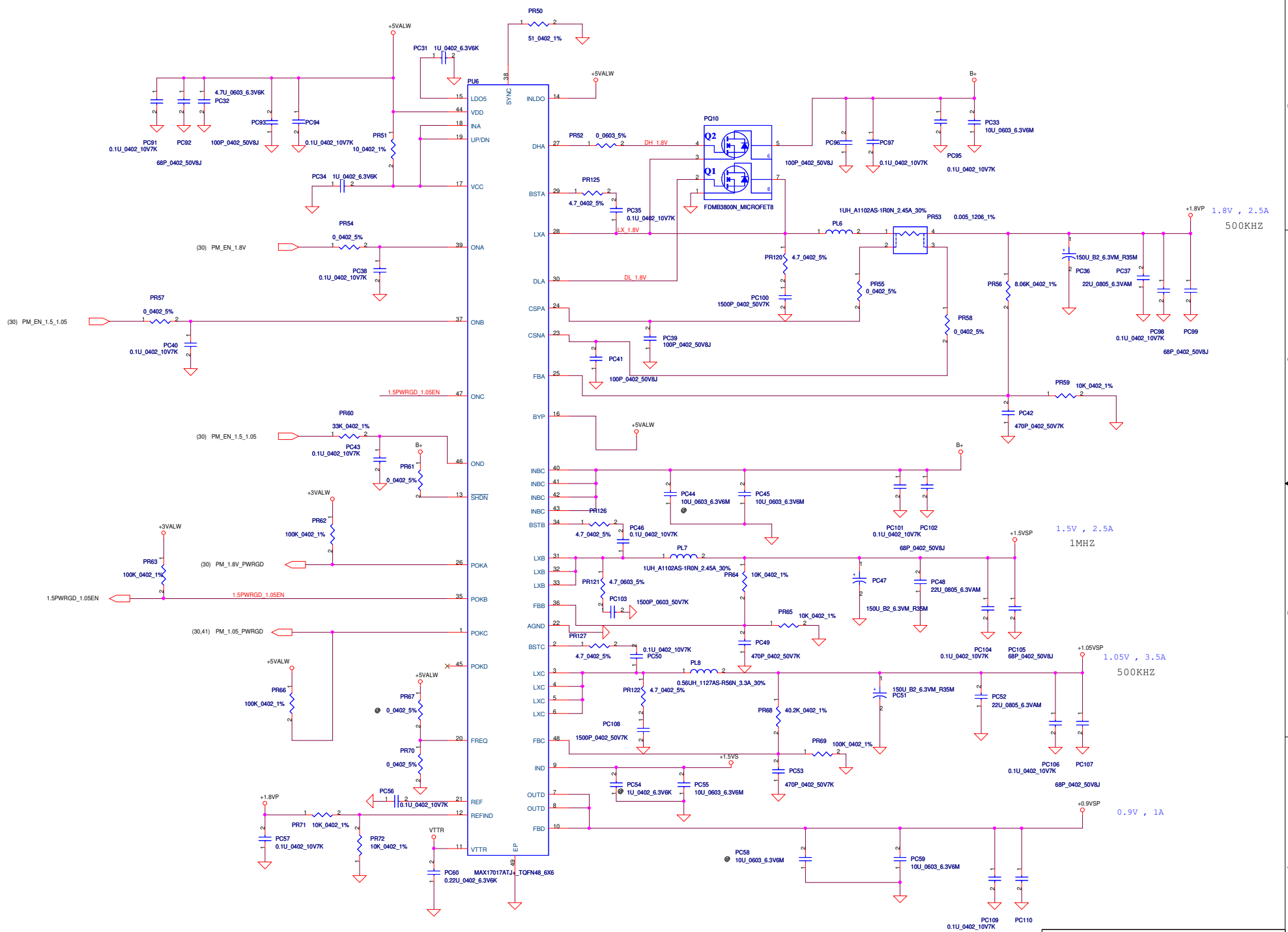
I peak=1.74A  
Current limit (Iin)=2.2A

$(1 + (365K/210K)) * 1.19 = 3.25V (min)$   
 $(1 + (365K/210K)) * 1.22 = 3.33V (Typ)$   
 $(1 + (365K/210K)) * 1.25 = 3.4V (Max)$



Vin < 3.3V cut off

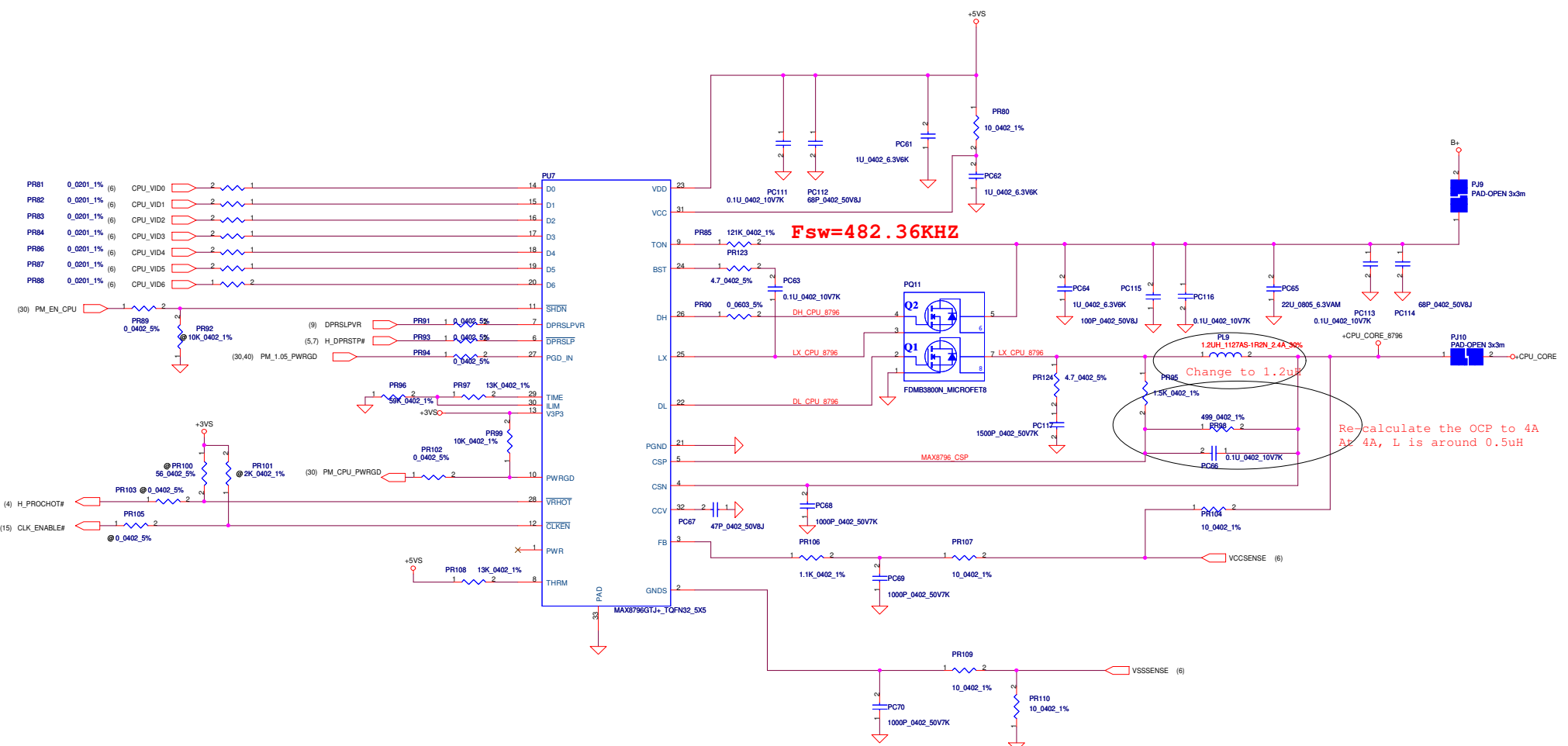
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## DVT

### 1. RF noise solution

- (1) PU4 於PC22, PC23並聯PC79 (10PF濾波電容), 可改善2100MHz noise flow.
- (2) PU7 於PR90, 改為1.2ohm, 可改善5-15db noise flow.
- (3) 增加Snubber filter solution in PL6, PL7, PL8, PL9 (R=4.7ohm, c=1500pf)  
PR120/PC100 in PL6 PR121/PC103 in PL7 PR122/PC108 in PL8 PR124/PC117 in PL9
- (4) 增加 .1uF and 100pf to PC23, PC28, PC64, PC32, and PC33  
PC77/PC78 to PC23 PC87/PC85 to PC28 PC116/PC115 to PC64 PC94/PC93 to PC32 PC97/PC96 to PC33
- (5) B+ line inputs增加 10uF or 68uF --->PC76
- (6) Add PC82/PC83/PC84 to PC20
- (7) Add PC80/PC81 to PC23
- (8) Add PC89/PC90 to PC29
- (9) Add PC87/PC88 to PC28
- (10) Add PC91/PC92 to PC32
- (11) Add PC109/PC110 to PC59
- (12) Add PC106/PC107 to PC52
- (13) Add PC104/PC105 to PC48
- (14) Add PC101/PC102 to PC45
- (15) Add PC98/PC99 to PC37
- (16) Add PC113/PC114 to PC65
- (17) Add PC111/PC112 to PC61
- (18) Add PC95 to PC33

### 2. Solar bag circuit

Add PD8 to solar bag circuit.

## PVT

1. Add PR128 to prevent ACIN to pull low in abnormal function
2. 不接ACOFF, PQ12.2連接到PQ6.1, 做開關動作
3. Charger 4.4UH change to 3.3UH for OCP concern
4. PC118/PC119/PC120/PC121 are used for RF noise

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EVT -----> DVT

PAGE04 R562 from 56 ohm change to 120 ohm & pull up +1.05VS\_C6  
PAGE07 R300 from 56 ohm change to 120 ohm  
R32 from 0 ohm change to 24 ohm  
PAGE09 Add R1151 0 ohm pull down  
PAGE10 Add R1152 1K ohm pull down  
R1153 10K ohm pull up +3VS  
PAGE16 Del R321 0 ohm  
PAGE17 Q68 change to AO3415(P/N:SB00000AP00)  
PAGE18 Add R1161 0 ohm  
PAGE19 C1056,C1058&C1059 from 10pF change to 56pF  
RF solution add C1100 C1101  
PAGE20 Add GPS\_OFF# circuit  
RF solution add L79 C1097 C1098 C1099  
C1065 1.2pF change to 1.8pF  
PAGE22 Add R1154 100K ohm pull down  
PAGE25 Add R1155 0 ohm & MWP\_PD# ,SWP\_PD# net  
PAGE27 R1029,R1034 change to 15.4K ohm  
Add EC\_-3V\_PWD# net  
Del EC\_MIC\_SENSE & EC\_JACK\_SENSE net  
Change JP62 Connector & Reserve Speaker Amp circuit of WOLFSON  
PAGE28 Add solar bag funtion(R1183 connect to EC)  
PAGE30 Add R1167(LPC\_AD0)  
R1166(LPC\_AD1)  
R1165(LPC\_AD2)  
R1164(LPC\_AD3) 20K ohm pull up +3VS  
R1160 10K ohm pull up +3VS  
RF solution add C1102 C1103  
add USB\_DETECT net  
PAGE33 Reserve R1169 & R1171 pull up to +3VS  
R1035 pull up from +5VALW change to +5VS  
PAGE34 Del AN1,R1060,R1062,R1064&POGOPAD1,2  
Change Size to 0201  
PAGE27 R1139 R1004 R1006 R1007 C965  
PAGE28 R1010 R1016 R1019 R1021 R1046 R1047 R1032  
PAGE30 R442 R465 R467 R468 R800 R796 R798 R797  
R454 R455 R457 R458 R1131 R1132 R1087 R1086  
R480 R1051 R1052 R447 R801 R1160  
C1004 C1005 C1007 C1008 C1096 C830 C1018  
C1019 C1020  
PAGE31 C1017 C1085 C1086 R1079

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