

LCFC Confidential

G Project M/B Schematics Document

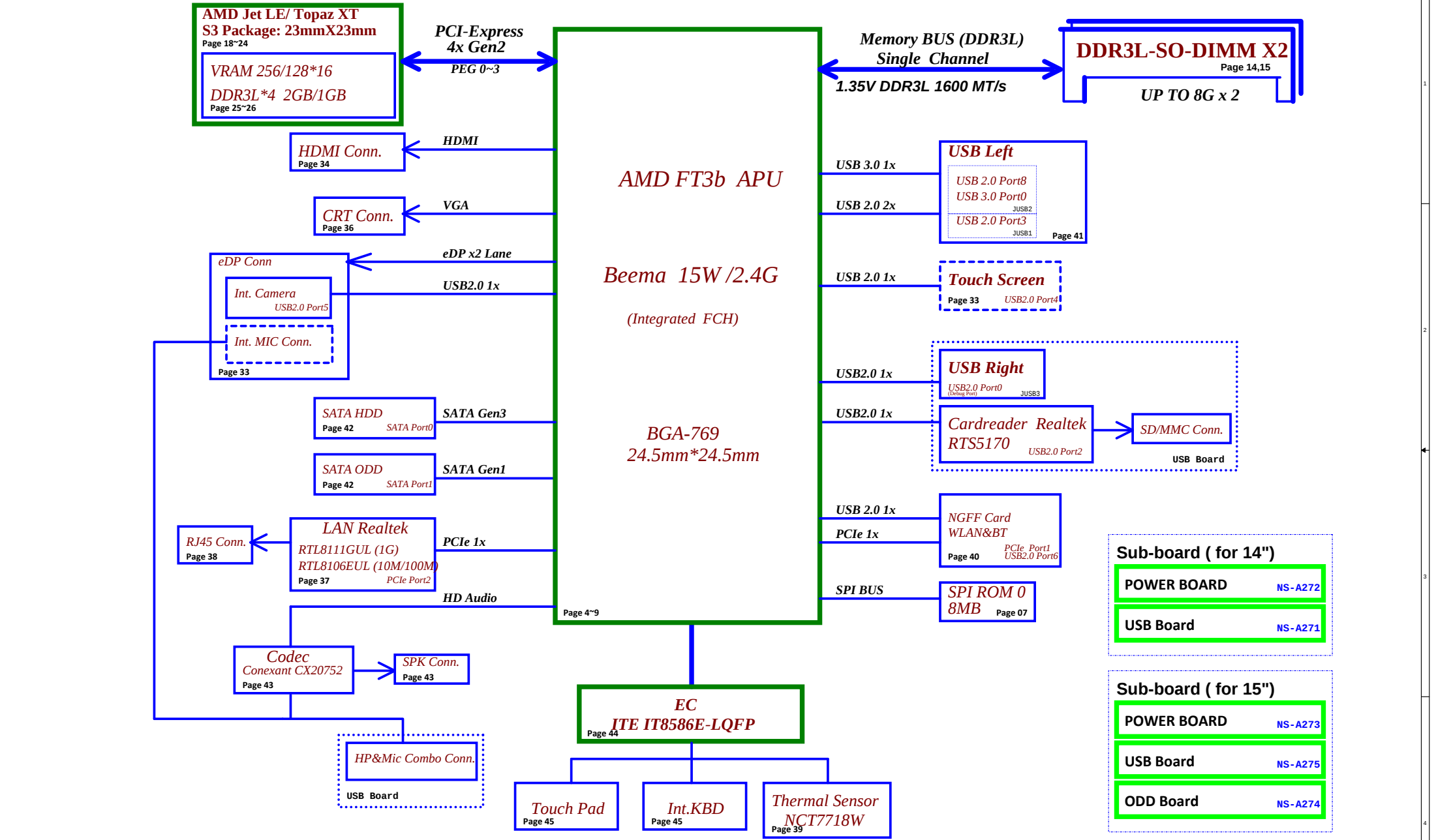
AMD FT3B Beema SOC with DDRIIIL

AMD JET-LE

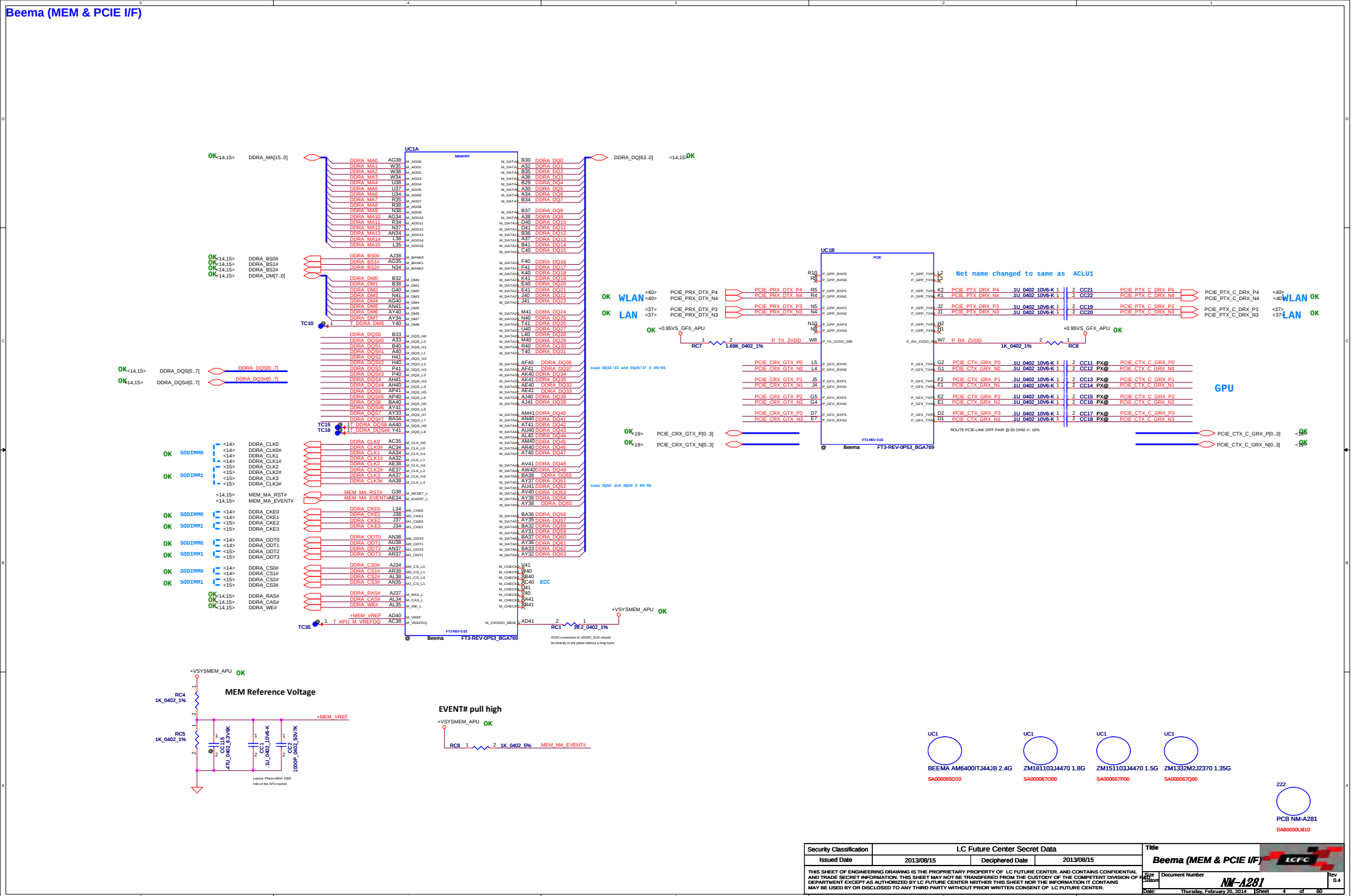
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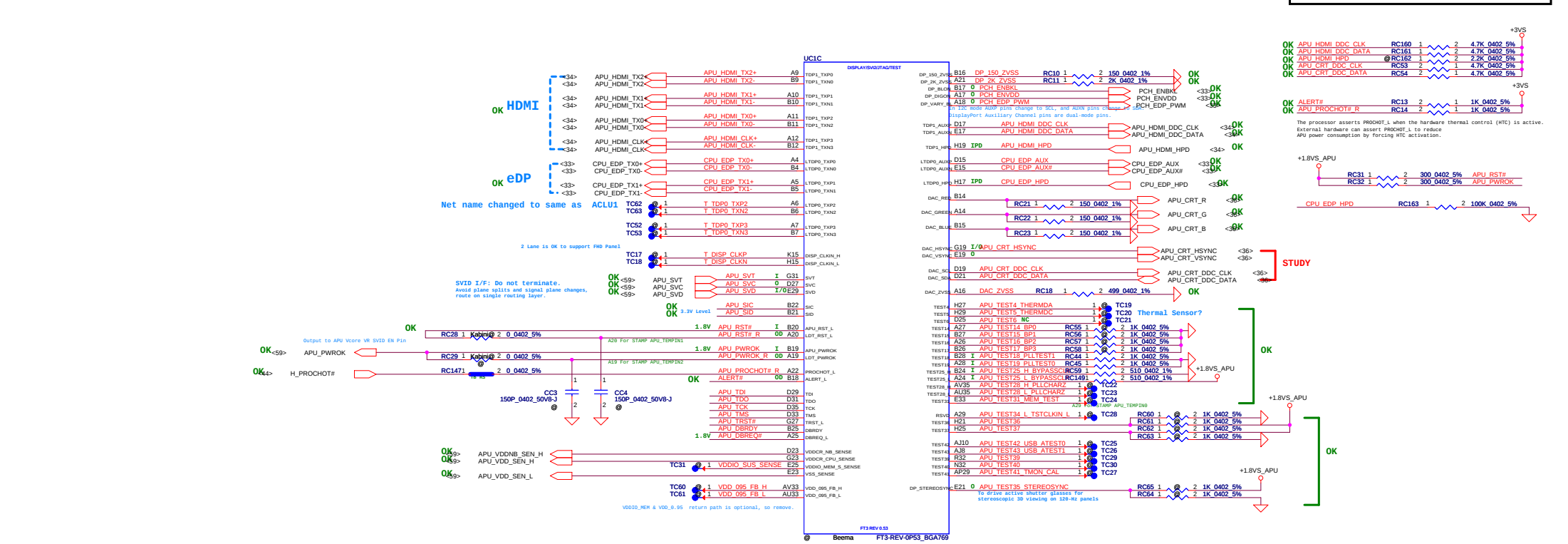
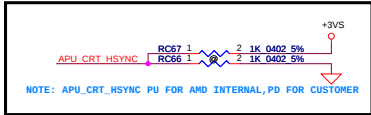
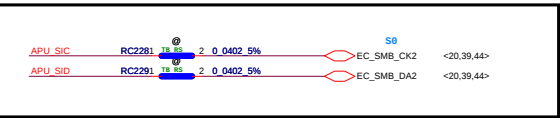
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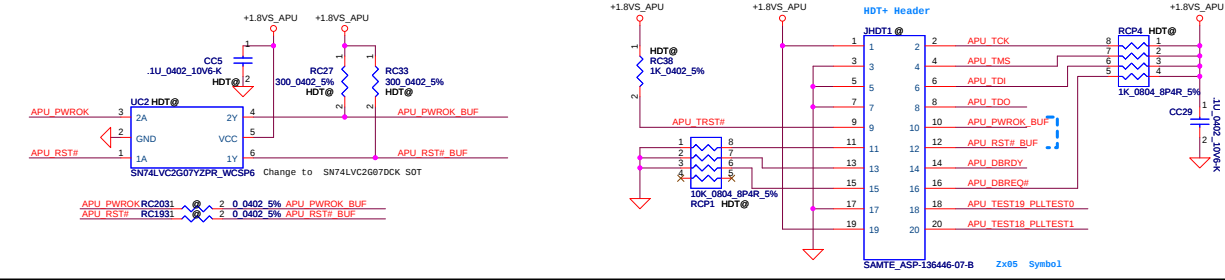
VRAM



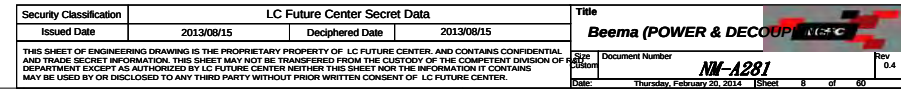
Beema (DISPLAY/CLK/MISC)



OK



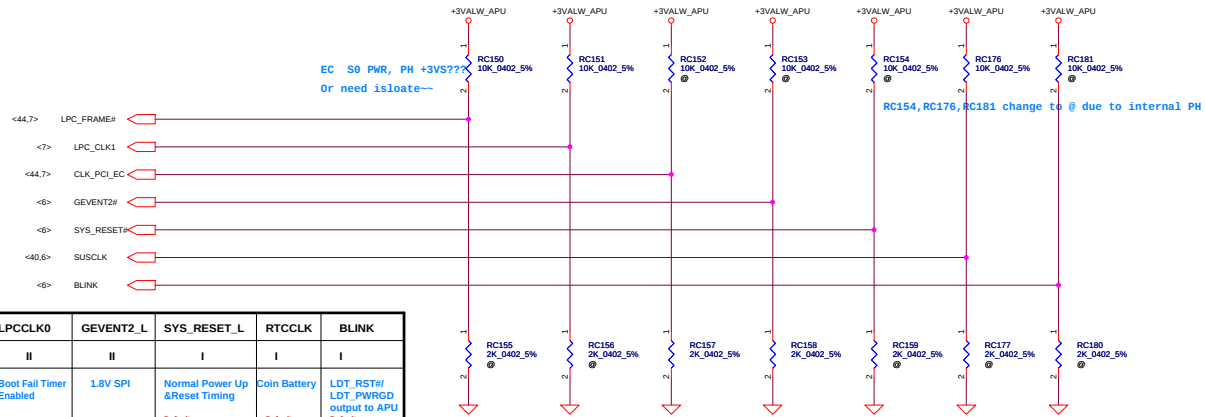
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STRAP PINS

Signal	LFRAME_L	LPCCCLK1	LPCCCLK0	GEVENT2_L	SYS_RESET_L	RTCCLK	BLINK
Type	II	II	II	II	I	I	I
PULL HIGH	SPI ROM Default	Internal CLK Gen Default	Boot Fail Timer Enabled	1.8V SPI	Normal Power Up & Reset Timing Default	Coin Battery Default	LDT_RST#/ LDT_PWRGD output to APU Default
PULL LOW	LPC ROM	External CLK Gen	Boot Fail Timer Disabled Default	3.3V SPI Default	Reserved	Direct DC	Reserved

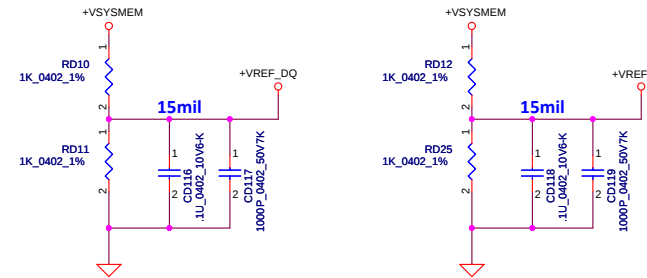
Type I straps become valid immediately after capture with the rising edge of RSMRST_L.
Type II straps become valid after PWR_G00D is asserted
All Strap pins must be configured with either external pull-up or pull-down resistors.



5					4					3					2					1				
D																								
C																								
B																								
A																								
5					4					3					2					1				

5					4					3					2					1				
D																								
C																								
B																								
A																								
5					4					3					2					1				

DDRA_DQ[0..63]		DDRA_DQ[0..63]	<15,4>
DDRA_DSQ[0..7]		DDRA_DSQ[0..7]	<15,4>
DDRA_DSQ# [0..7]		DDRA_DSQ# [0..7]	<15,4>
DDRA_MA[0..15]		DDRA_MA[0..15]	<15,4>
DDRA_DM[0..7]		DDRA_DM[0..7]	<15,4>

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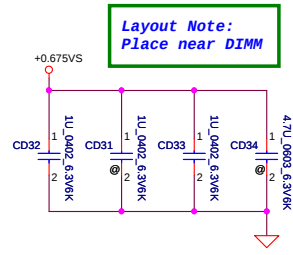
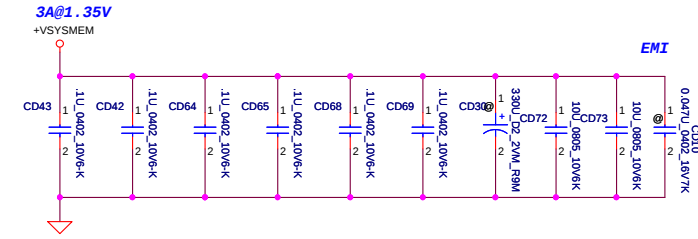
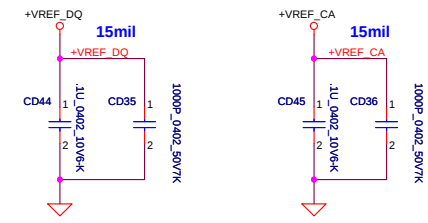
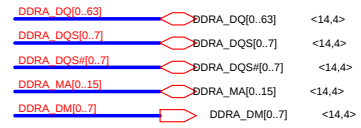
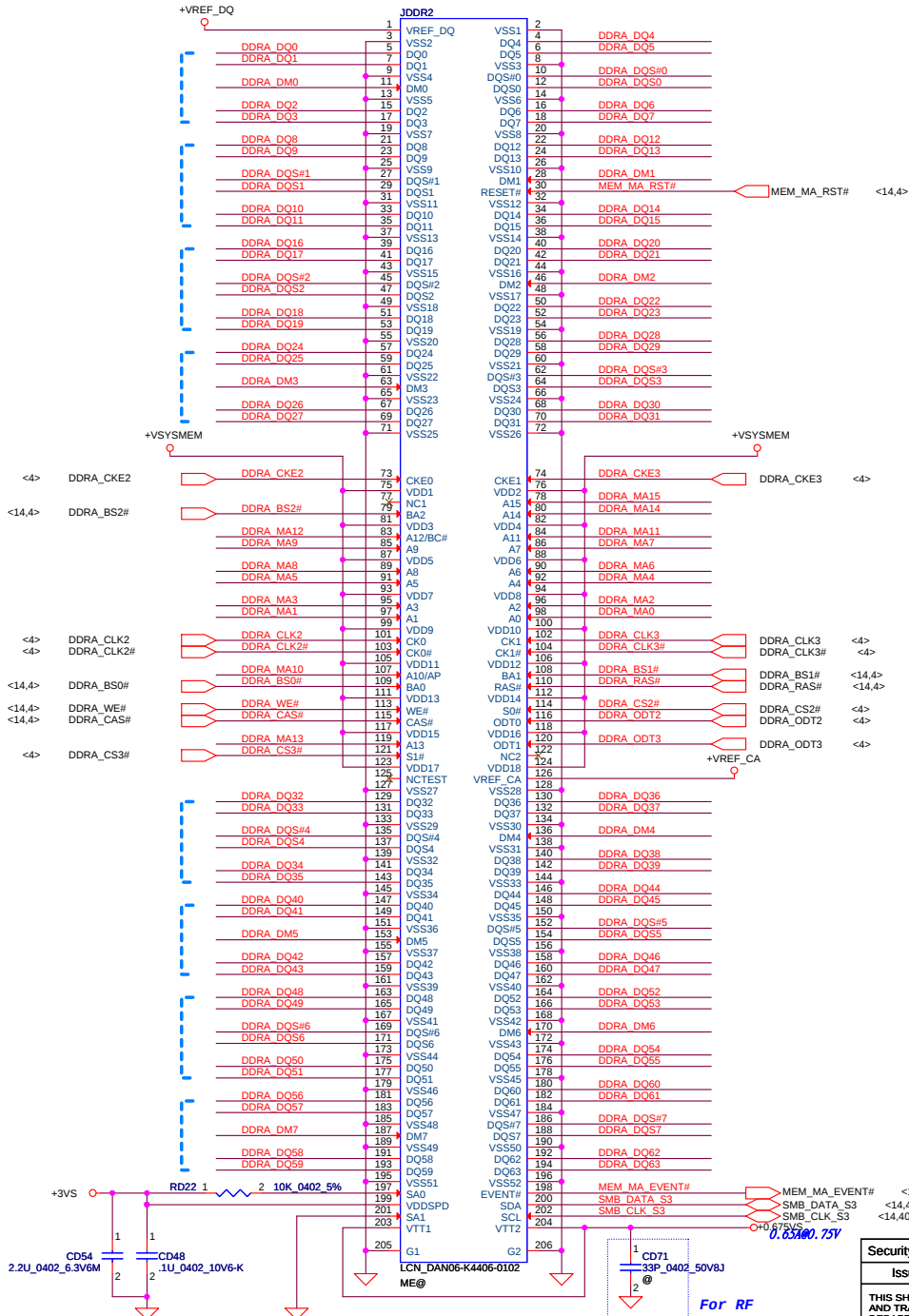
The diagram shows the +VSYSTEMEMEM supply rail layout. It starts with a red circle labeled +VSYSTEMEMEM at the top left. The rail runs horizontally to the right, with several decoupling capacitors connected to ground (indicated by red triangles). The capacitors are labeled as follows:

- CD62: 10µ 0805_10V6K
- CD63: 10µ 0805_10V6K
- CD66: W9A3E9_5080T_T22
- CD67: W9A3E9_5080T_T22
- EMI: 0.047µ 0402_16V7K
- CD5: 0.047µ 0402_16V7K
- CD6: 0.047µ 0402_16V7K
- CD7: 0.047µ 0402_16V7K
- CD11: 33P_0402_50V8J

A green box labeled "RF" is located to the right of the rail. A blue box labeled "Layout Note: Place near DIMM" is located below the rail. The rail is labeled "EMI" in blue text.

Title		DDRIII SO-DIMM A			
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DDR3 SO-DIMM B



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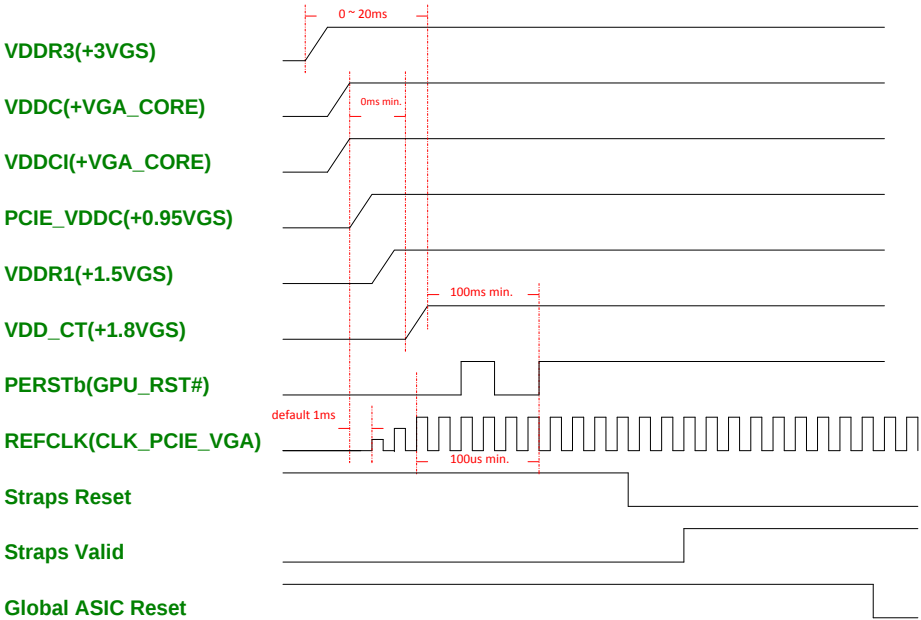
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VGA Note list need to be update!

Power-Up/Down Sequence

"Mars" has the following requirements with regards to power-supply sequencing to avoid damaging the ASIC:

- All the ASIC supplies must reach their respective nominal voltages within 20 ms of the start of the ramp-up sequence, though a shorter ramp-up duration is preferred. The maximum slew rate on all rails is 50 mV/μs.
- The external pull ups on the DDC/AUX signals (if applicable) should ramp up before or after both VDDC and VDD_CT have ramped up.
- VDDC and VDD_CT should not ramp up simultaneously. For example, VDDC should reach 90% before VDD_CT starts to ramp up (or vice versa).
- For power down, reversing the ramp-up sequence is recommended.

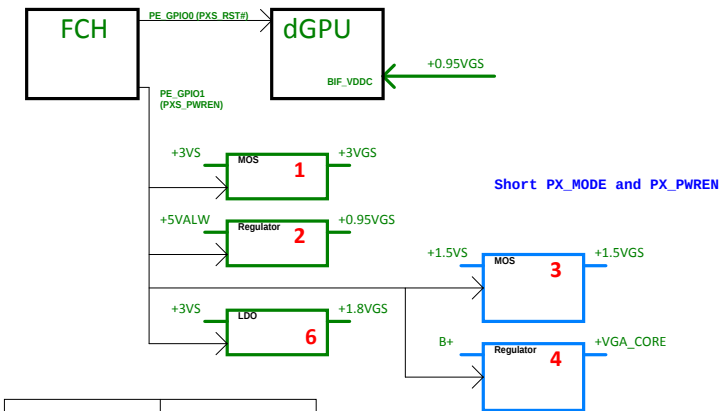


Without BACO option :

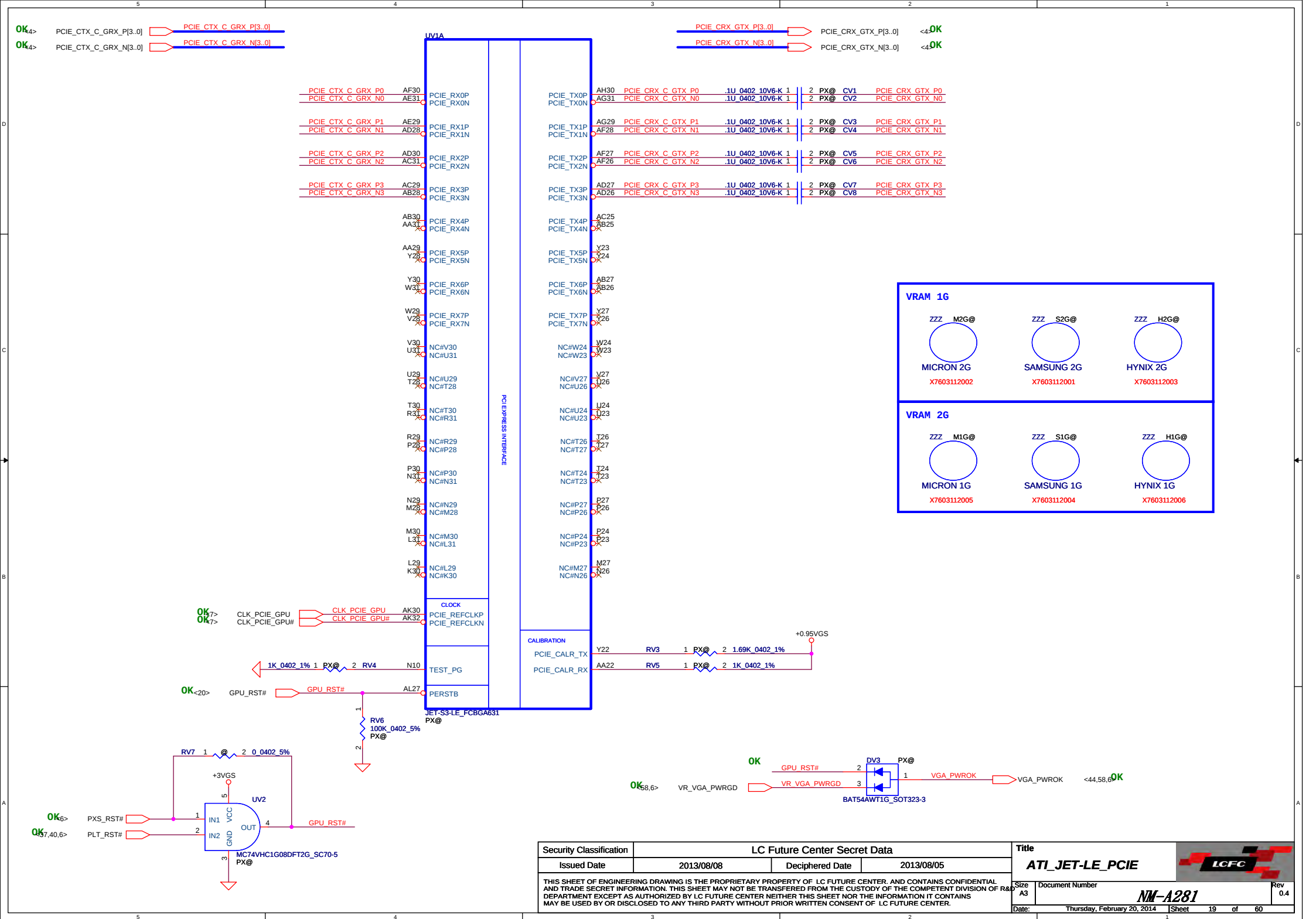
PE_GPIO0 : Low -> Reset dGPU ; High -> Normal operation
PE_GPIO1 : Low -> dGPU Power Off ; High -> dGPU Power ON

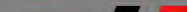
dGPU Power Pins	Voltage	Max current
VDD_CT, DP_VDDR, SPLL_PVDD, MPLL_PVDD, PCIE_PVDD, TSVDD, VDDR4, AVDD, VDD1DI	1.8V	1243mA
DP_VDDC, SPLL_VDDC, PCIE_VDDC, BIF_VDDC	0.95V	4560mA
VDDR3	3.3V	25mA
VDDR1	1.5V	1.5A
VDDC	0.8~1.125V	TBD
VDDCI	0.8~1.1V	8.8A

PX5.5



Name	Pin Assignment
PE_GPIO0	GPIO191
PE_GPIO1	GPIO192



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UV1F

NC_VARY_BL
NC_DIGON

AB11
AB12

NC_UPHYAB_TMDPA_TX0N
NC_UPHYAB_TMDPA_TX0P

AL15
AK14

NC_UPHYAB_TMDPA_TX1N
NC_UPHYAB_TMDPA_TX1P

AH16
AJ15

NC_UPHYAB_TMDPA_TX2N
NC_UPHYAB_TMDPA_TX2P

AL17
AK16

NC_UPHYAB_TMDPA_TX3N
NC_UPHYAB_TMDPA_TX3P

AH18
AJ17

NC_TXOUT_L3P
NC_TXOUT_L3N

AL19
AK18

TMDP

NC_UPHYAB_TMDPB_TX0N
NC_UPHYAB_TMDPB_TX0P

AH20
AJ19

NC_UPHYAB_TMDPB_TX1N
NC_UPHYAB_TMDPB_TX1P

AL21
AK20

NC_UPHYAB_TMDPB_TX2N
NC_UPHYAB_TMDPB_TX2P

AH22
AJ21

NC_UPHYAB_TMDPB_TX3N
NC_UPHYAB_TMDPB_TX3P

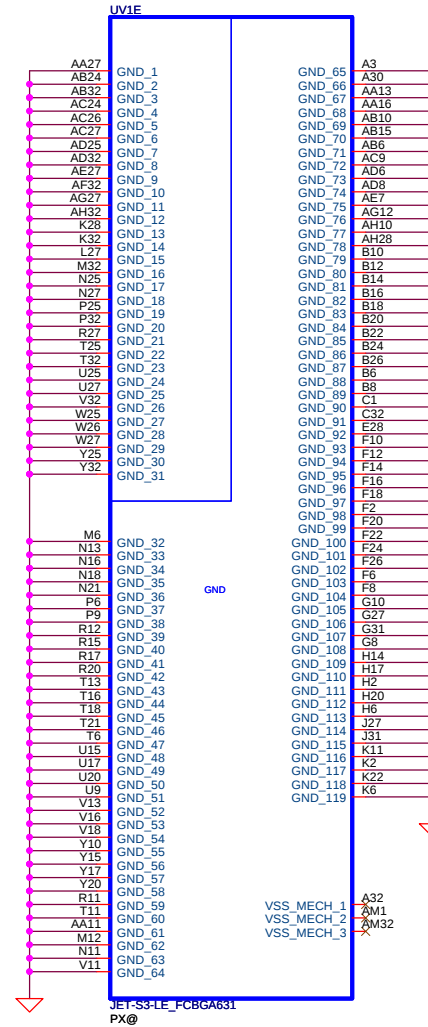
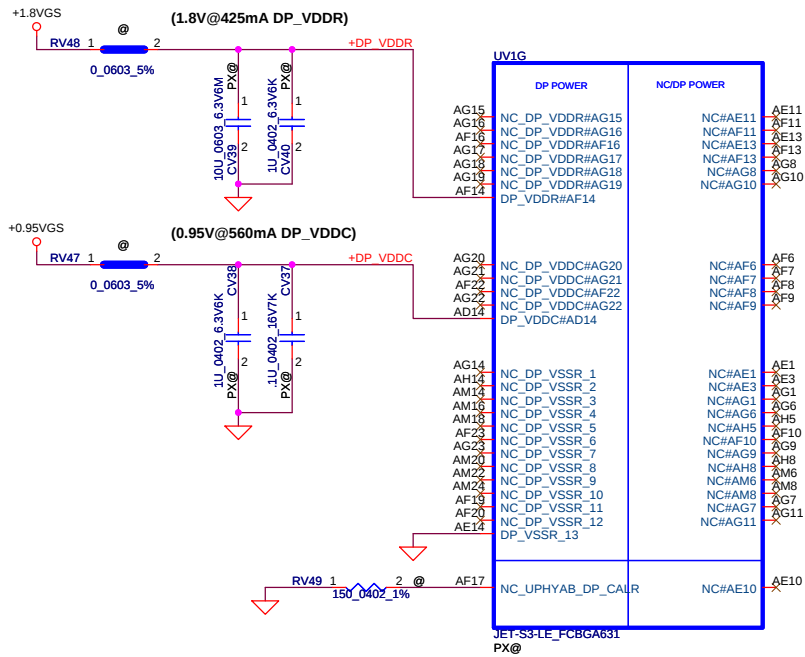
AL23
AK22

NC_TXOUT_U3P
NC_TXOUT_U3N

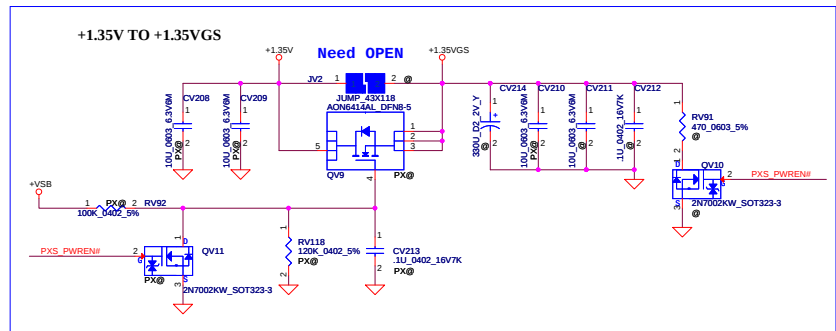
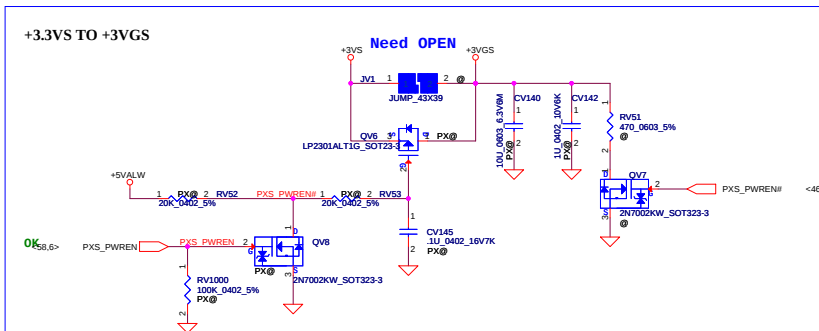
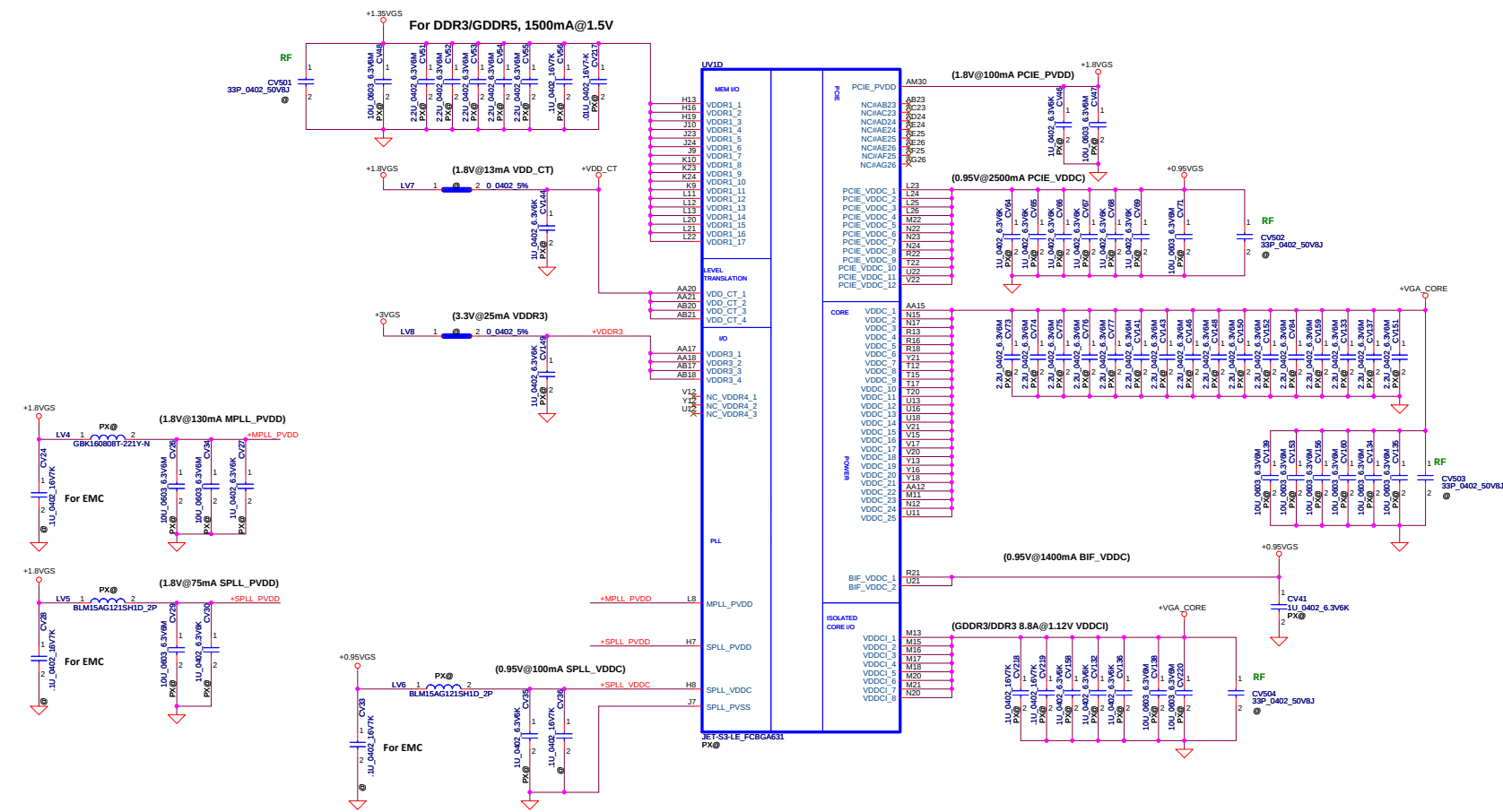
AK24
AJ23

JET-SS*LE_FCBGA631
PX@

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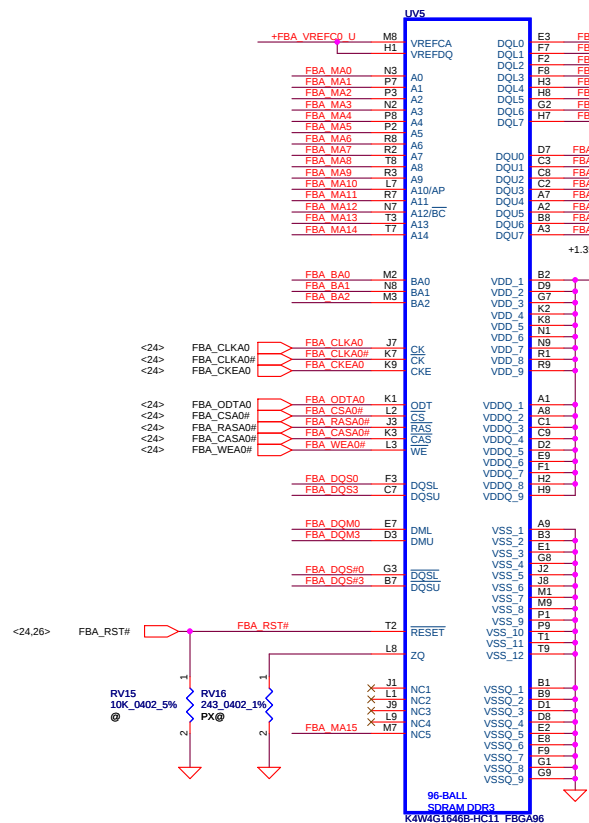




Memory Partition A - Lower 32 bits

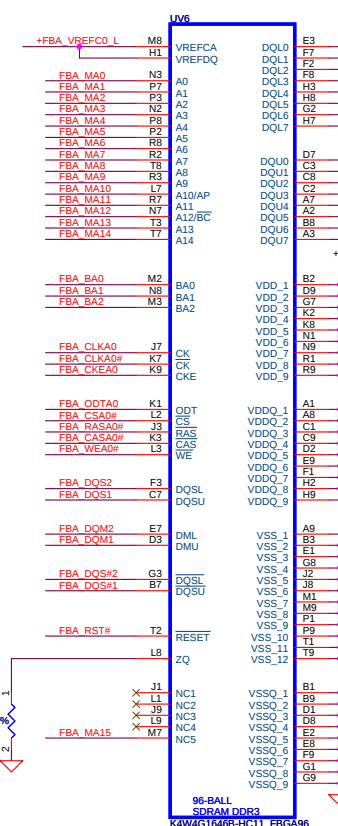
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- FBA_BA[2..0] <24,26>
- FBA_DQS[3..0] <24>
- FBA_DQM[3..0] <24>
- FBA_DQS#[3..0] <24>
- FBA_D[31..0] <24>

ACLU5 swap the VRAM Data @ 08/26
VRAM 8 pcs change to 4 pcs @ 09/26



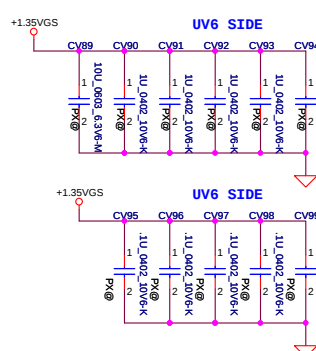
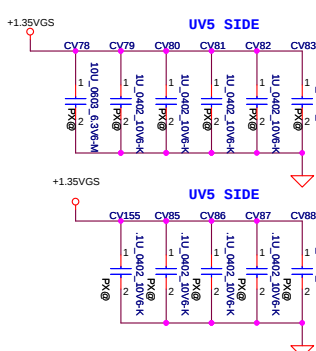
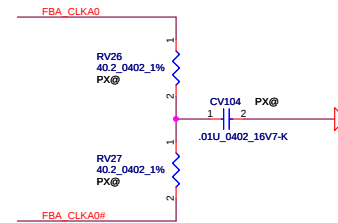
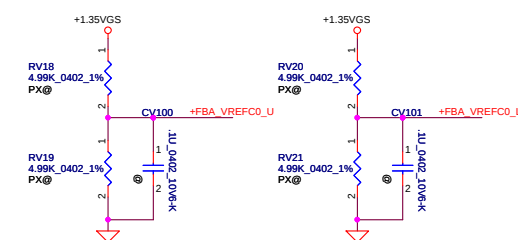
Group0 (IN3)

Group3 (B0T)

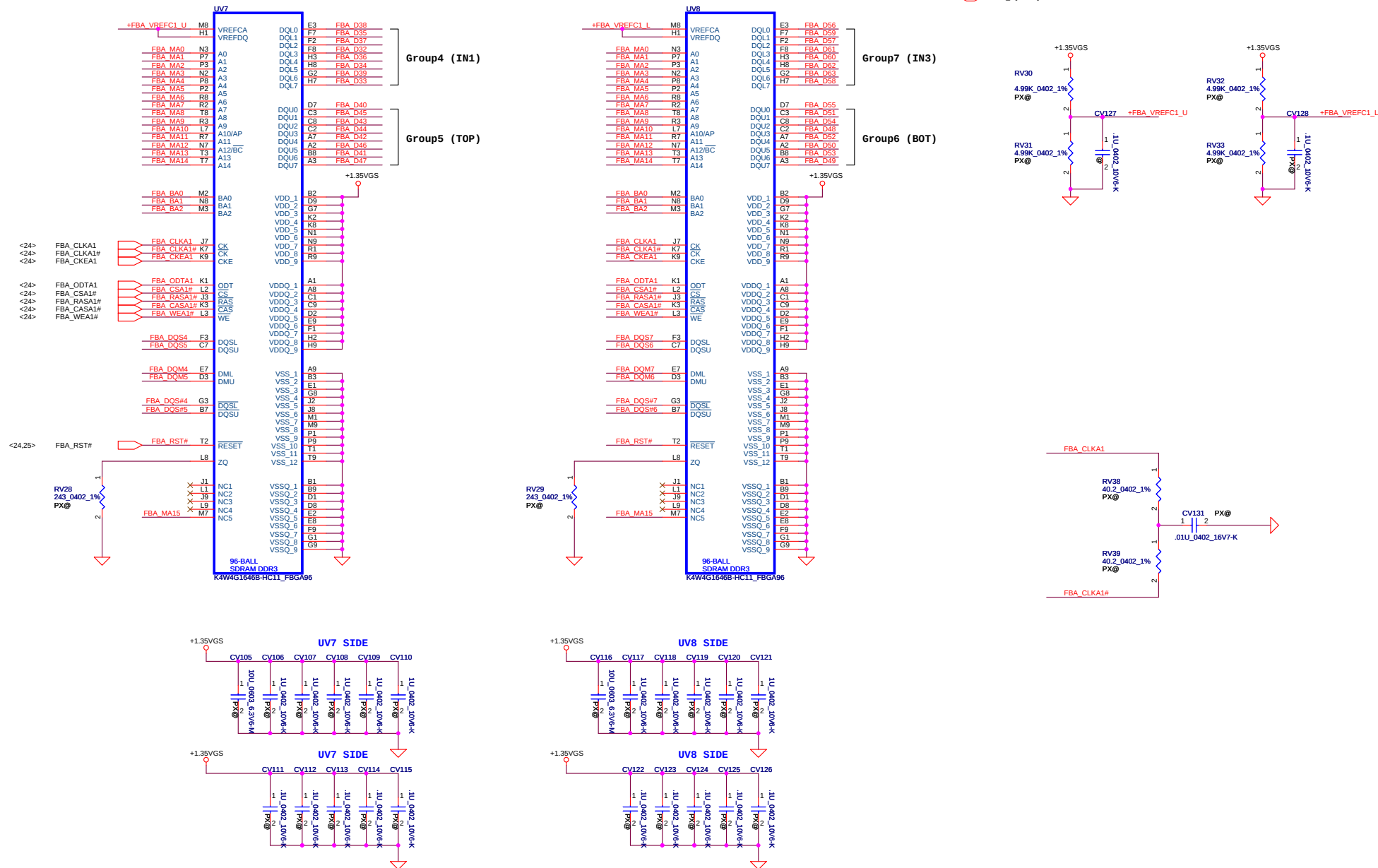


Group2 (IN1)

Group1 (TOP)



Memory Partition A - Upper 32 bits



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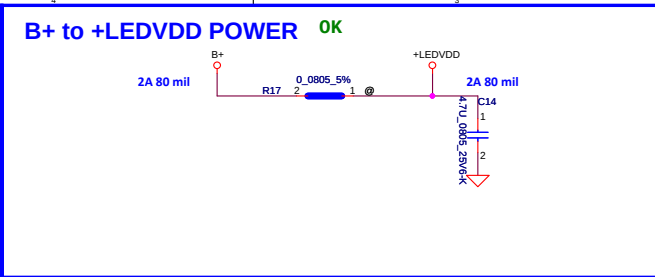
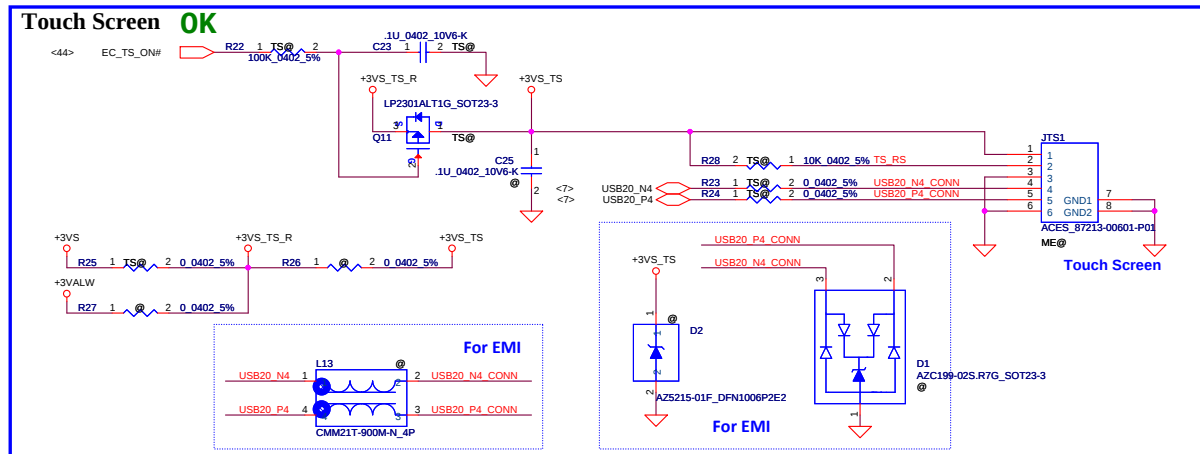
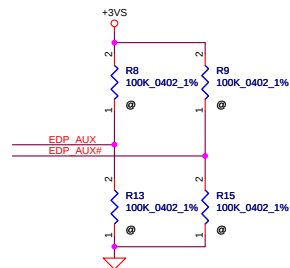
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[illegible][illegible]

The diagram illustrates the EMI filter components and their connection to the CMM21T-900M-N-4P module. The components include:

- DMIC_CLK**: A signal line connected to capacitor **C11** (100P_0402_50V8U).
- DISPOFF#**: A signal line connected to capacitor **C12** (470P_0402_50V7K).
- INVT_PWM**: A signal line connected to capacitor **C13** (470P_0402_50V7K).

The capacitors are connected to ground, indicated by the ground symbols (a circle with a cross) and the ground plane (a triangle with a cross). The ground plane is labeled **GND**.

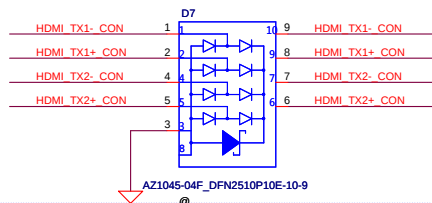
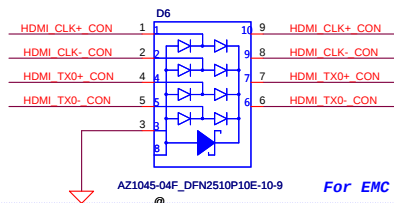
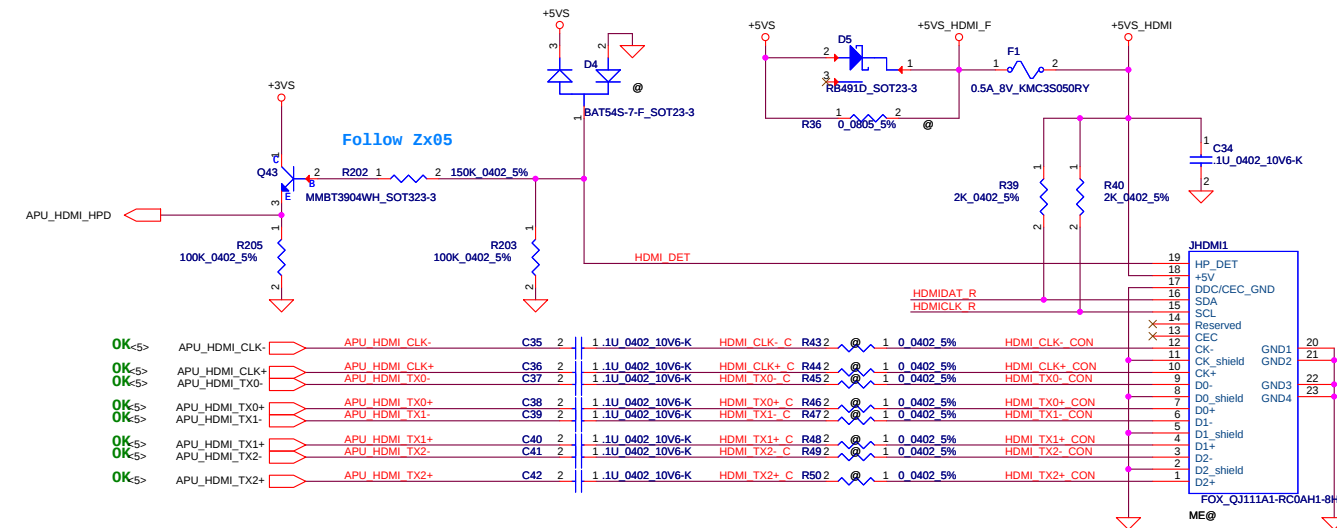
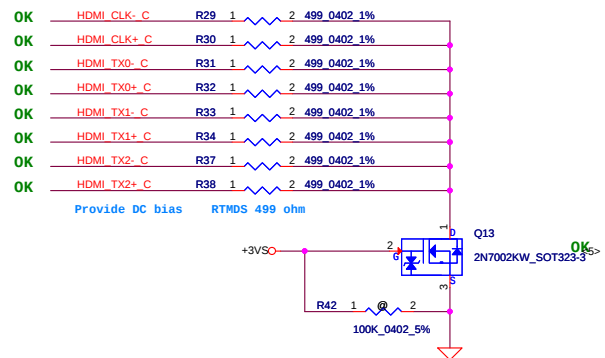
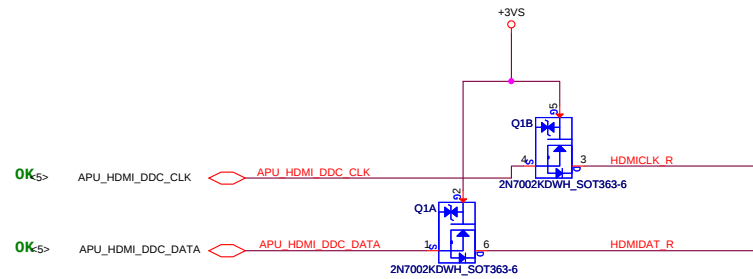
The CMM21T-900M-N-4P module is shown with four pins connected to the signal lines:

- Pin 1**: **USB20_P5**
- Pin 2**: **USB20_P5_R**
- Pin 3**: **USB20_N5_R**
- Pin 4**: **USB20_N5**

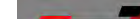
The module is labeled **CMM21T-900M-N-4P** and **L12**.

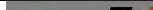
The text **OK** is present on the left, and **For EMI** is present on the right.

Security Classification		LC Future Center Secret Data		Title			
Issued Date	2013/08/08	Deciphered Date	2013/08/05	eDP/ CMOS/Touch screen			
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				Date: Thursday, February 20, 2014 [Sheet 33 of 60]			

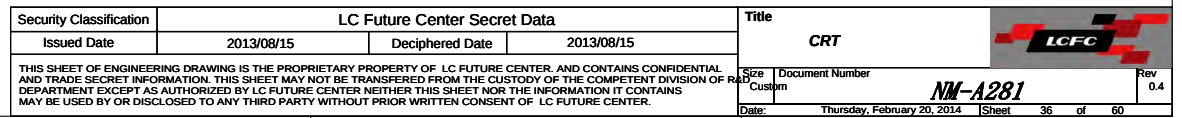


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Issued Date	2013/08/15	Deciphered Date	2013/08/15
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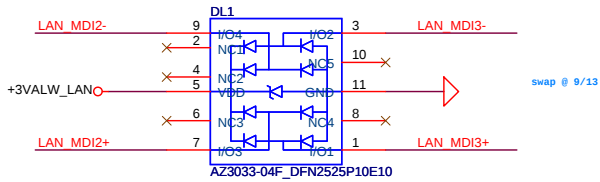
Title			
Size Custom	Document Number	Rev	
	NM-A281	0.4	
Date:	Thursday, February 20, 2014	15:58	24 of 60

Security Classification	LC Future Center Secret Data			Title	
Issued Date	2013/08/15	Deciphered Date	2013/08/15	Blank	
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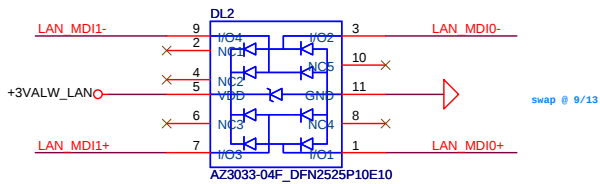
W=40mils



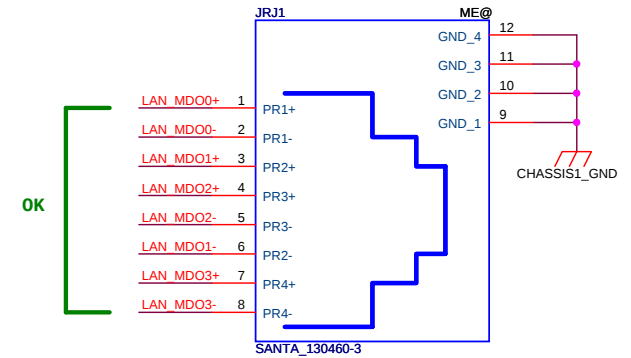
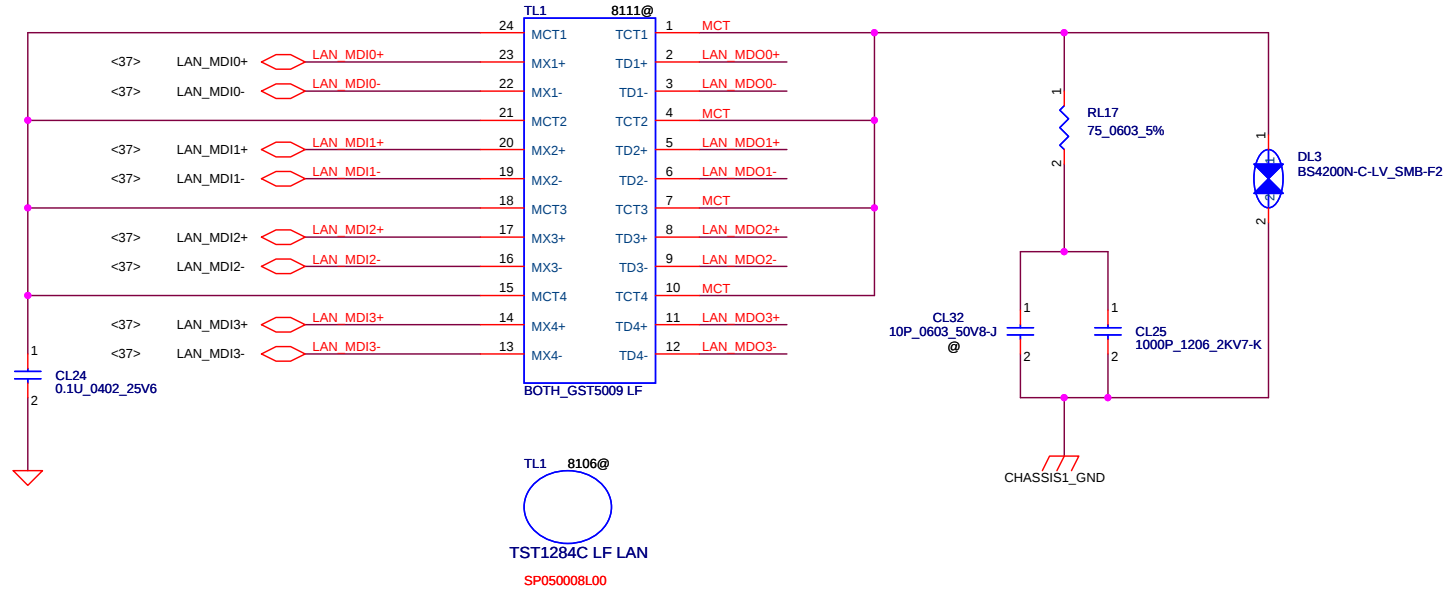
DL1/DL2
1'S PN:SC300003M00



Place Close to TL1

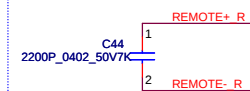


Place Close to TL2



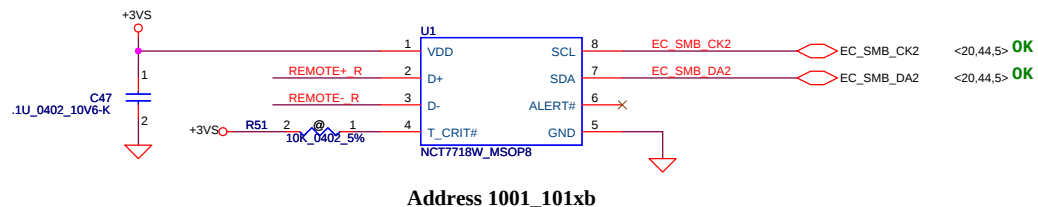
Security Classification	LC Future Center Secret Data			Title	LAN_Transformer	
Issued Date	2013/08/08	Deciphered Date	2013/08/05	Size	Document Number	Rev
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Close to U1

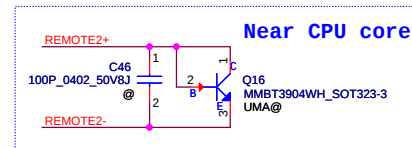
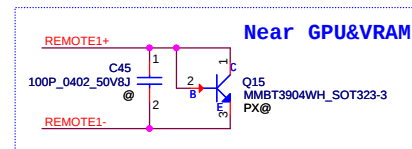


SMSC thermal sensor
placed near DIMM

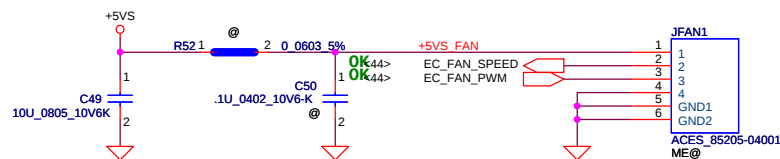
OK



REMOTE+/-_R, REMOTE1+/-, REMOTE2+/-:
Trace width/space:10/10 mil
Trace length:<8"

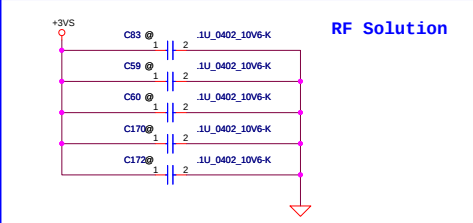
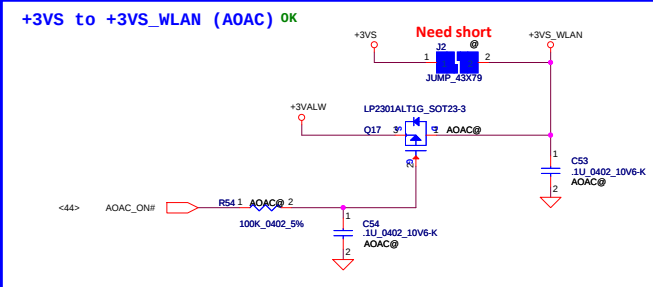
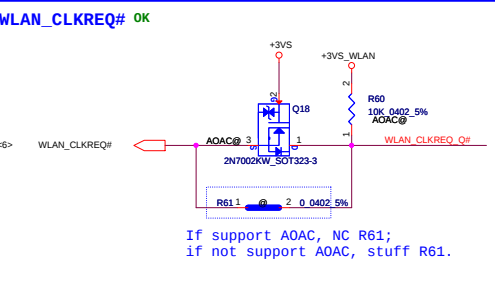
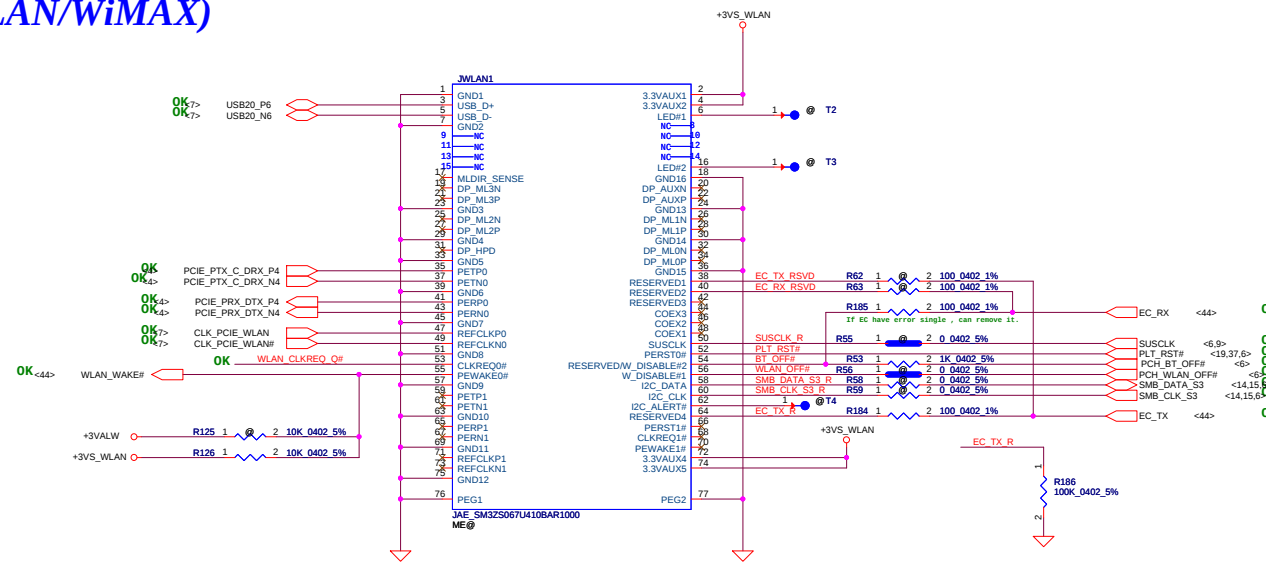


FAN Conn

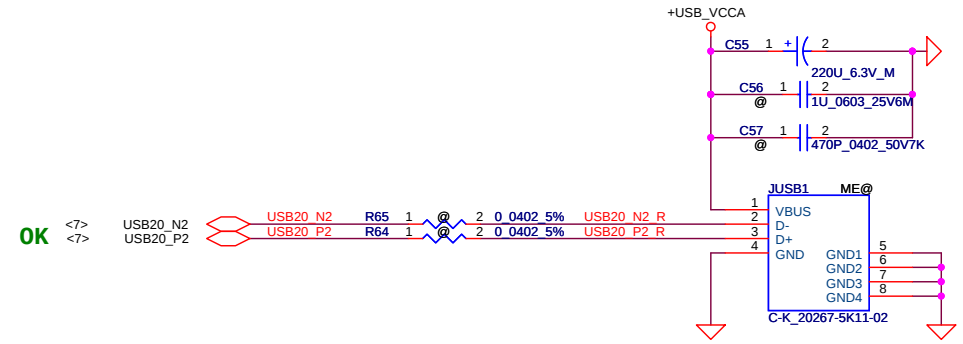
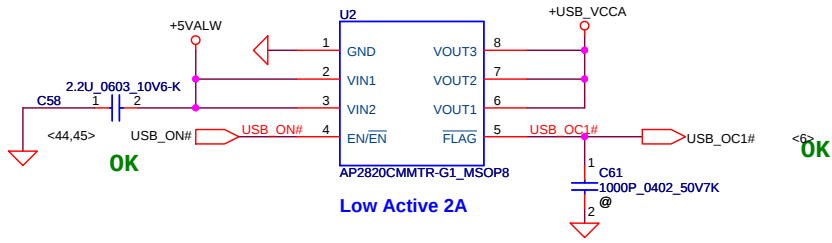


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Issued Date	2013/08/08	Deciphered Date	2013/08/05	Thermal sensor/FAN CONN	
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				Date:	Thursday, February 20, 2014
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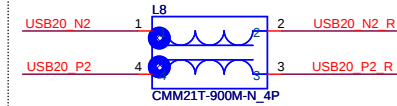
Mini-Express Card(WLAN/WiMAX)



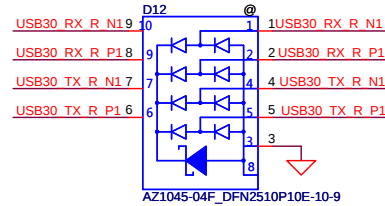
LEFT SIDE USB3.0 PORT X2



OK

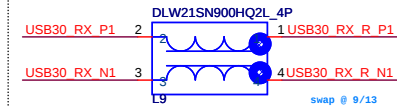


OK

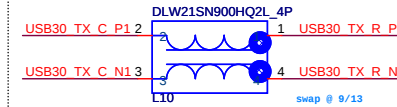


For EMC

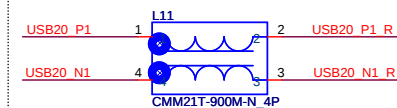
OK



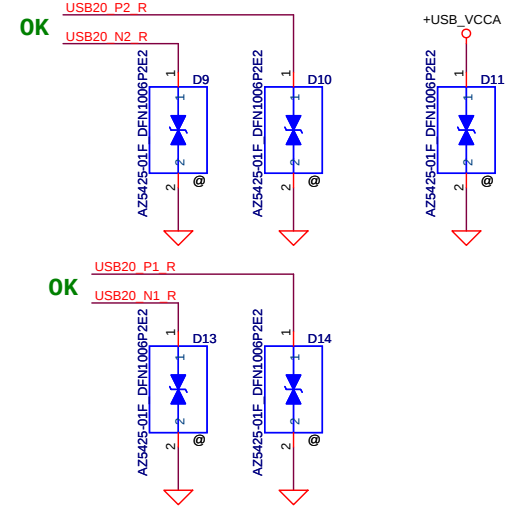
OK



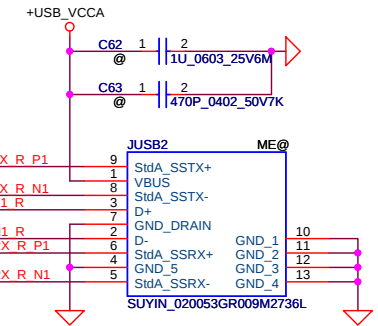
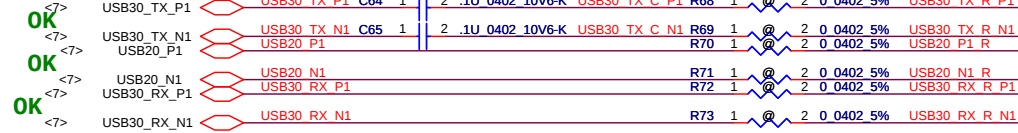
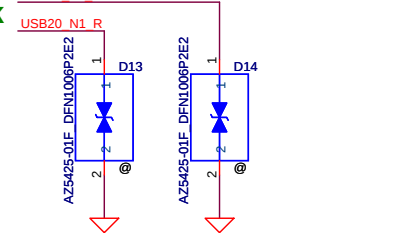
OK



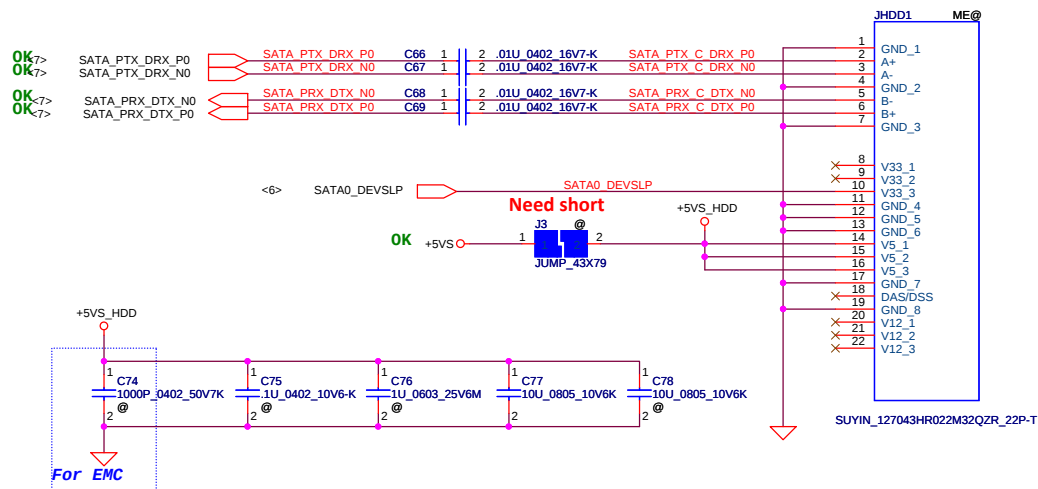
For EMC



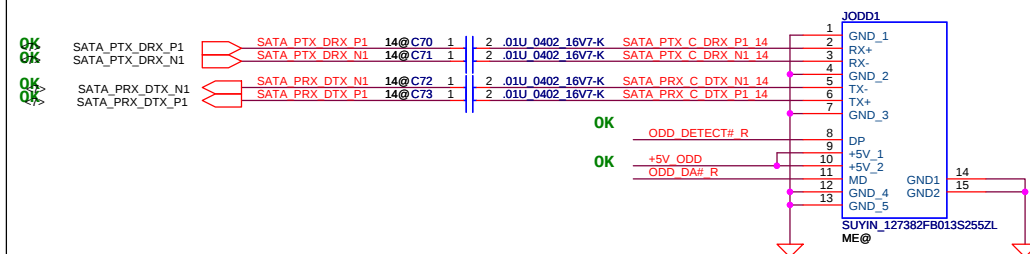
OK



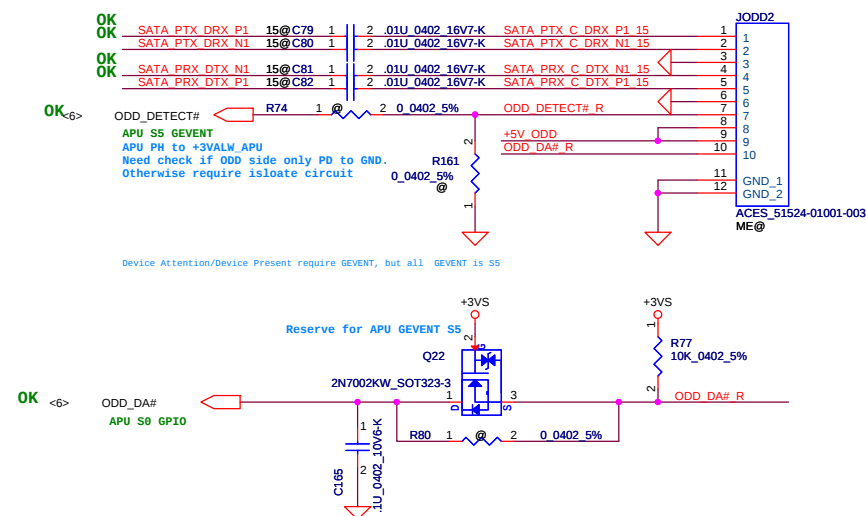
Security Classification		LC Future Center Secret Data		Title		
Issued Date	2013/08/08	Deciphered Date	2013/08/05	USB2.0/USB3.0 PORT (LEFT)		
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SATA HDD Conn.

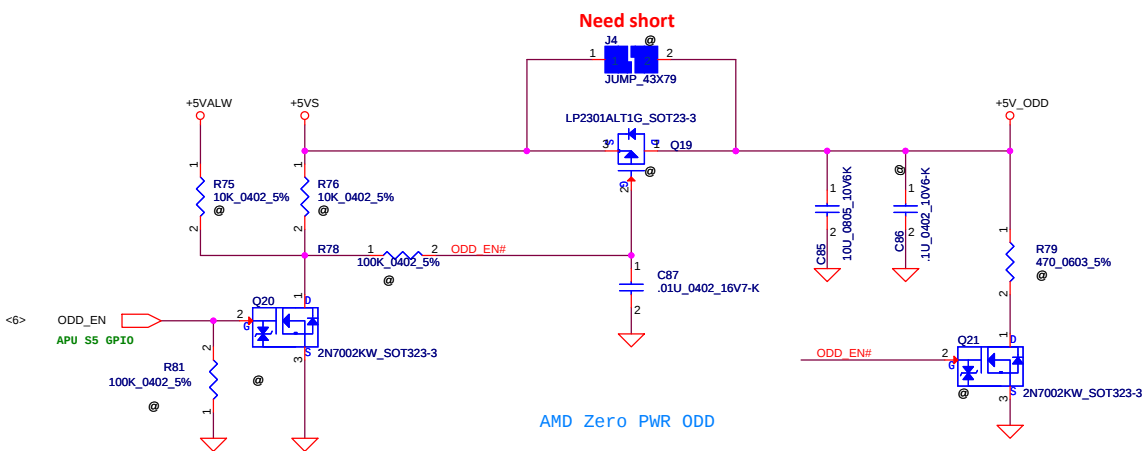
FOR 14"
SATA ODD Conn.

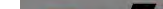


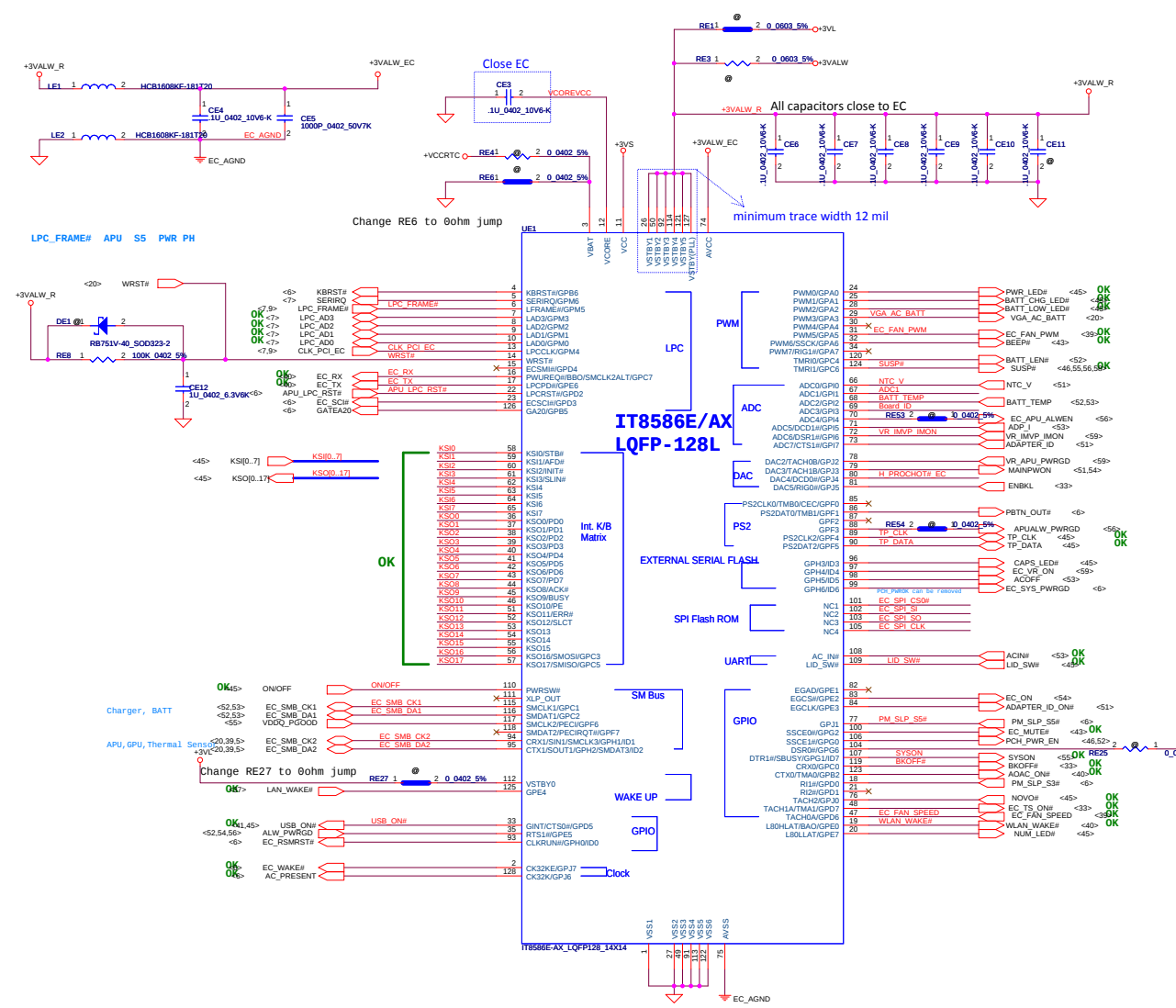
FOR 15"
SATA ODD FFC Conn



+5VS to +5V_ODD OK

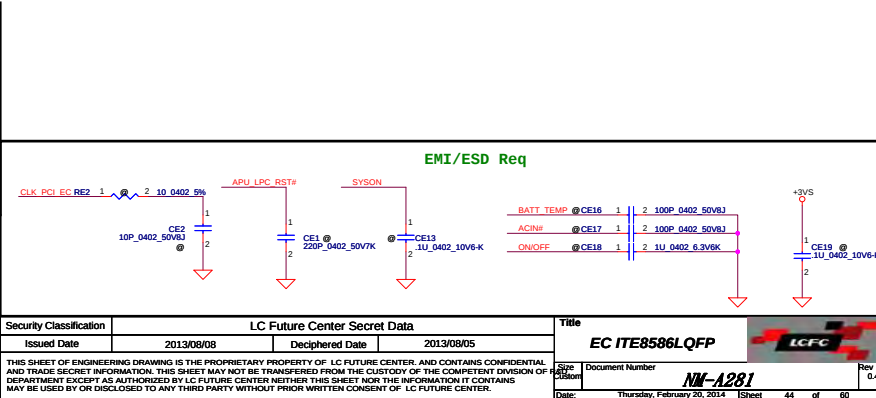
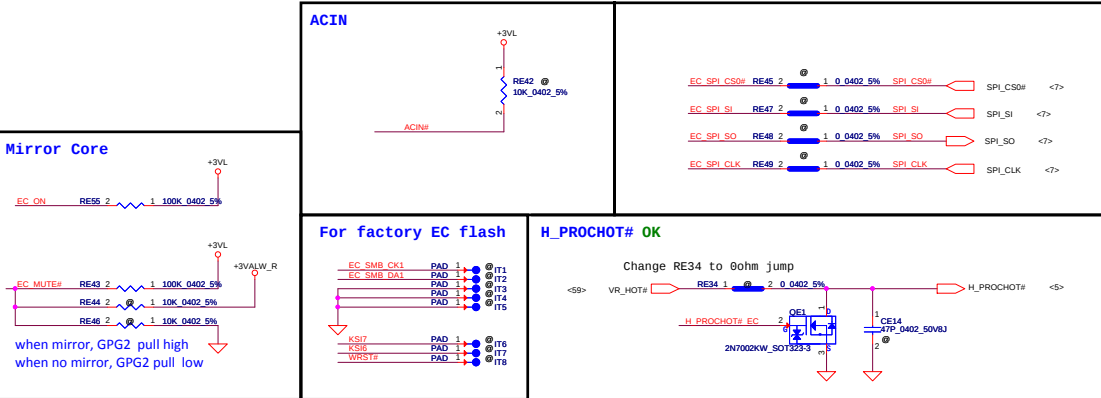


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Issued Date	2013/08/08	Deciphered Date	2013/08/05	HDD/ODD CONN			
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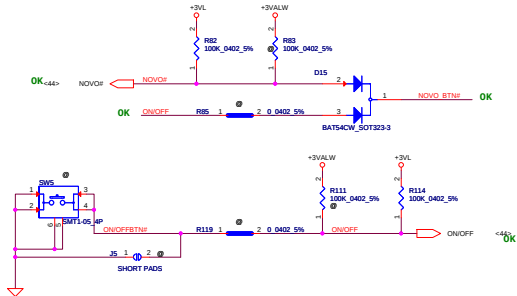


BORAD ID Config

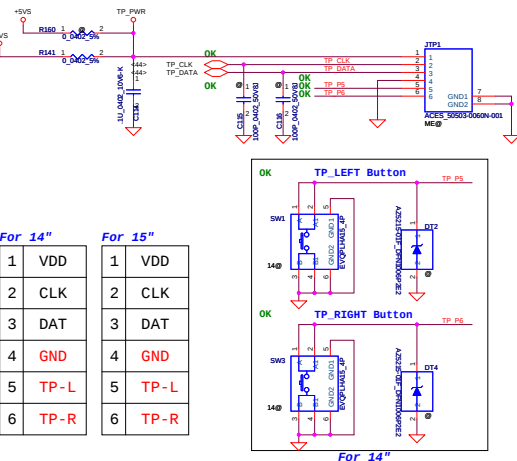
Vcc	RE33	RE34	V _{AD_BID} min	V _{AD_BID} typ	V _{AD_BID} max	Phase
3.3V +/- 5%	100K +/- 1%	0K +/- 5%	0 V	0 V	0 V	SDV
8.2K +/- 5%	0.216 V	0.250 V	0.289 V			
18K +/- 5%	0.436 V	0.503 V	0.538 V			
33K +/- 5%	0.712 V	0.819 V	0.875 V			
4.7K +/- 5%	0.141 V	0.148 V	0.155 V			
24K +/- 5%	0.612 V	0.638 V	0.664 V			



ON/OFF switch



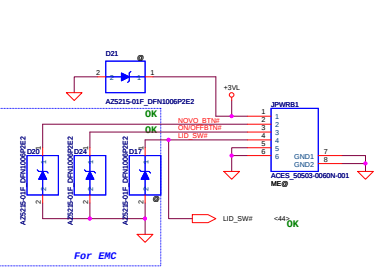
TP/B Connector



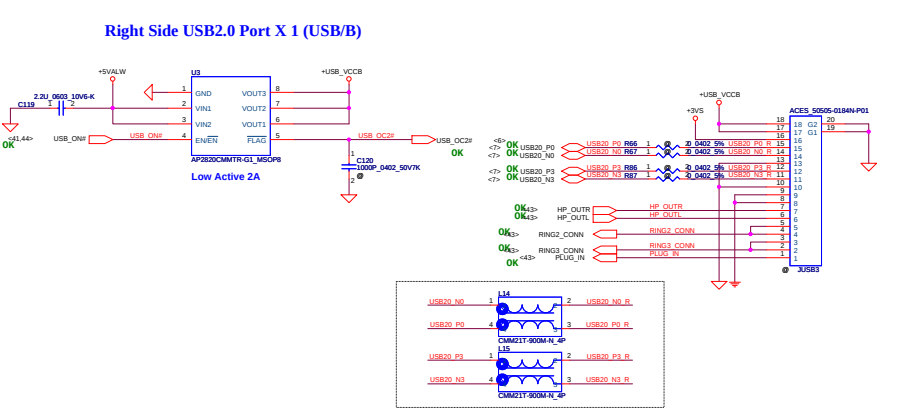
K/B Connector



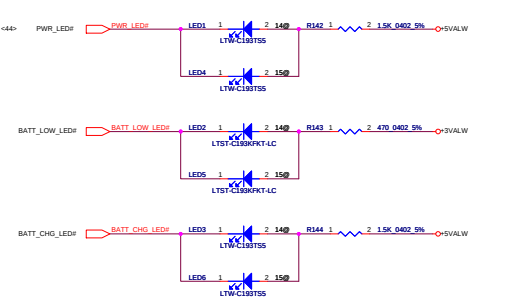
PWR/B Connector



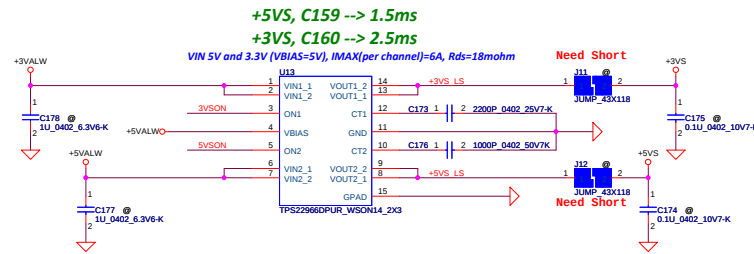
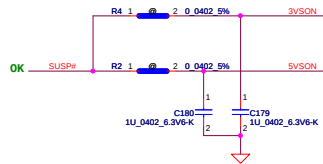
USB I/O Connector



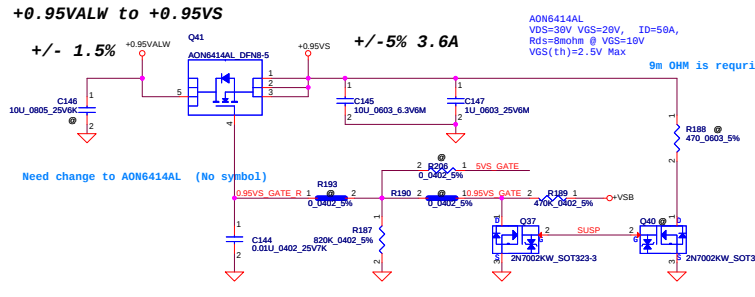
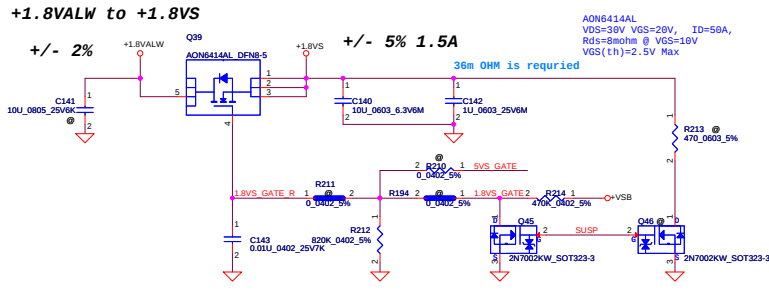
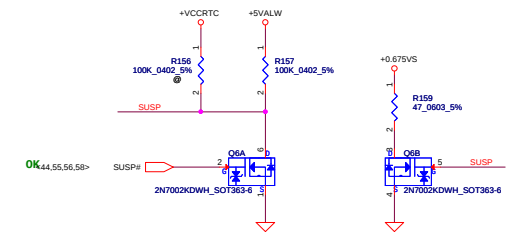
LED



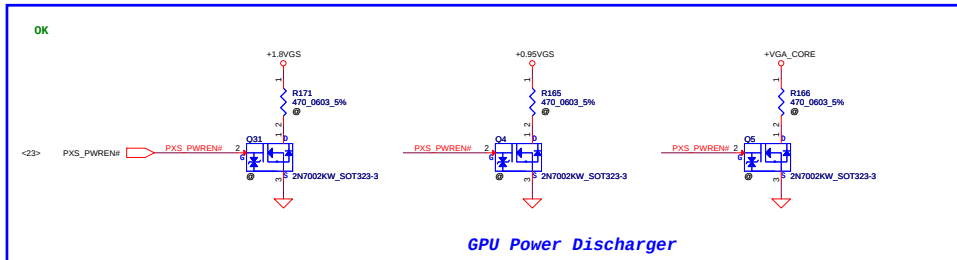
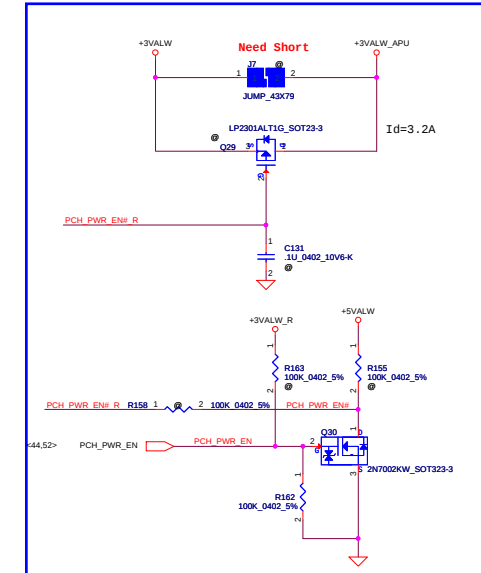
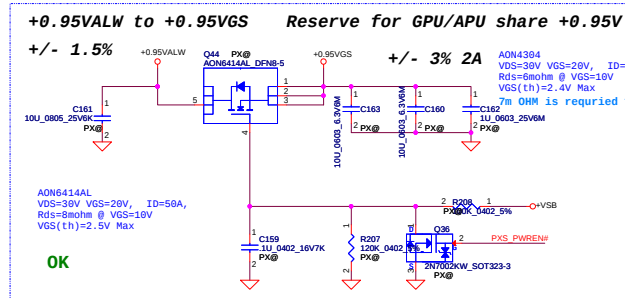
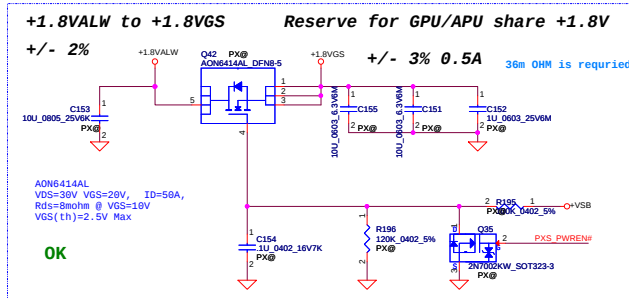
Load Switch
+5VALW To +5VS OK
+3VALW To +3VS



For DisCharge



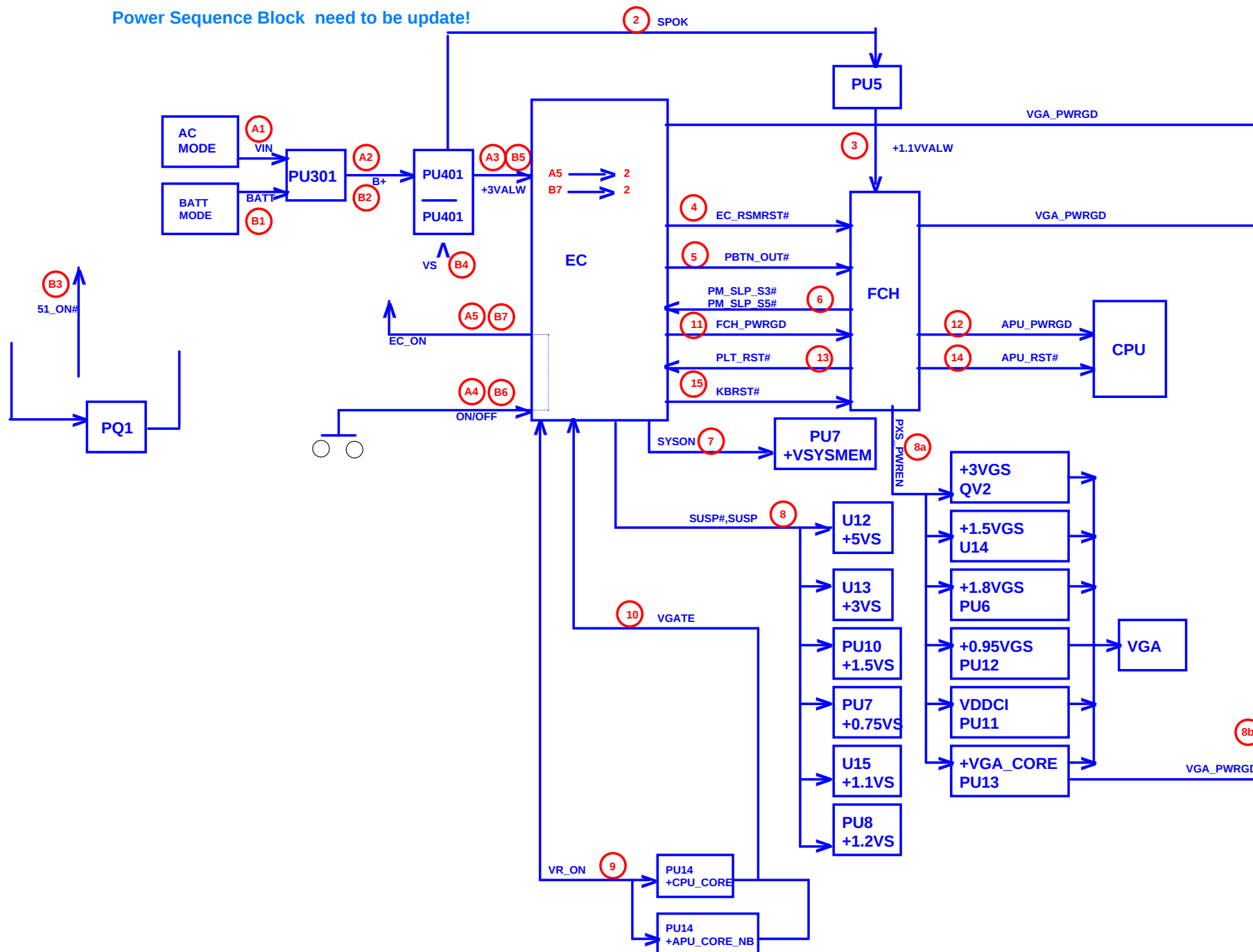
Need check all the EN pin and PWR Sequence.



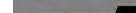
GPU Power Discharge

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2013/08/15	Deciphered Date	2013/08/15	DC V TO VS INTERFACE	
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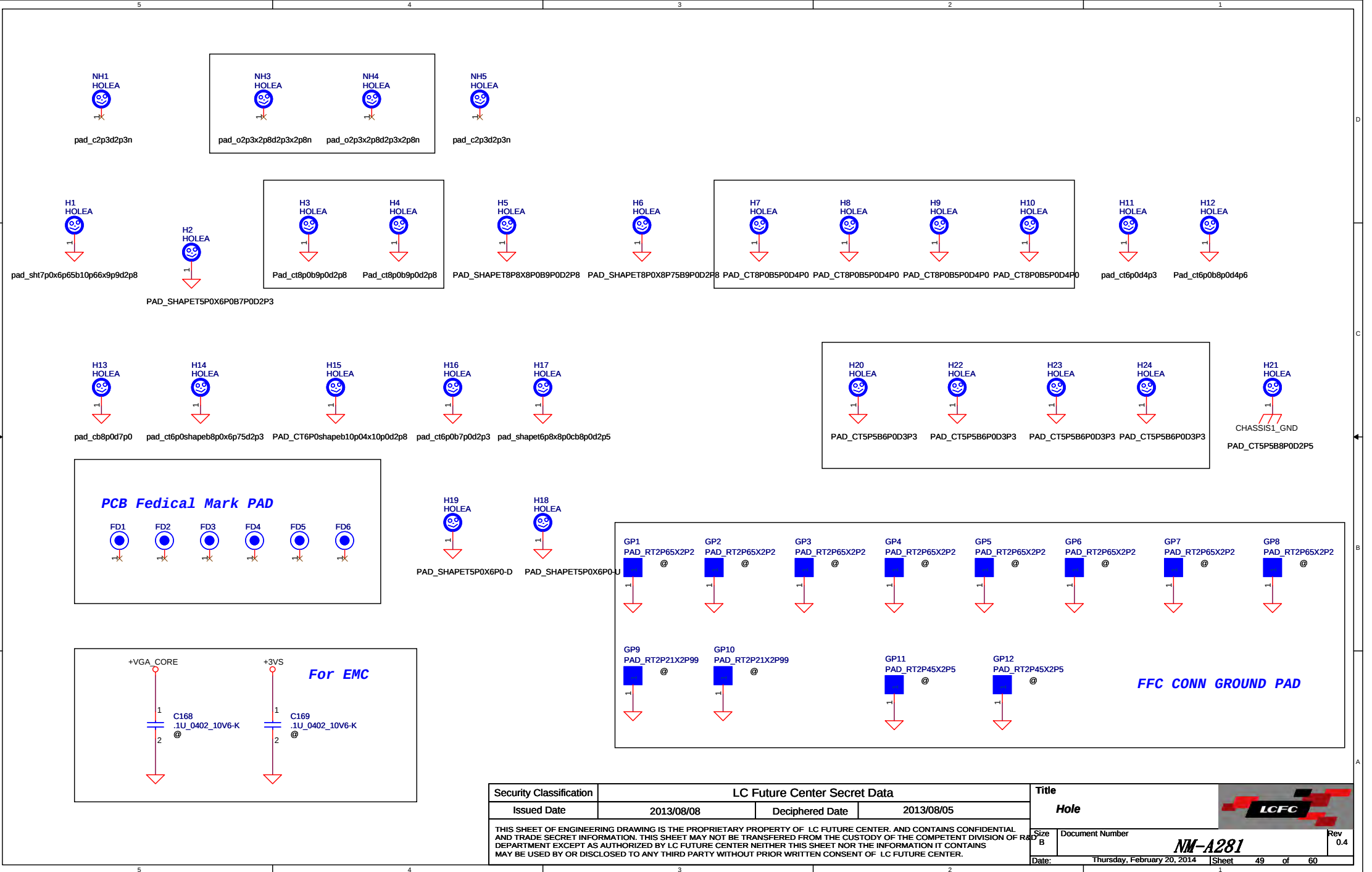
Power Sequence Block need to be update!

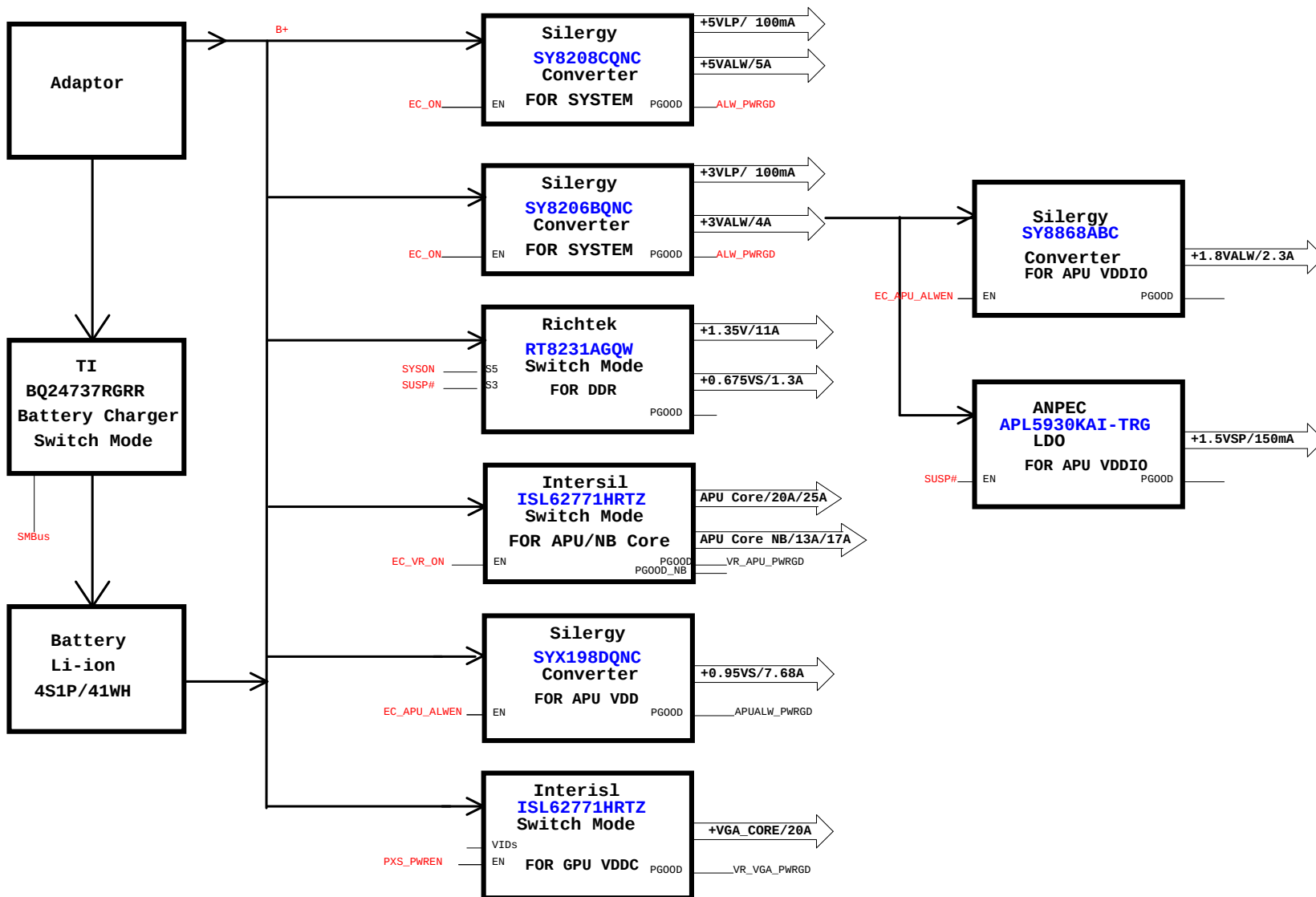


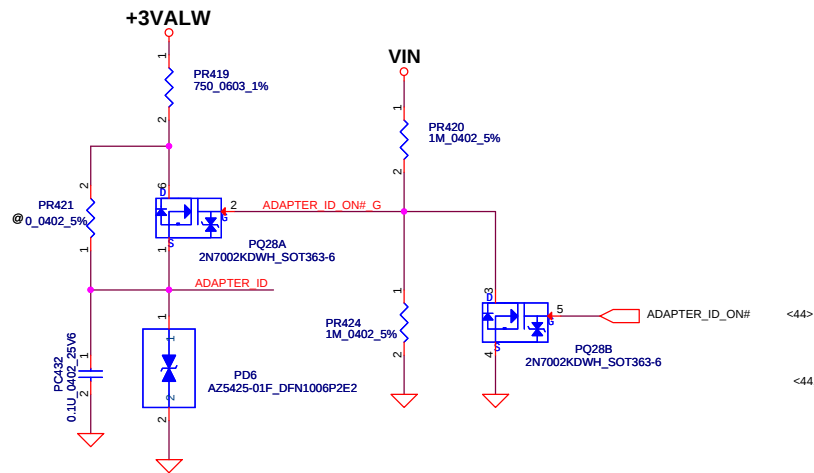
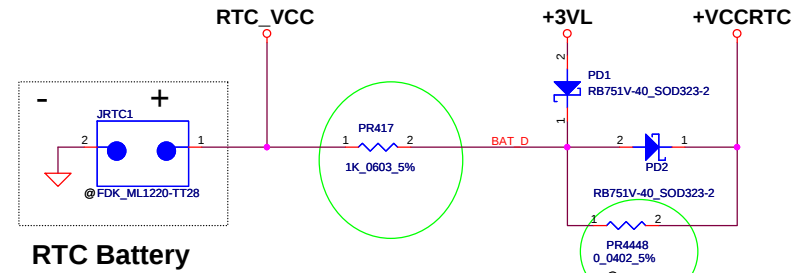
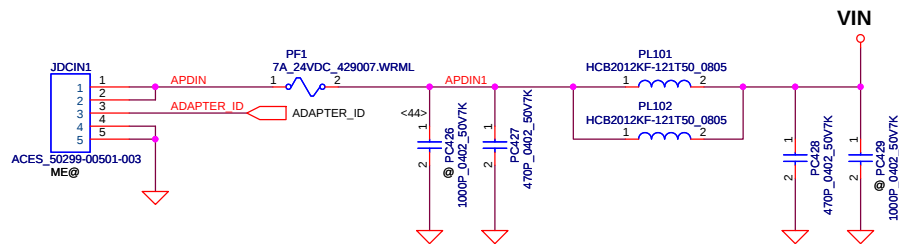
Security Classification	LC Future Center Secret Data		
Issued Date	2013/08/15	Deciphered Date	2013/08/15
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Title			
Power sequence Block			
Size Custom	Document Number	Rev	
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Date:	Thursday, February 20, 2014	Sheet	47 of 60

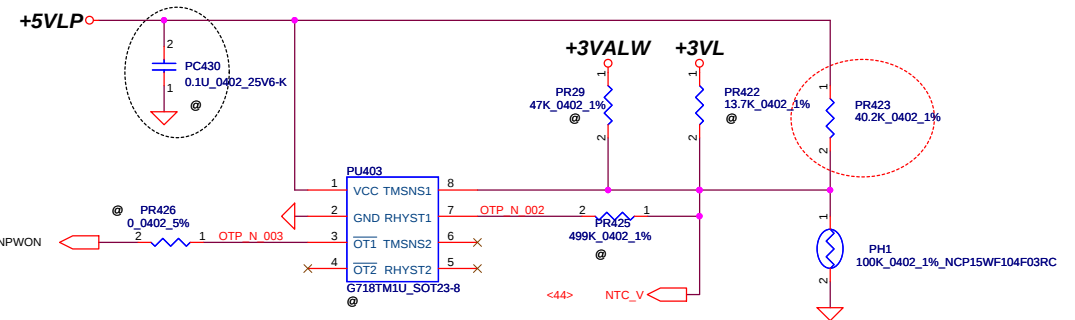
5		4		3		2		1	
D									
C									
B									
A									
								</	



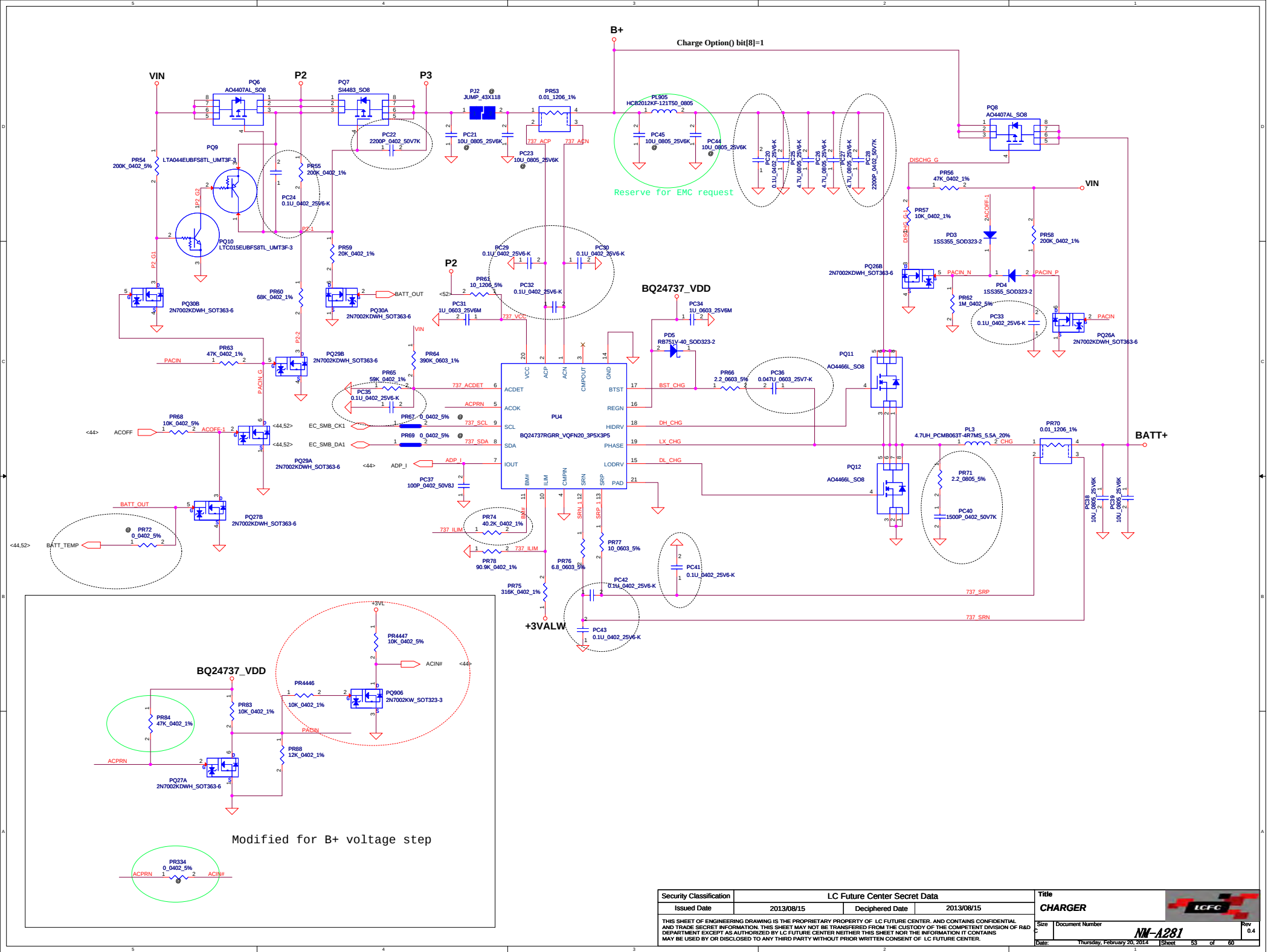


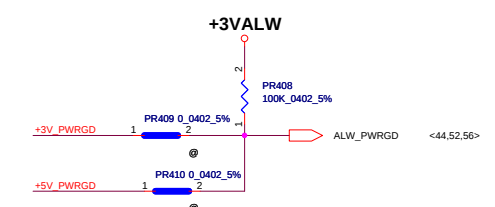
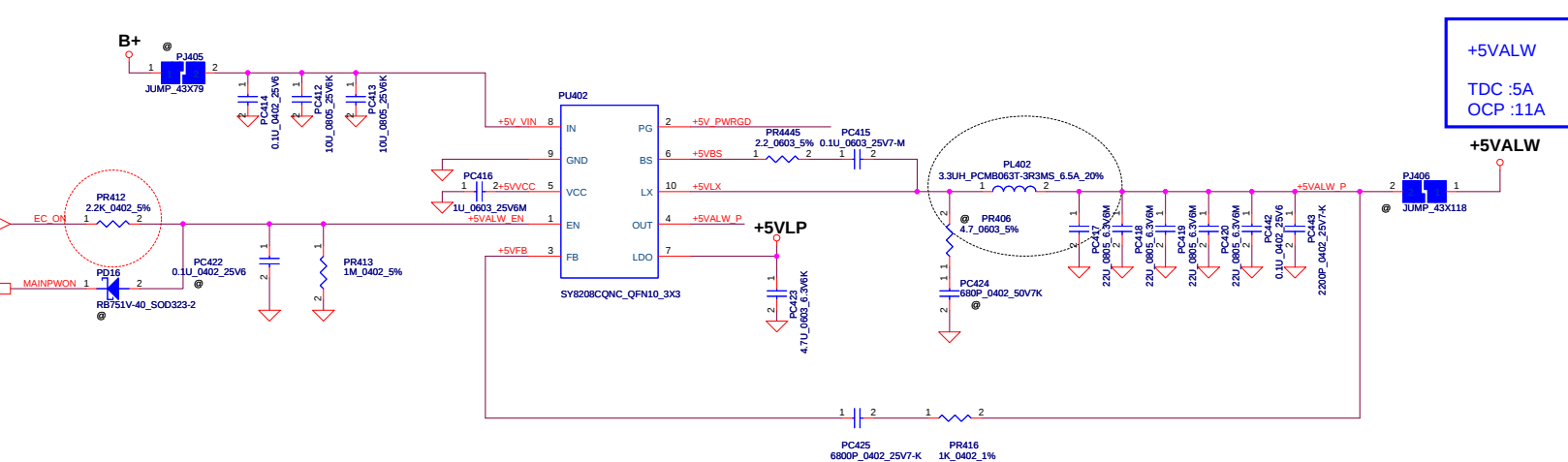
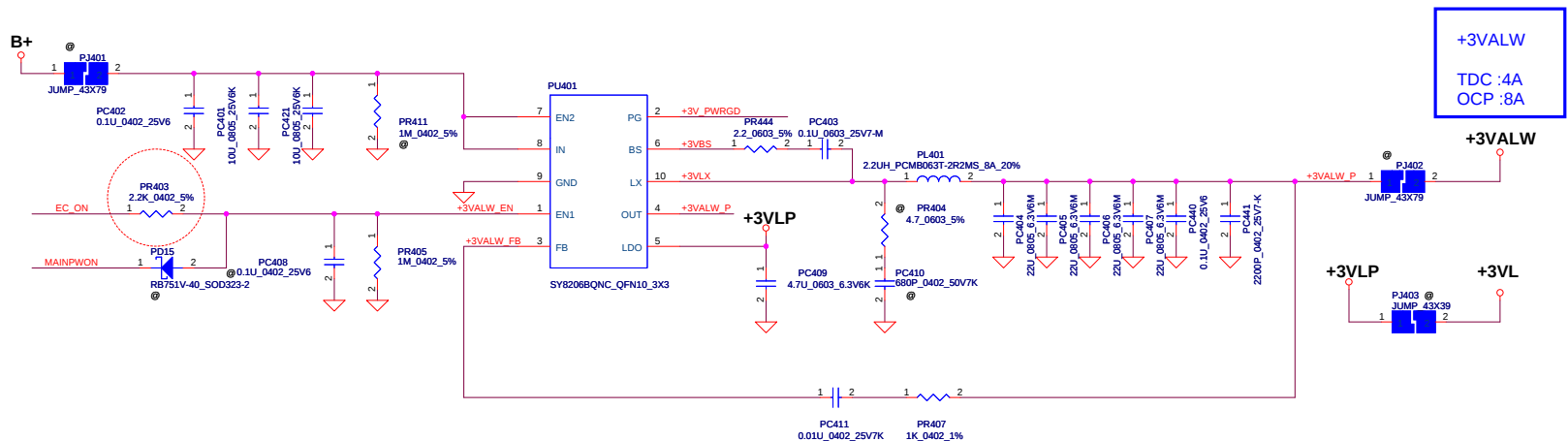


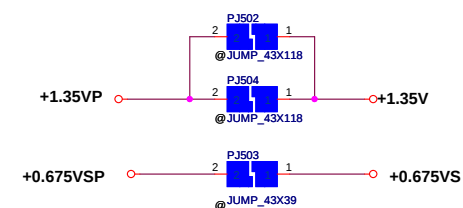
PH1 under CPU bottom side :
CPU thermal protection at 92+/-3 degree C
Recovery at 56 +/-3 degree C



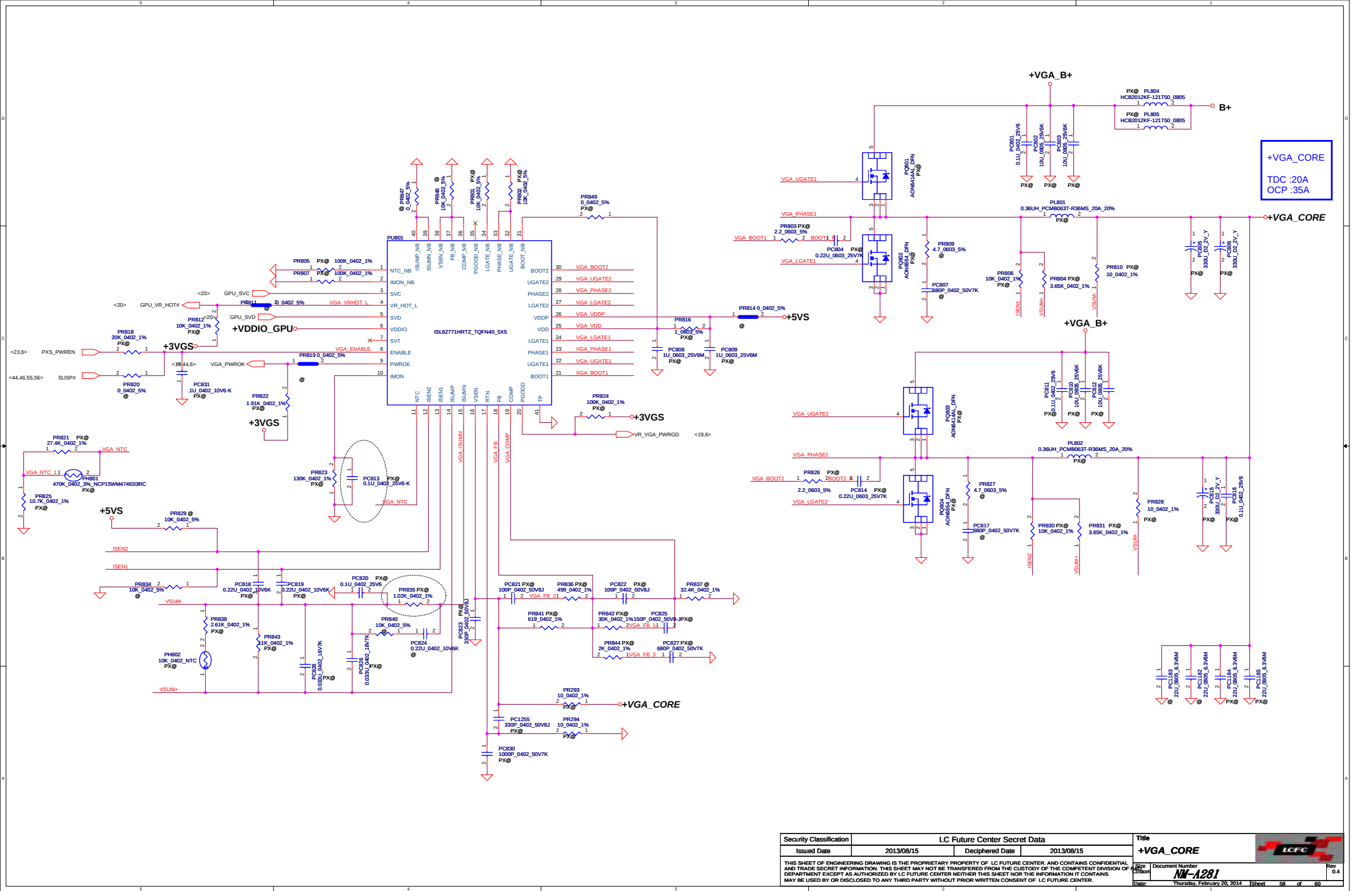
Security Classification	LC Future Center Secret Data			Title	
Issued Date	2013/08/15	Deciphered Date	2013/08/15	DCIN / RTC	
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					Sheet 51 of 60 Rev 0.4

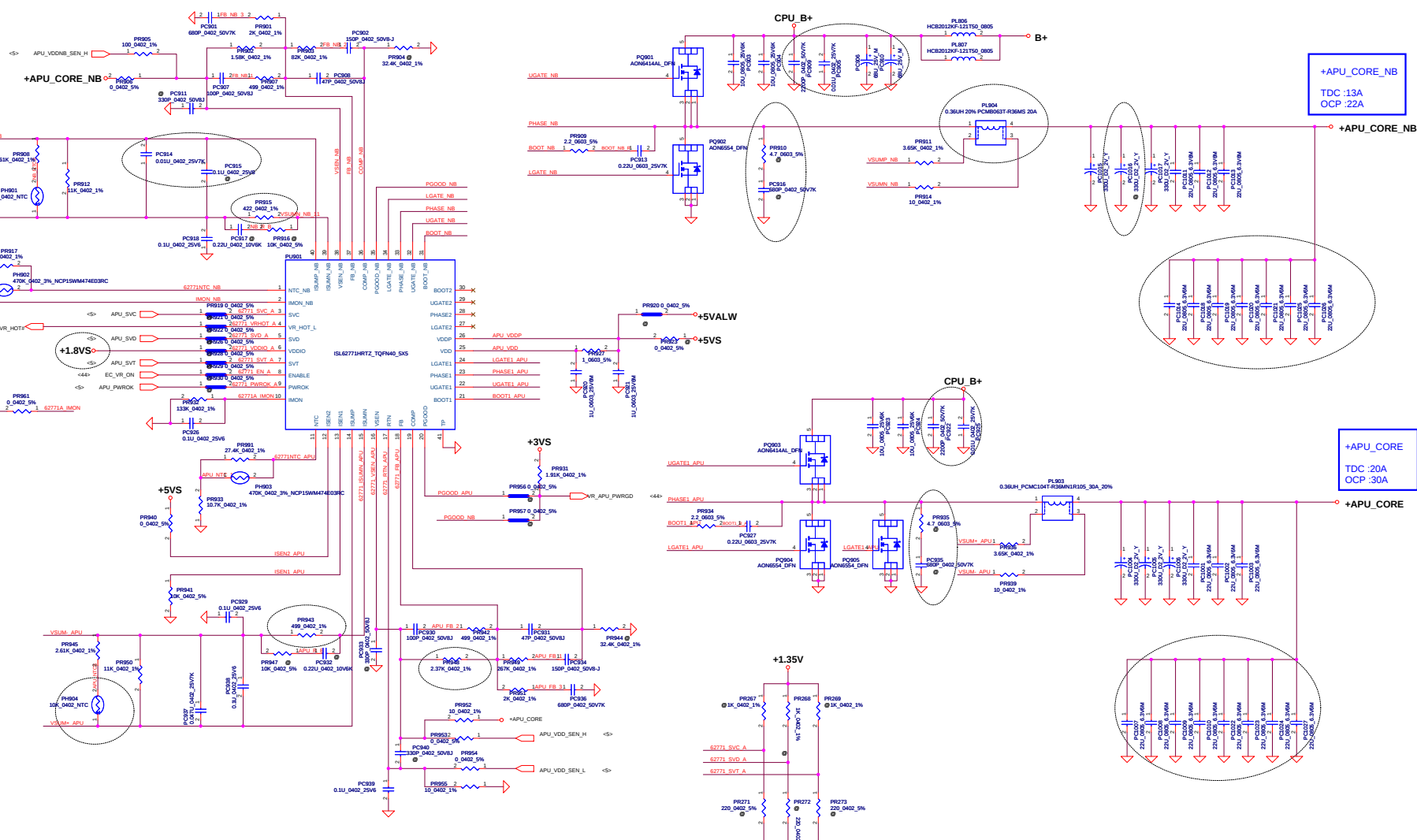






5	4	3	2	1
D				D
C				C
B				B
A				A





PRE-PWROK METAL VID CODES

SVC	SVD	Boot Voltage
0	0	1.1V
0	1	1.0V
1	0	0.9V
1	1	0.8V(Default)

Security Classification	LC Future Center Secret Data			Title	
Issued Date	2013/08/15	Deciphered Date	2013/08/15	PROCESSOR DECOUPLING Size Document Number NM-A281 Rev 0.4	
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