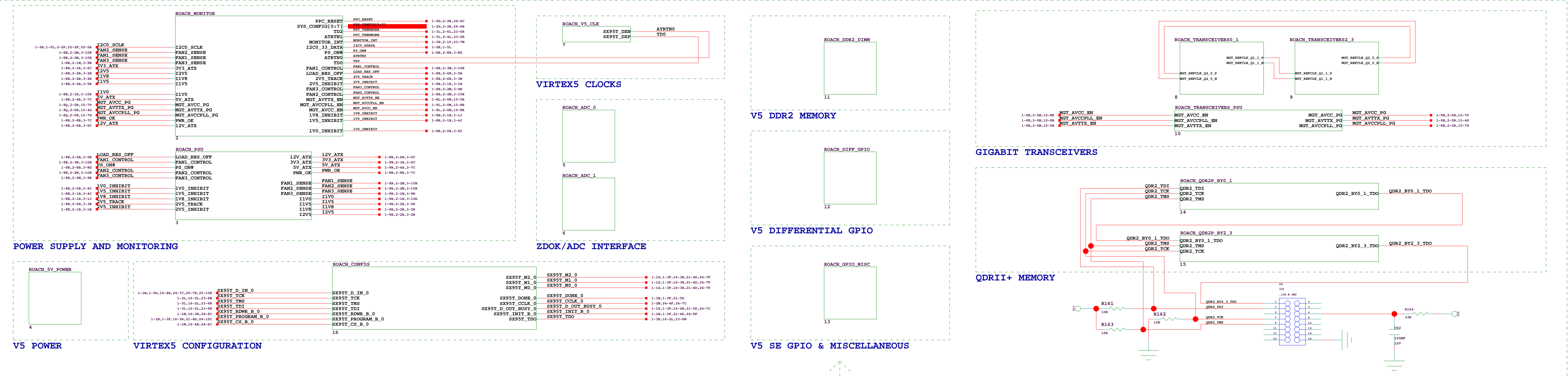
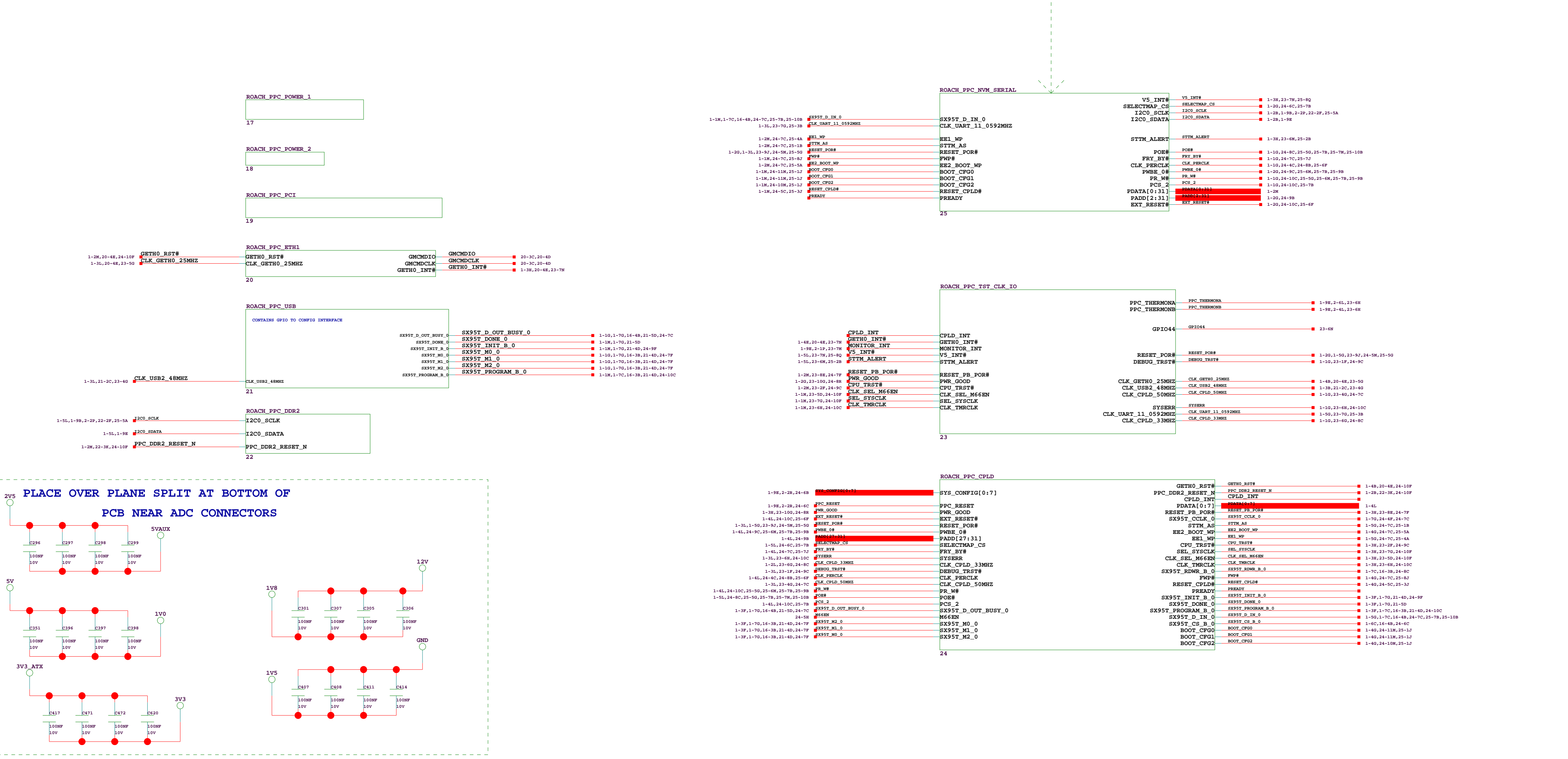


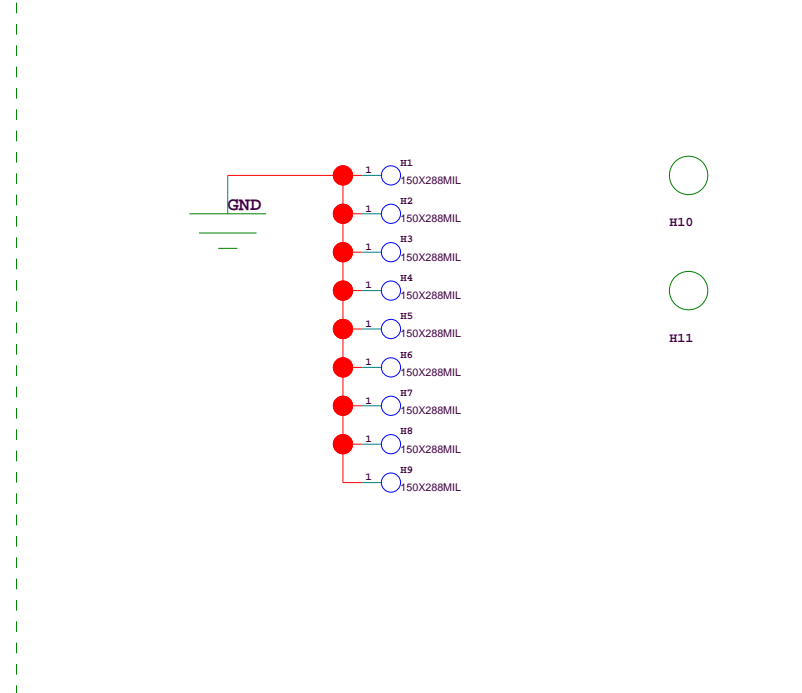
## VIRTEX5



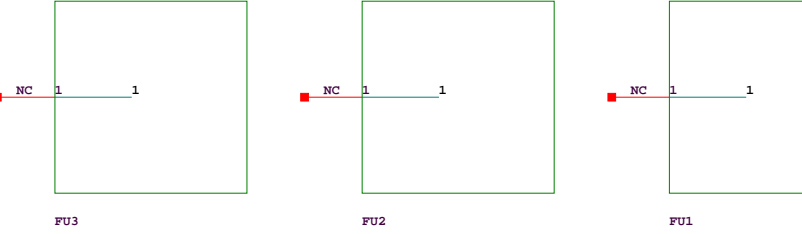
## PPC



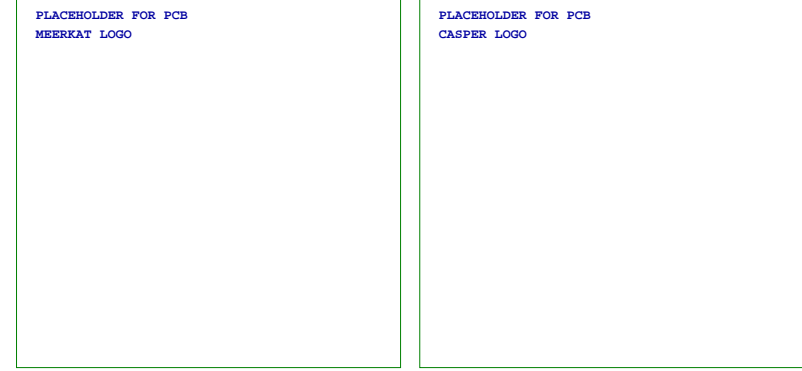
## MECHANICAL



## BOARD FIDUCIALS



## LOGO'S

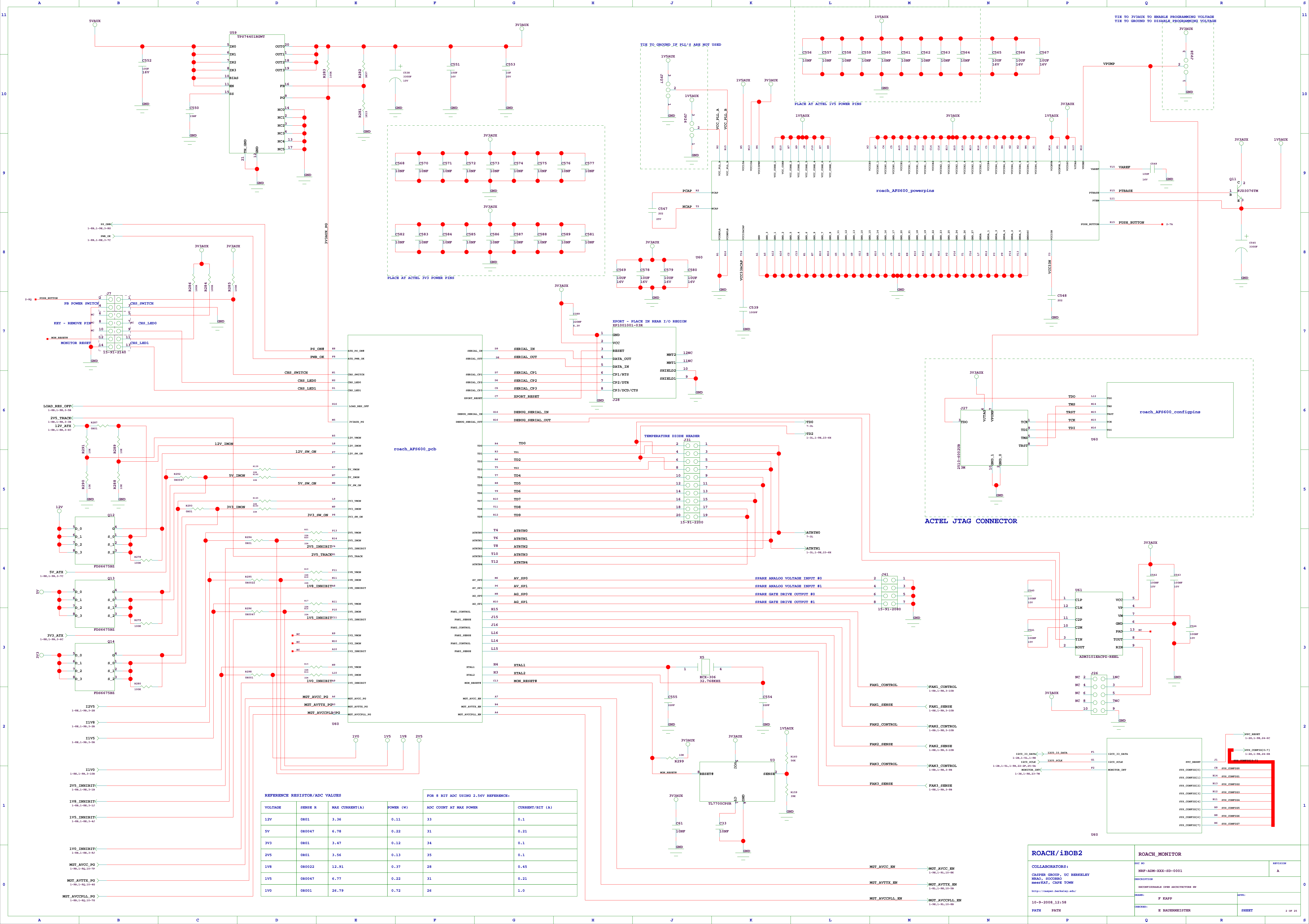


### CONTRIBUTORS

STEVEN BAUMGARTNER  
STEVEN CHEN  
STEVEN DUNN  
FRANCIS KAPP  
ALAN LAMMAN  
GORDON PECK  
MIKE REYNOLDS  
NATHAN SP  
DAN WEINSTEIN

### ROACH/iBOB2

COLLABORATORS:		ROACH_TOP
CASPER GROUP, UC BERKELEY		DOC NO
NRAO, SOONERO		REF-ADM-XXX-SD-0001
Reconfigurable Open Architecture HW		A
http://casper.berkeley.edu/		DESCRIPTION
10-9-2008, 12:58		RECONFIGURABLE OPEN ARCHITECTURE HW
PATH		NAME
F KAPP		10-9-2008, 12:58
R BAUMGARTNER		CHECKED
SHEET		1 OF 25



REFERENCE RESISTOR/ADC VALUES

VOLTAGE	SENSE R	MAX CURRENT(A)	POWER (W)	ADC COUNT AT MAX POWER	CURRENT/BIT (A)
12V	0R01	3.36	0.11	33	0.1
5V	0R0047	6.78	0.22	31	0.21
3V3	0R01	3.47	0.12	34	0.1
2V5	0R01	3.56	0.13	35	0.1
1V8	0R0022	12.91	0.37	28	0.45
1V5	0R0047	6.77	0.22	31	0.21
1V0	0R001	26.79	0.72	26	1.0

FOR 8 BIT ADC USING 2.56V REFERENCE:

VOLTAGE	SENSE R	MAX CURRENT(A)	POWER (W)	ADC COUNT AT MAX POWER	CURRENT/BIT (A)
12V	0R01	3.36	0.11	33	0.1
5V	0R0047	6.78	0.22	31	0.21
3V3	0R01	3.47	0.12	34	0.1
2V5	0R01	3.56	0.13	35	0.1
1V8	0R0022	12.91	0.37	28	0.45
1V5	0R0047	6.77	0.22	31	0.21
1V0	0R001	26.79	0.72	26	1.0

ROACH/iBOE2

COLLABORATORS:  
CASPER GROUP, UC BERKELEY  
NRAO, SOCCORRO  
BAAE/KAT, CAPE TOWN  
<http://casper.berkeley.edu/>

10-9-2008, 12:58

PATH PATH

ROACH\_MONITOR

DOC NO  
NRF-ADM-XXX-SD-0001  
DESCRIPTION  
RECONFIGURABLE OPEN ARCHITECTURE HW

F KAPP

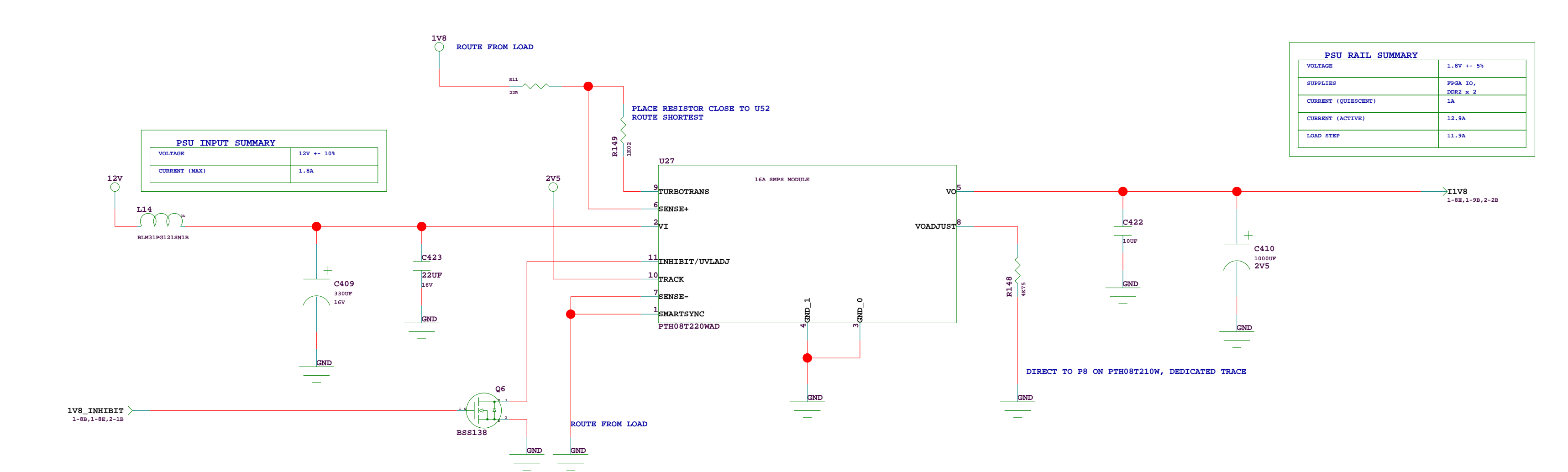
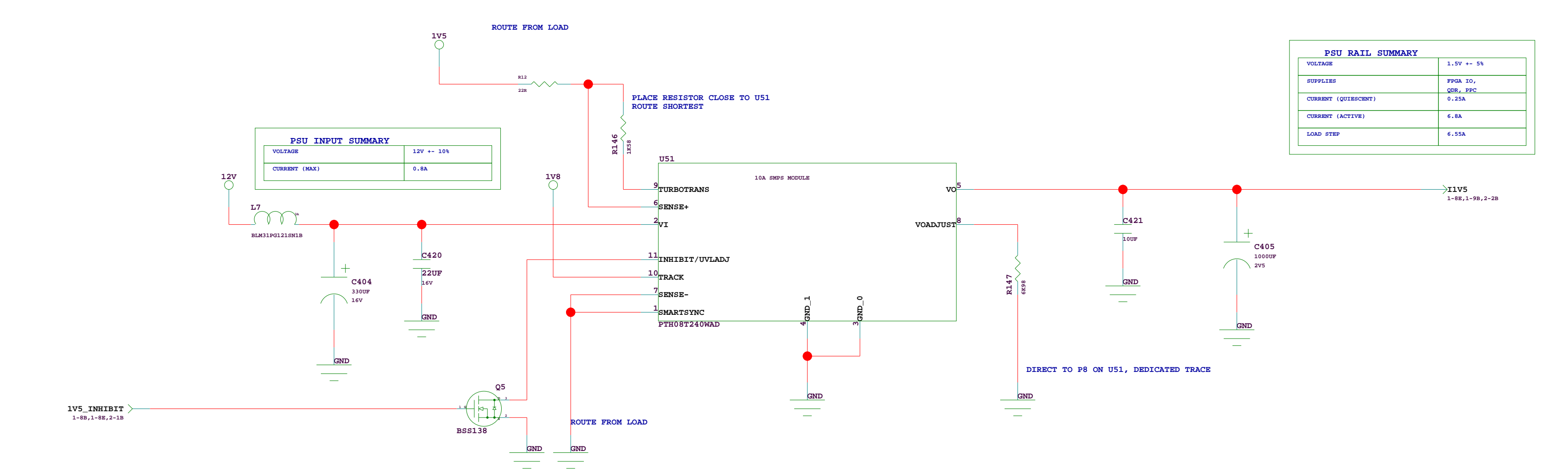
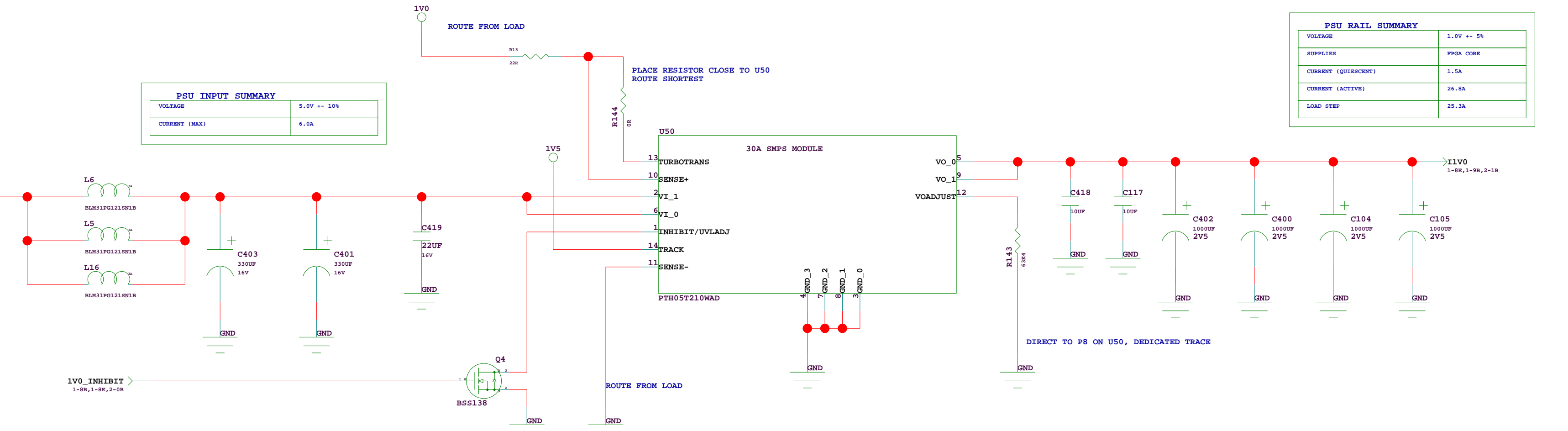
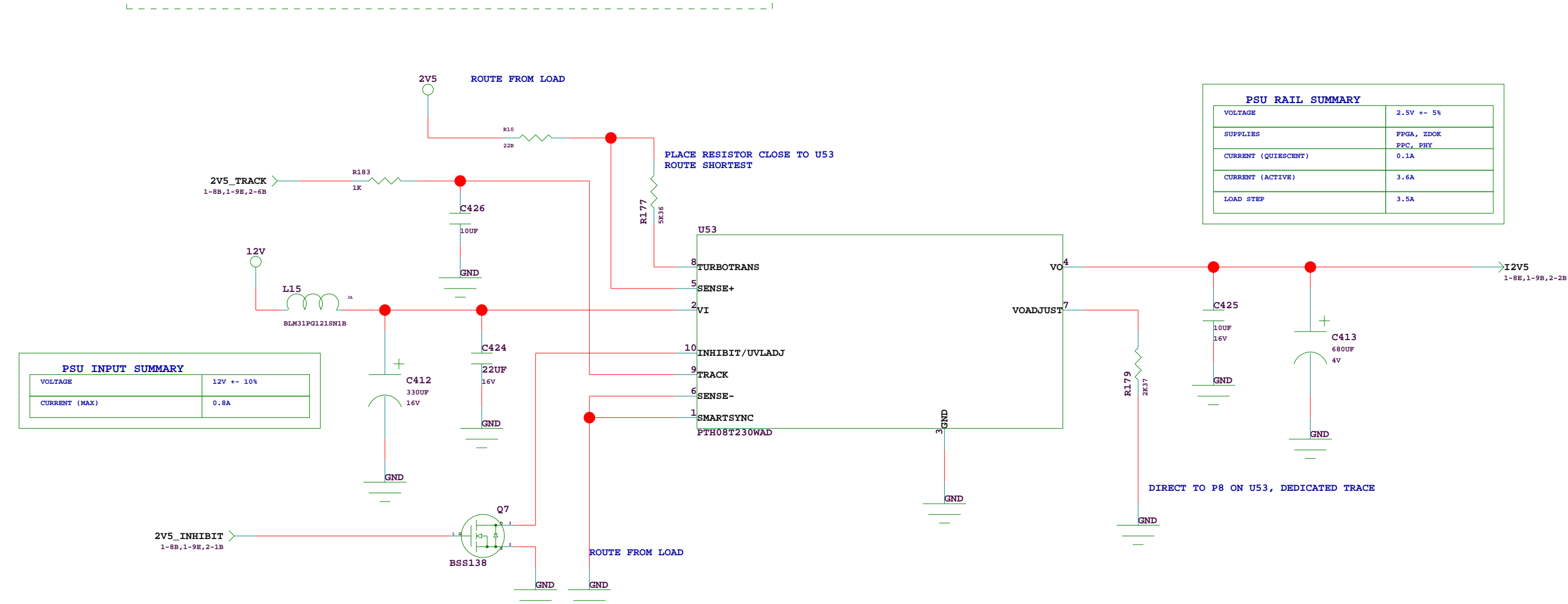
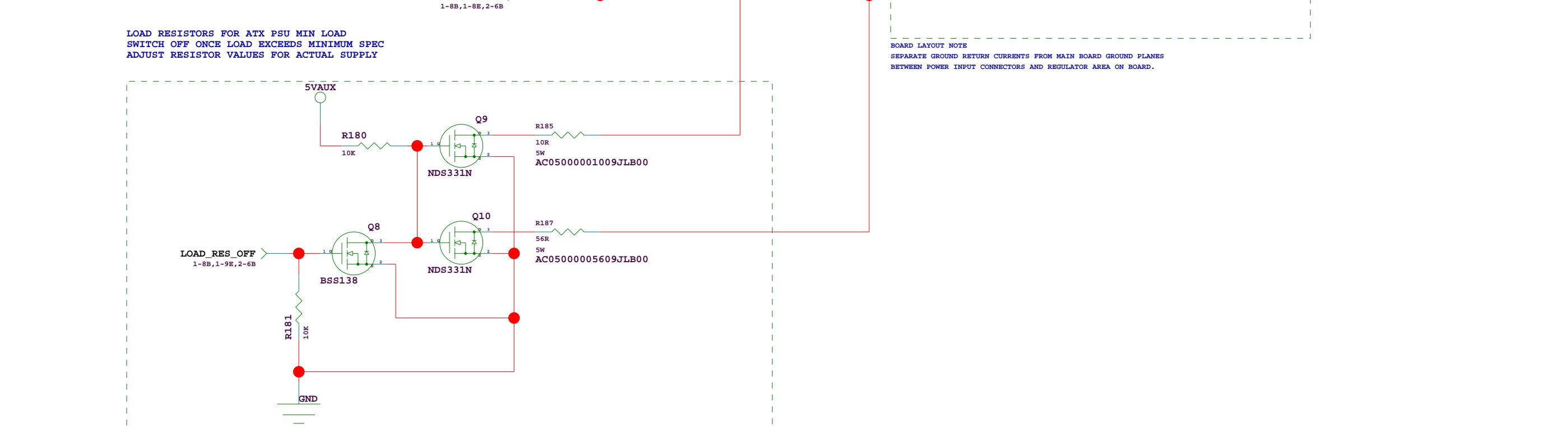
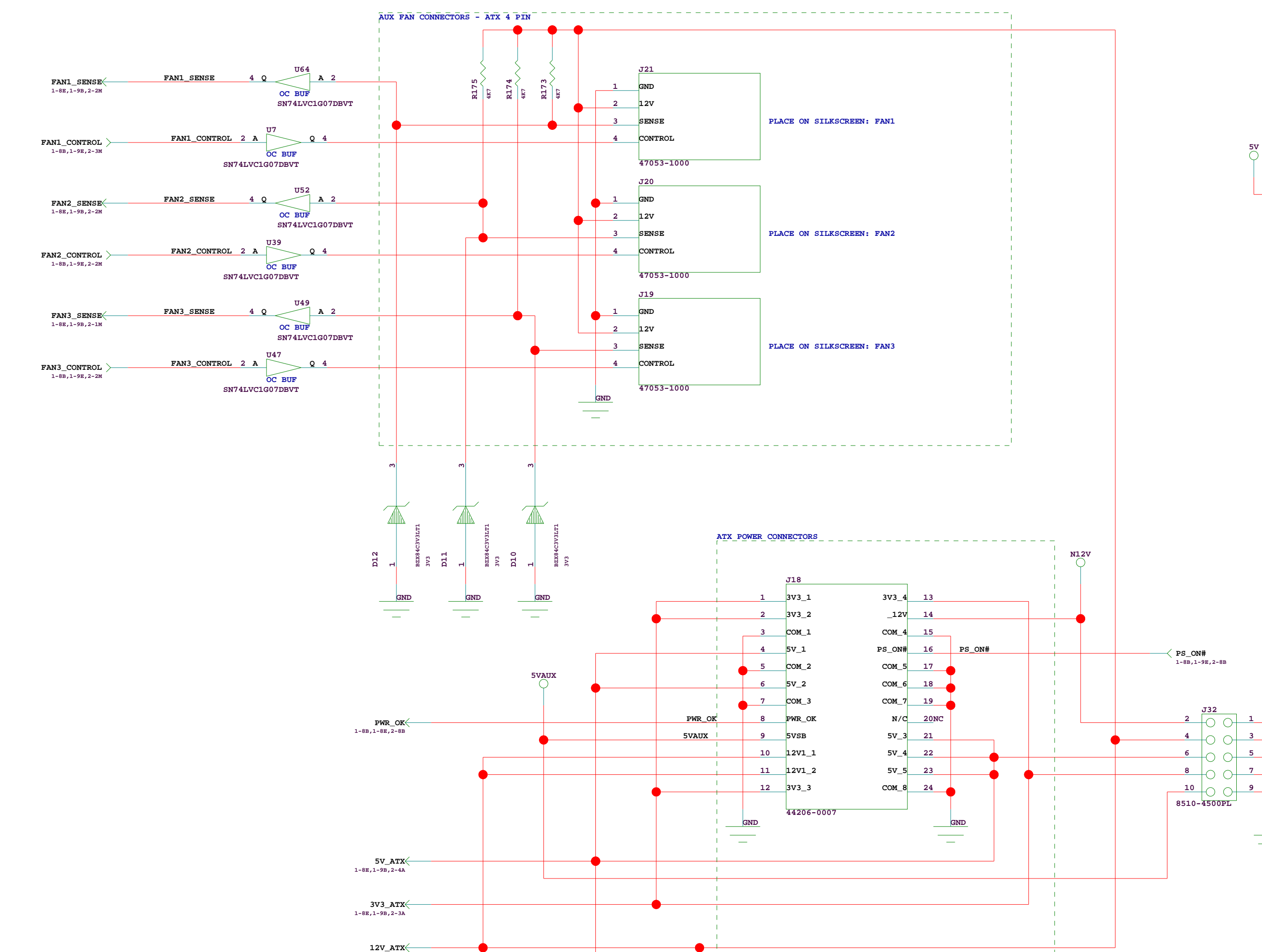
R BAUERMBISTROT

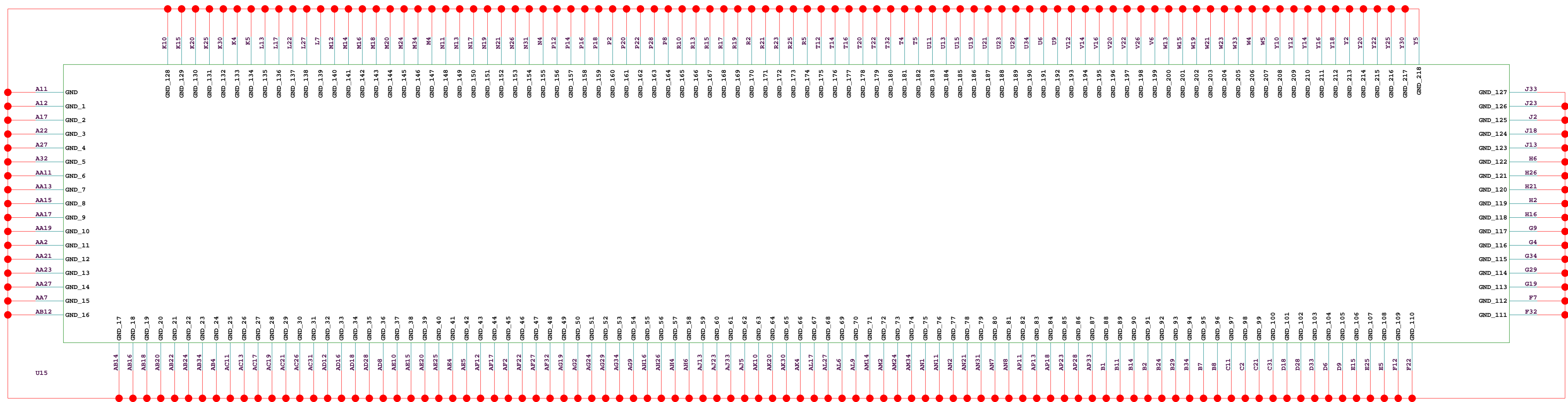
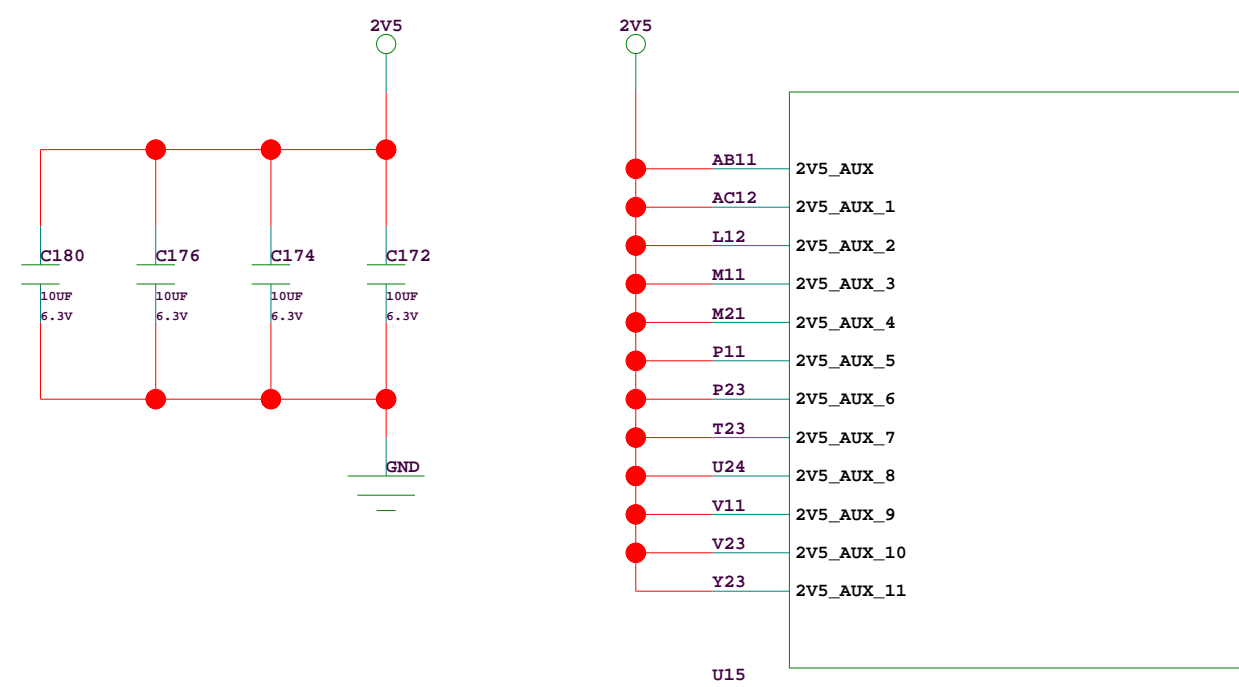
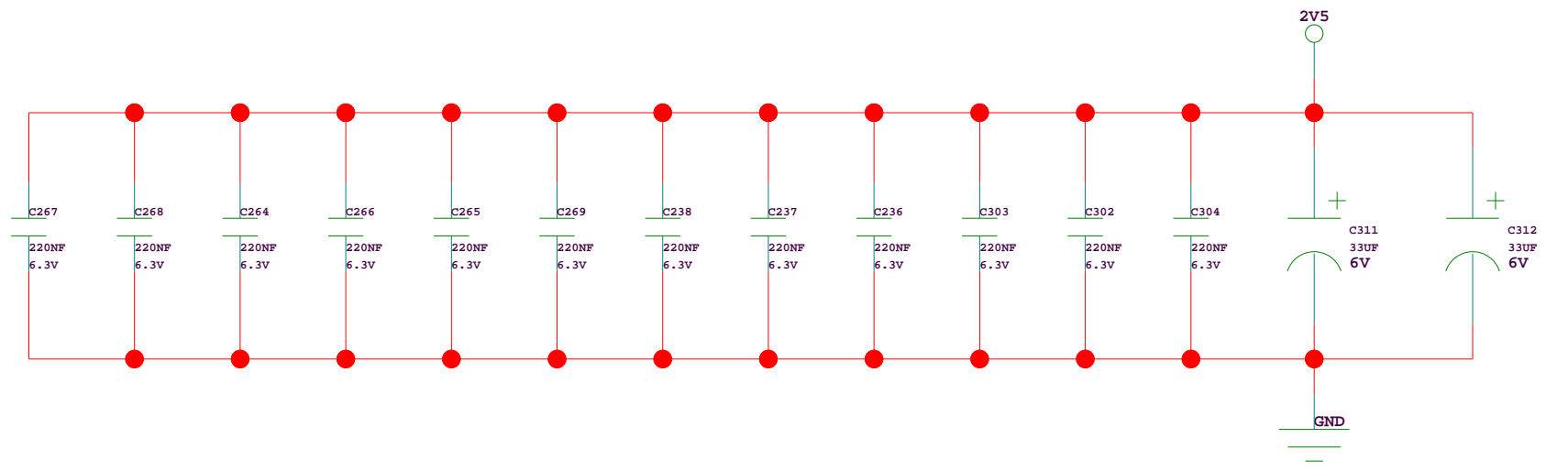
REVISION  
A

SHEET

2 OF 25

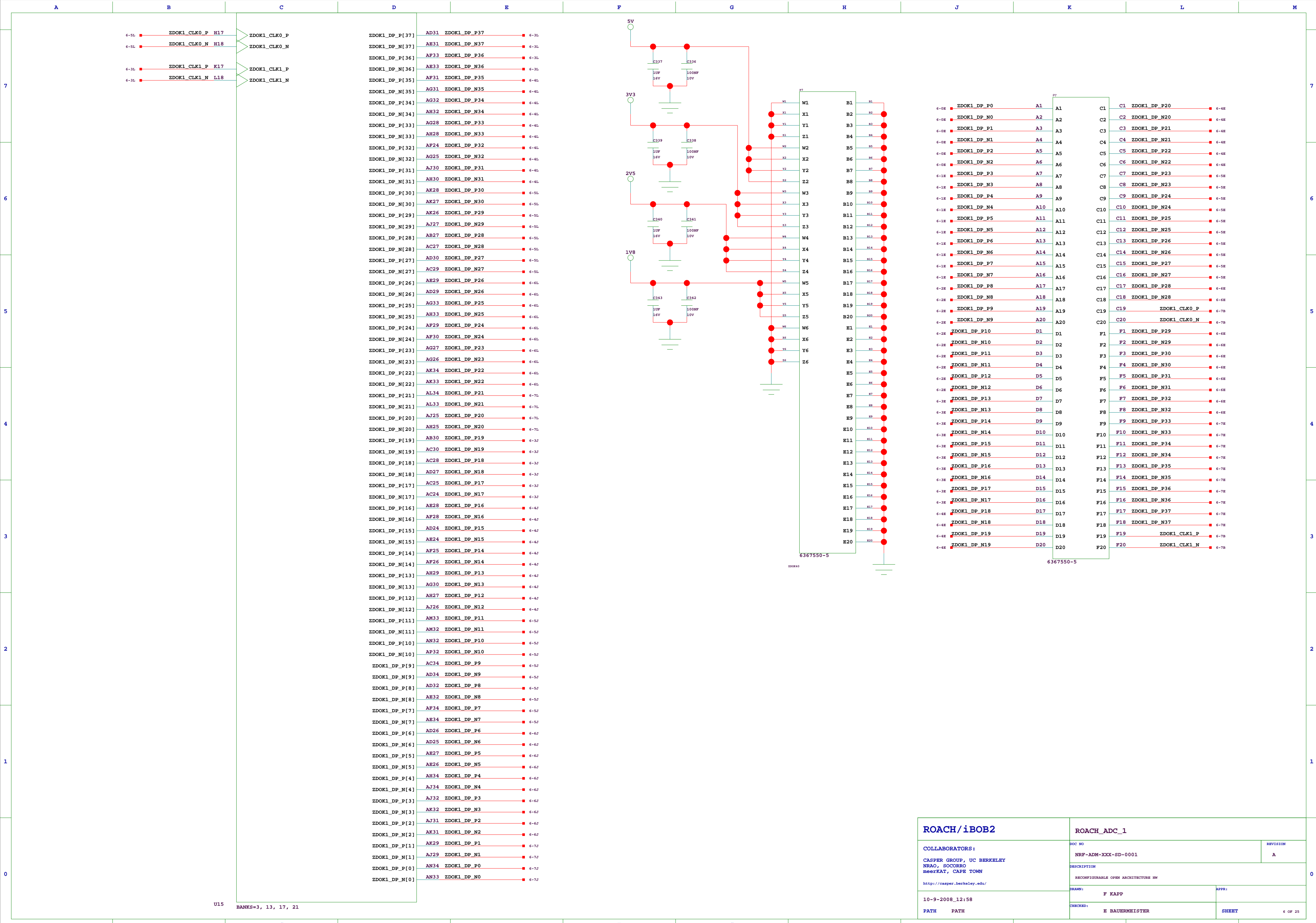




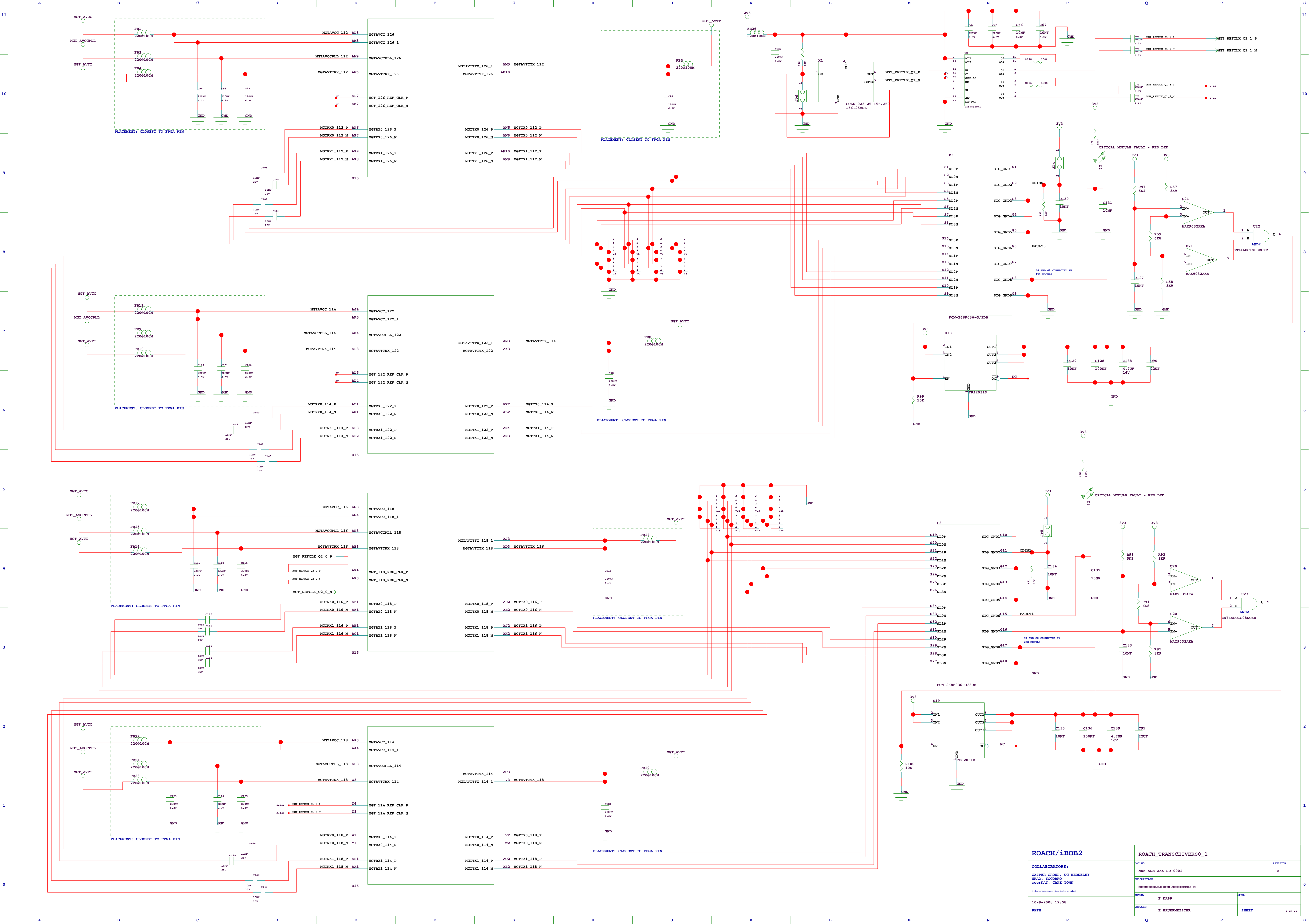
4 OF 2





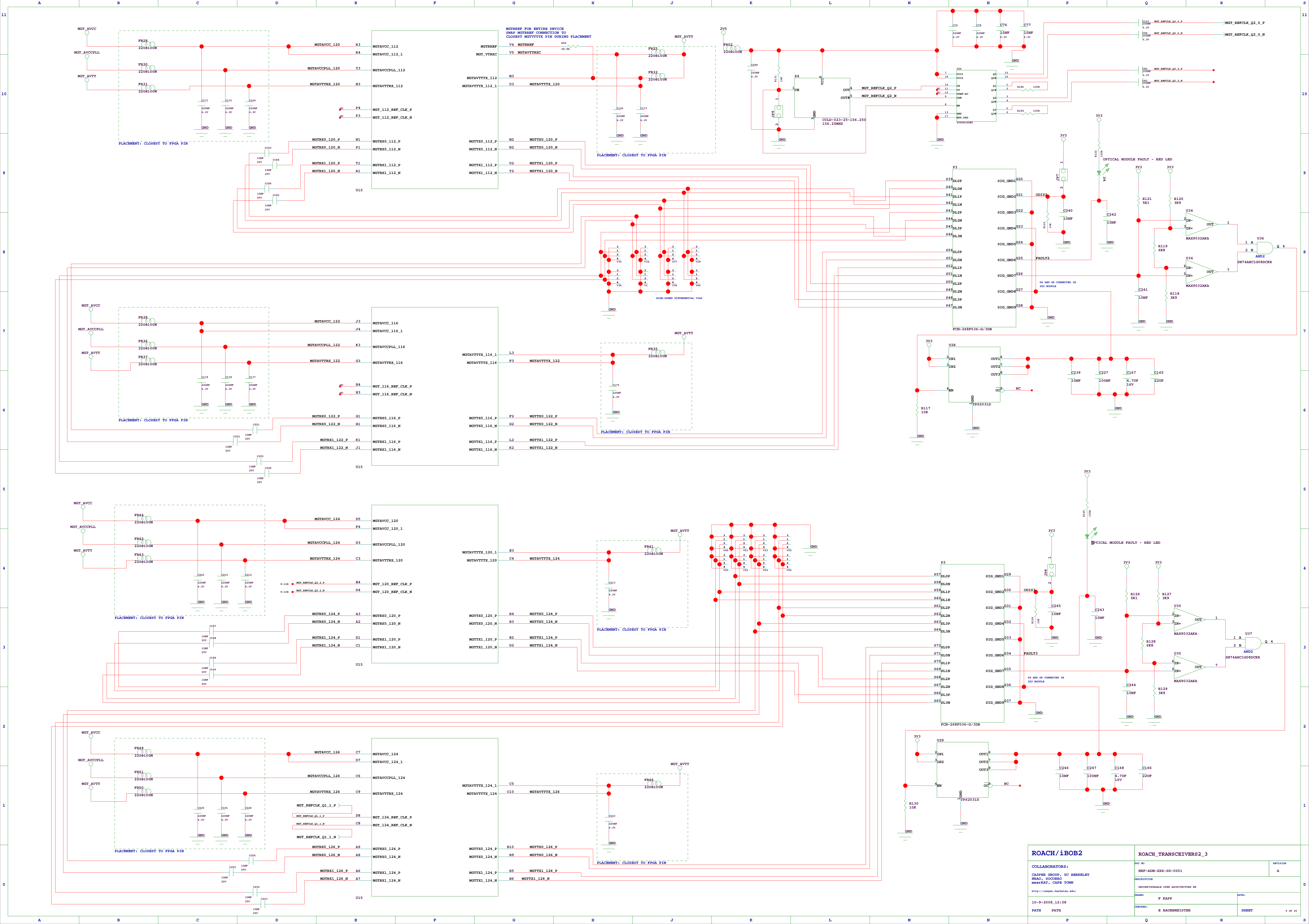


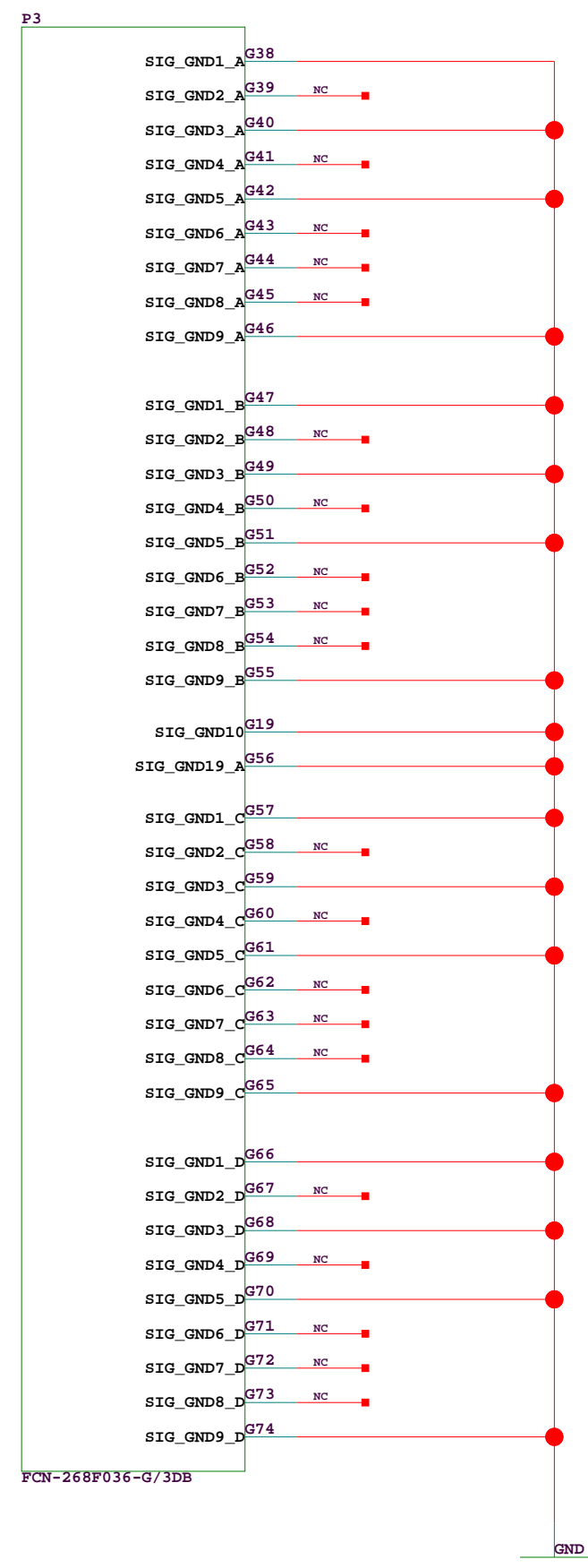
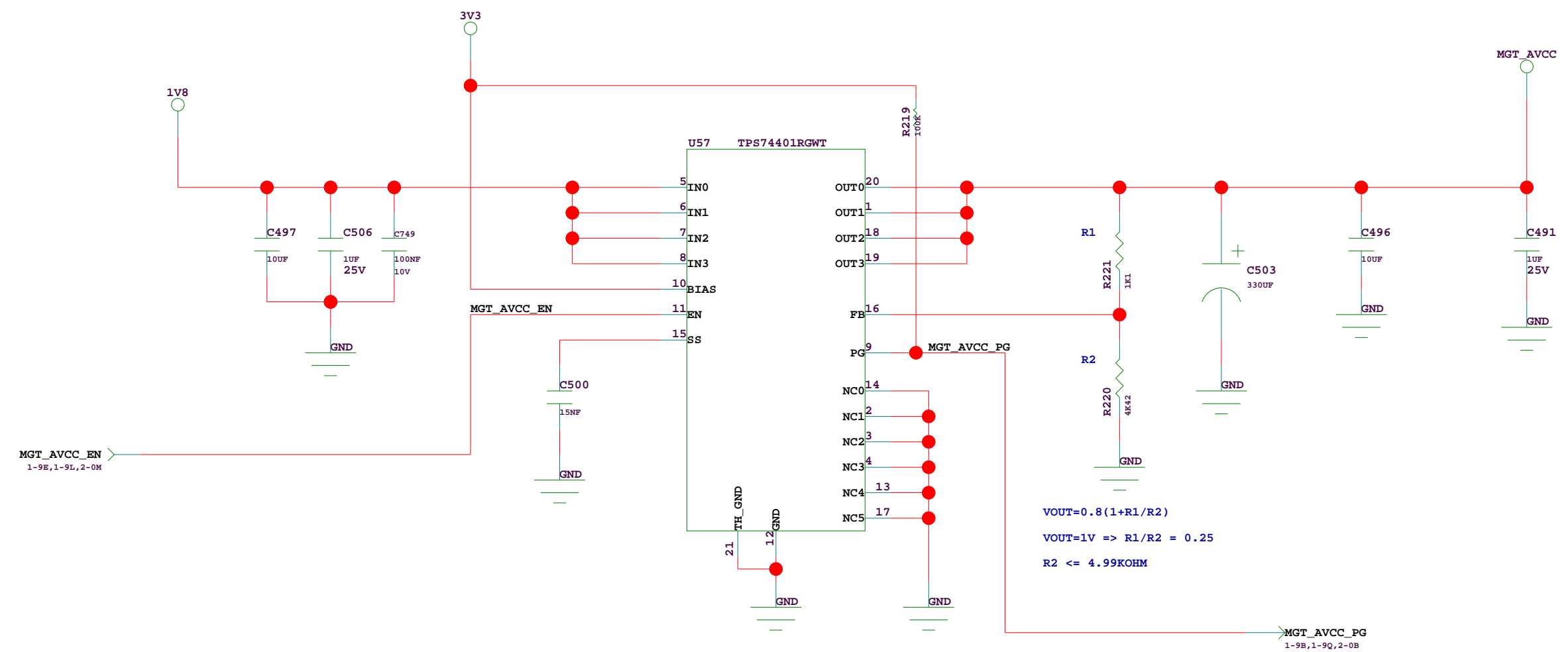
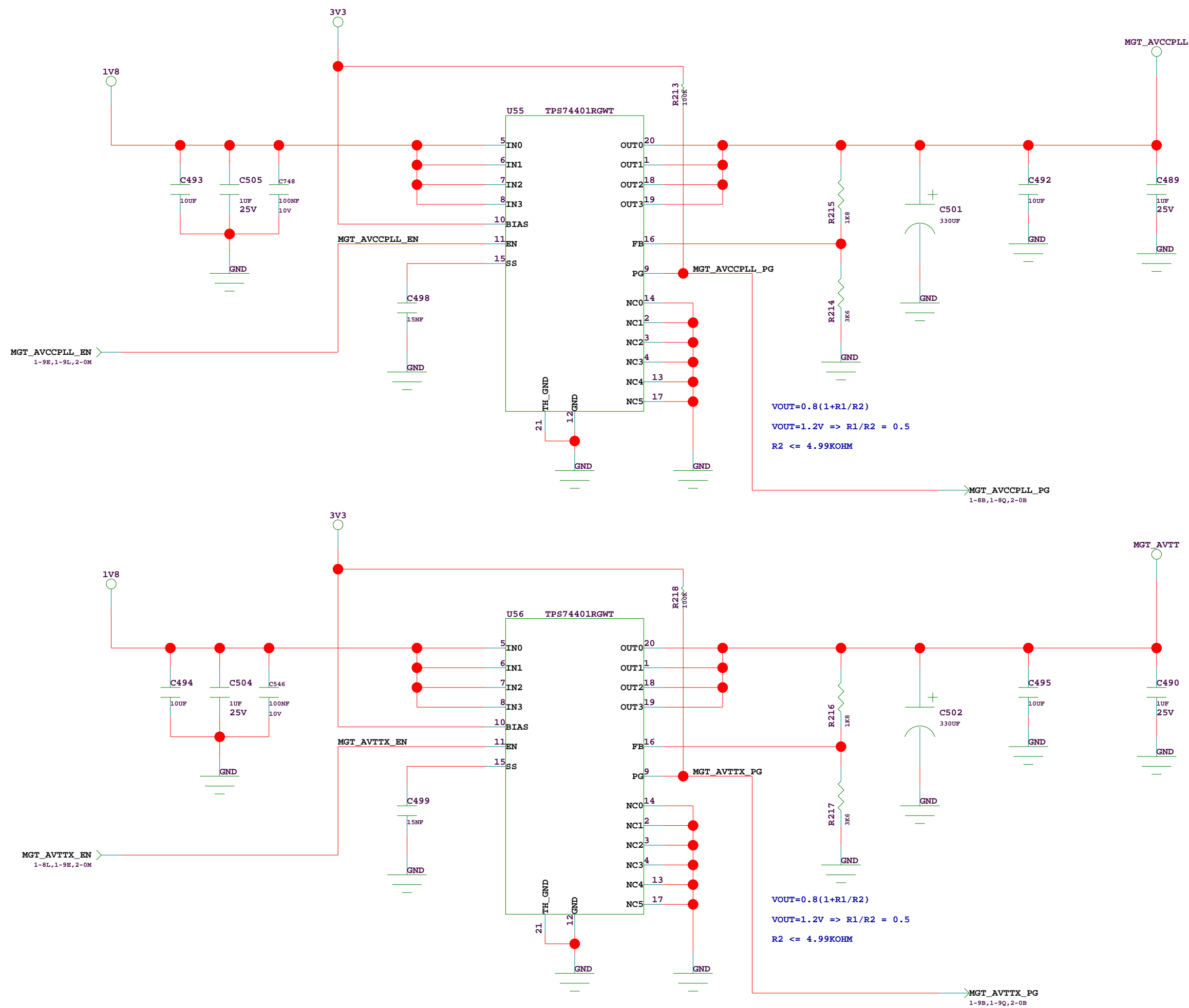




ROACH/iBOE2		ROACH_TRANSCEIVERS0_1	
COLLABORATORS: CASPER GROUP, UC BERKELEY NRAO, SOONERO BeebeFAT, CAPE TOWN <a href="http://casper.berkeley.edu/">http://casper.berkeley.edu/</a>	DOC NO NRF-ADM-XXX-BD-0001 DESCRIPTION RECONFIGURABLE OPEN ARCHITECTURE HW DRAWN: 10-9-2008_12:58 PATH	REVISION A CHECKED: R BAUERMEISTER	SHEET 8 OF 25

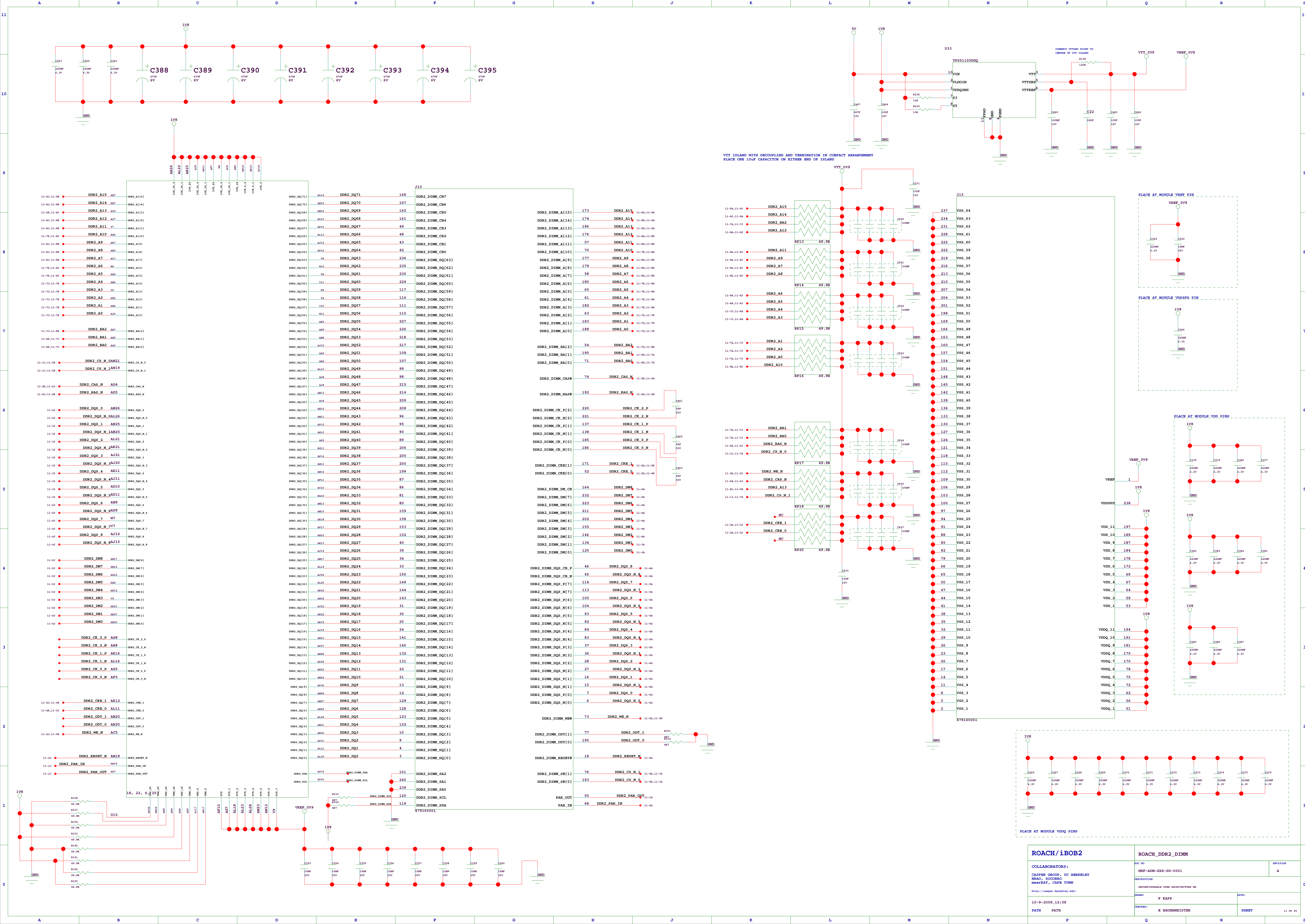




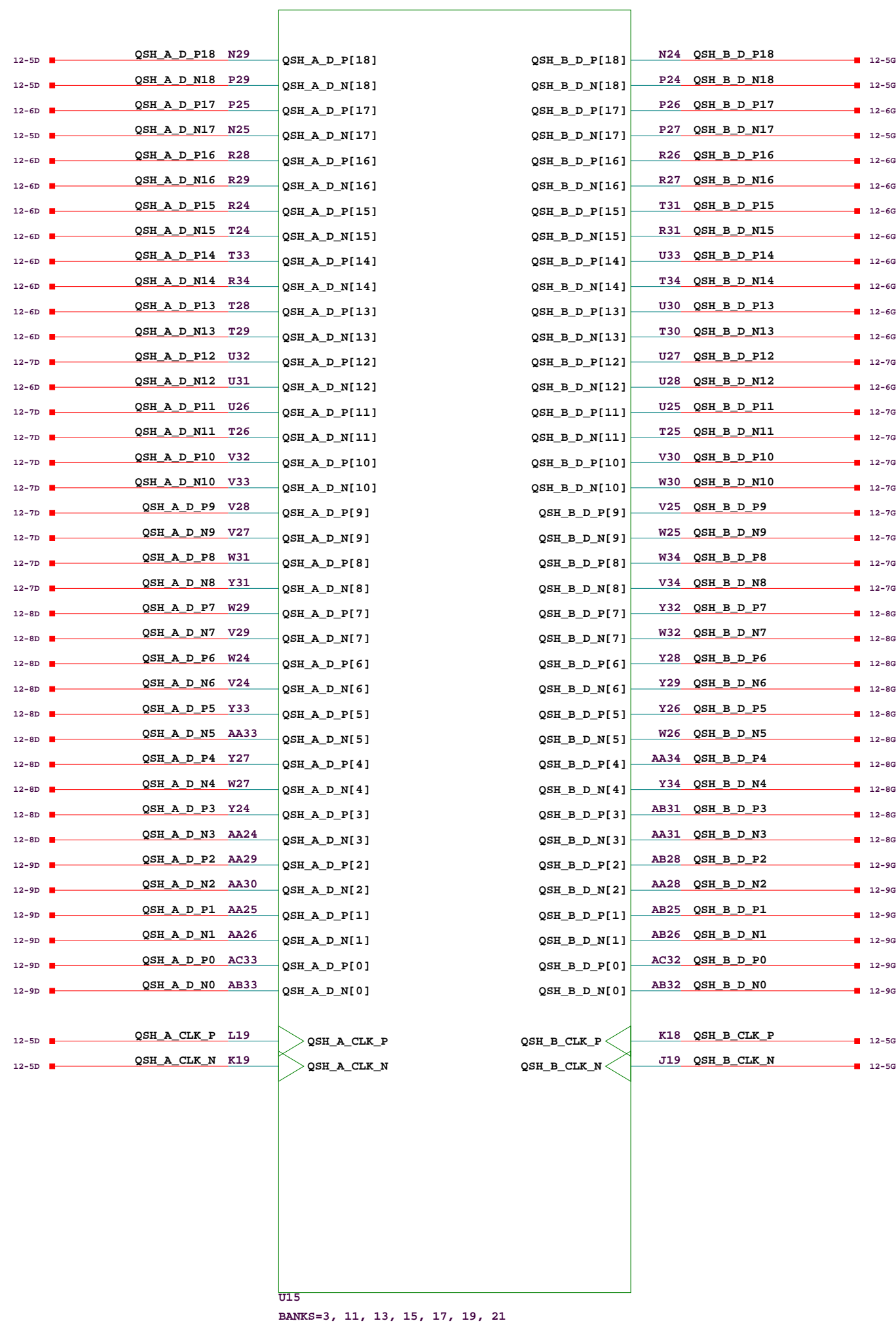
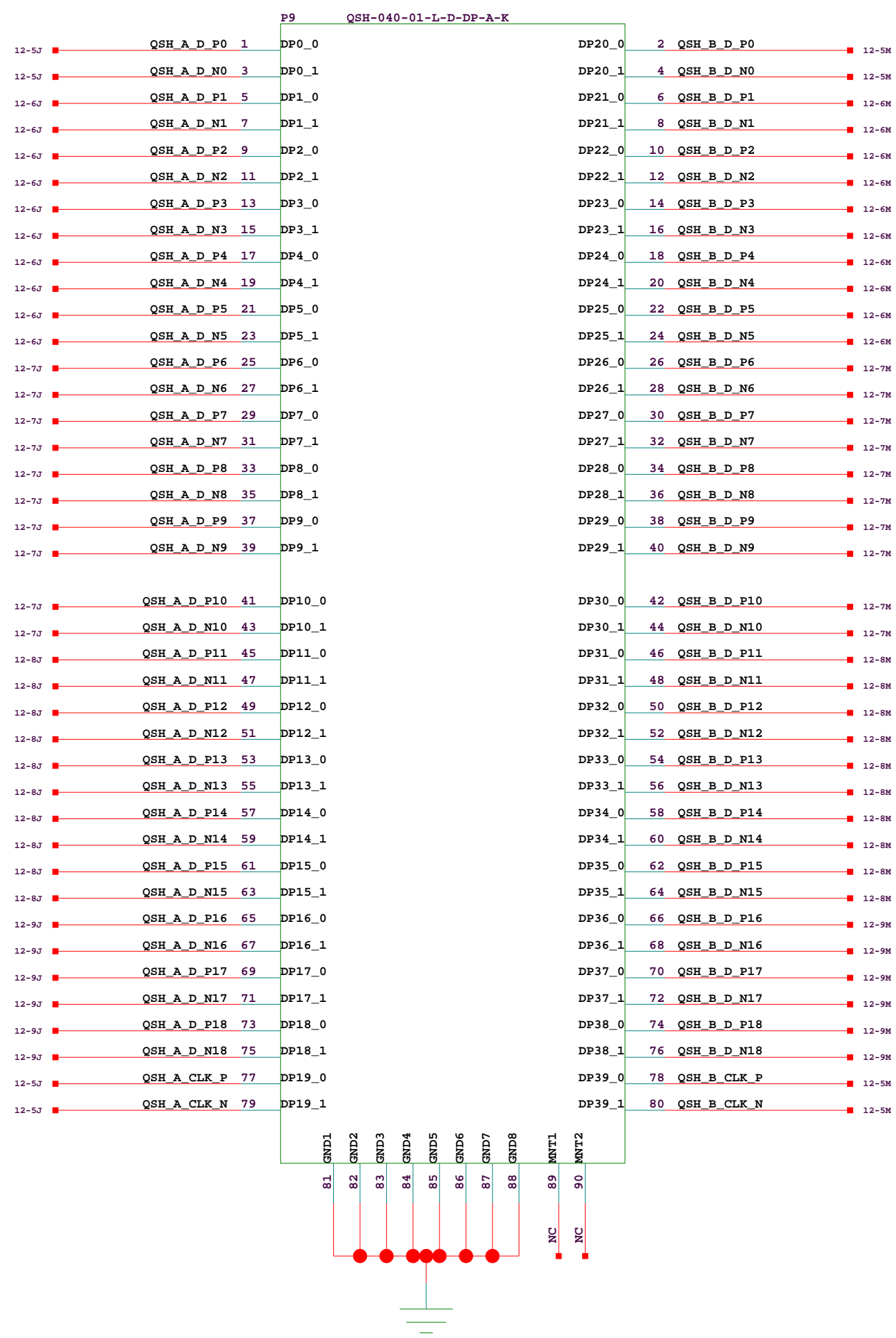


ROACH/iBOE2		ROACH_TRANSCEIVERS_PSU	
COLLABORATORS:		DOC NO:	REVISION:
CASPER GROUP, UC BERKELEY		NRF-ADM-XXX-SD-0001	A
MESA, SOCORRO		DESCRIPTION:	
MesaEAT, CAPE TOWN		RECONFIGURABLE OPEN ARCHITECTURE HW	
http://casper.berkeley.edu/		DRAWN:	APPD:
10-9-2008 12:58		F KAPP	
PATH	PATH	CHECKED:	SHEET
		E BAUERMEISTER	10 OF 2

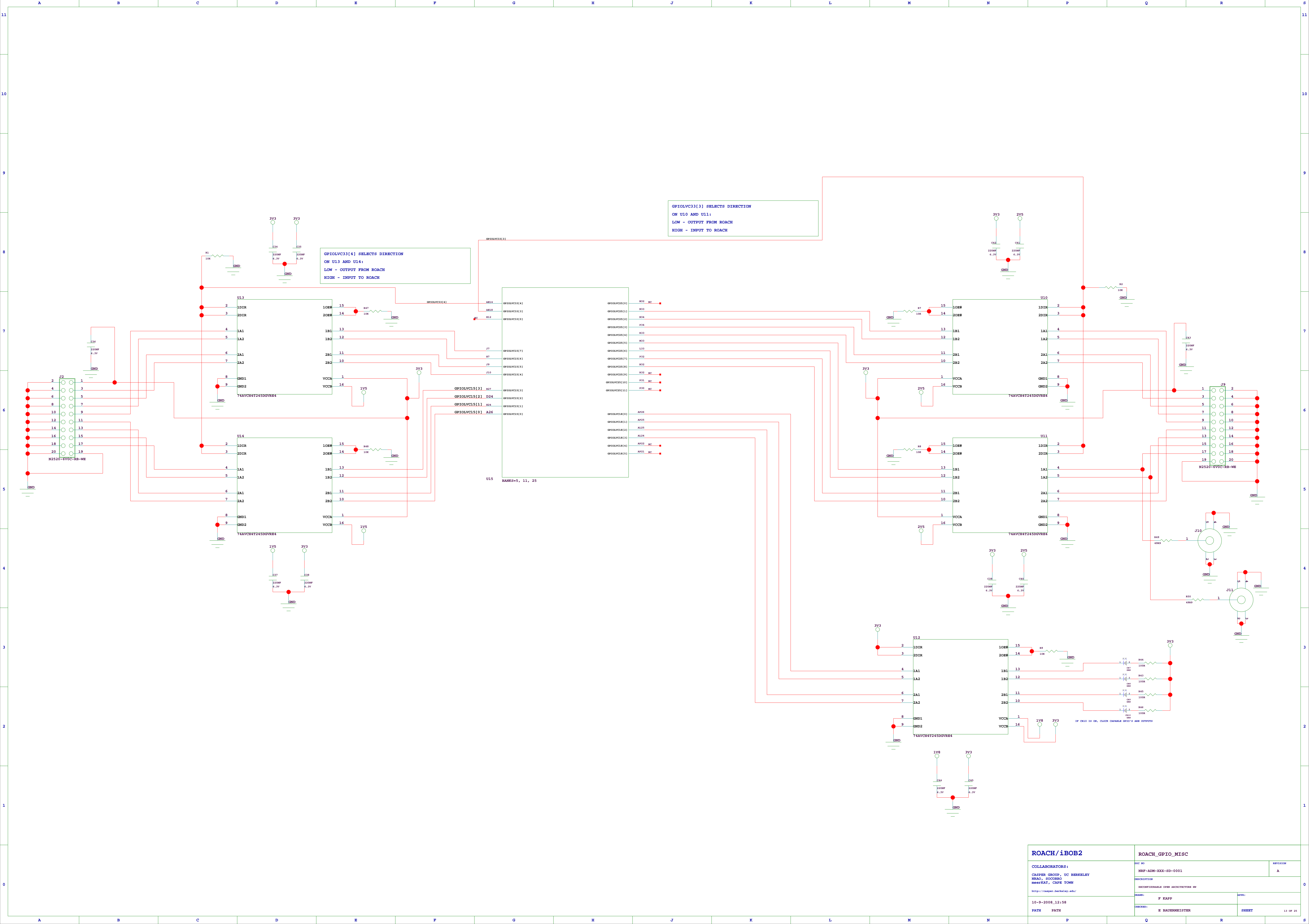




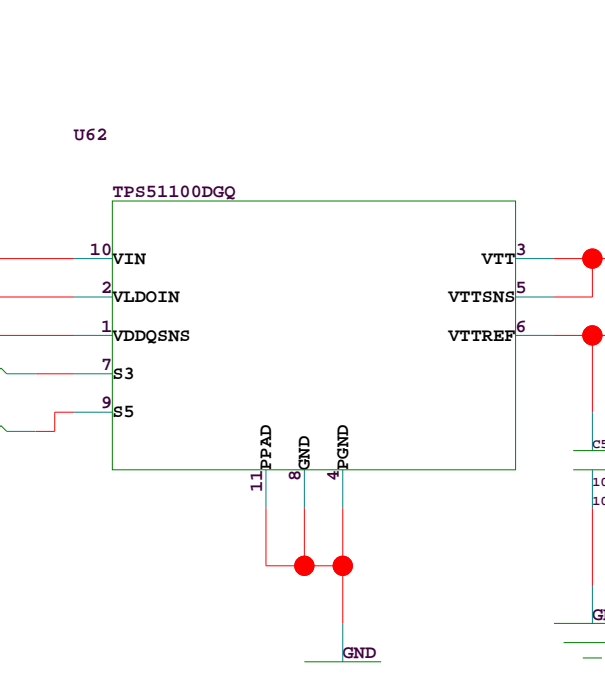
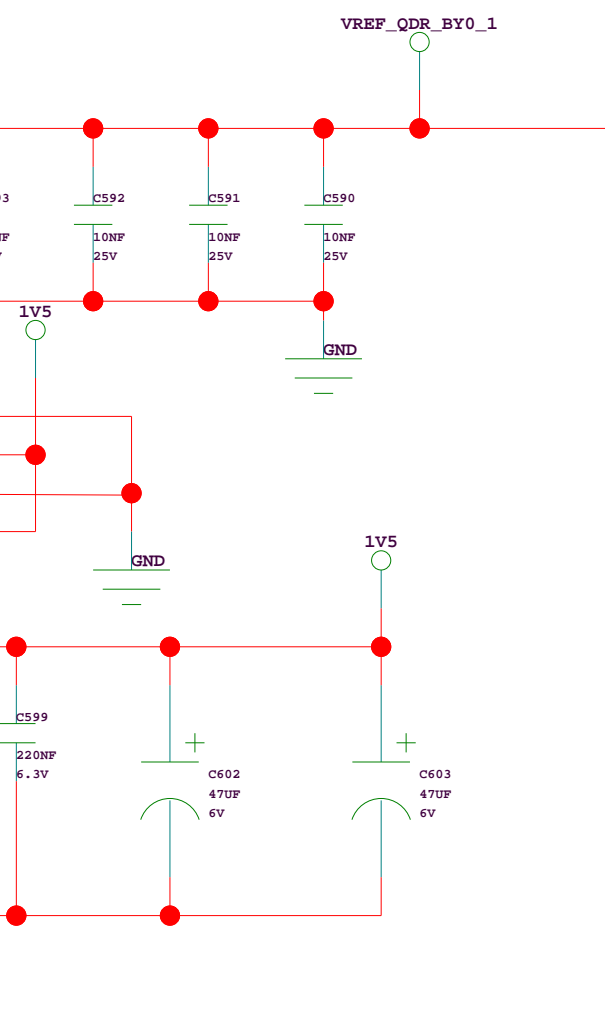
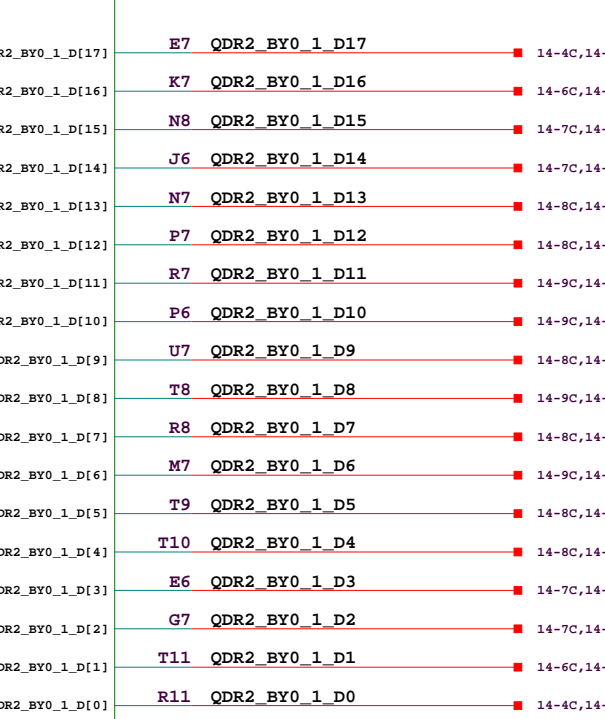
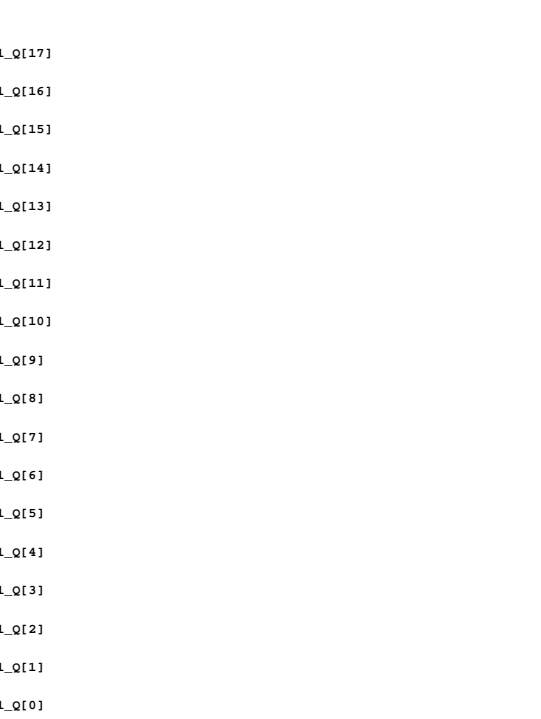
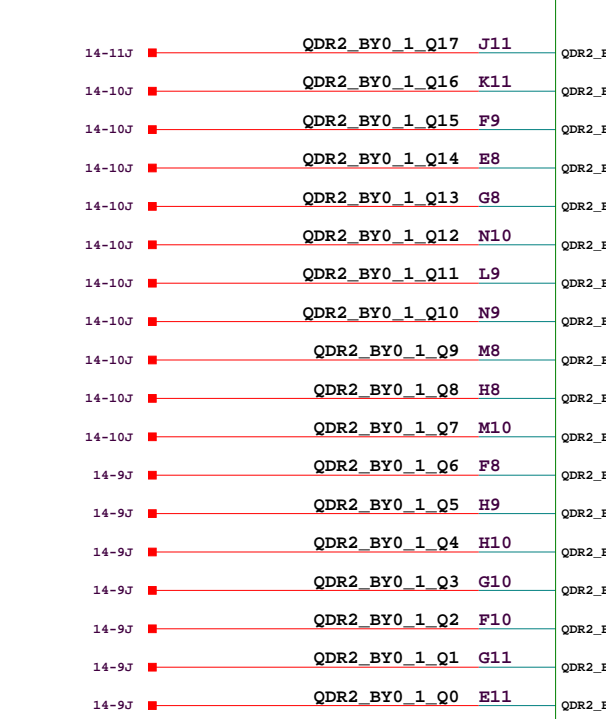
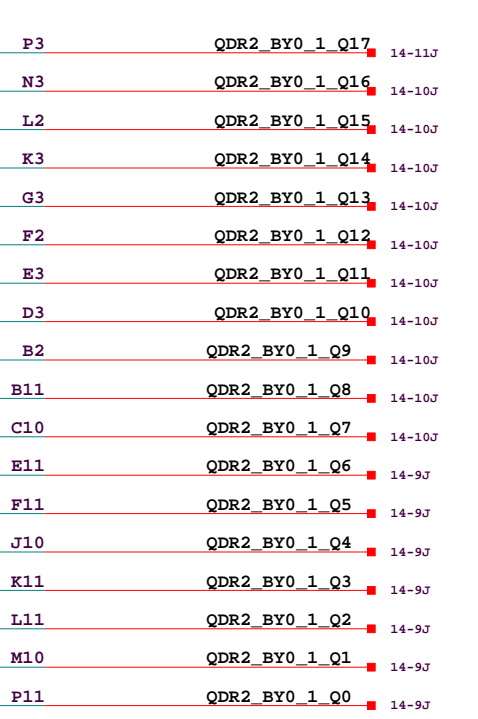
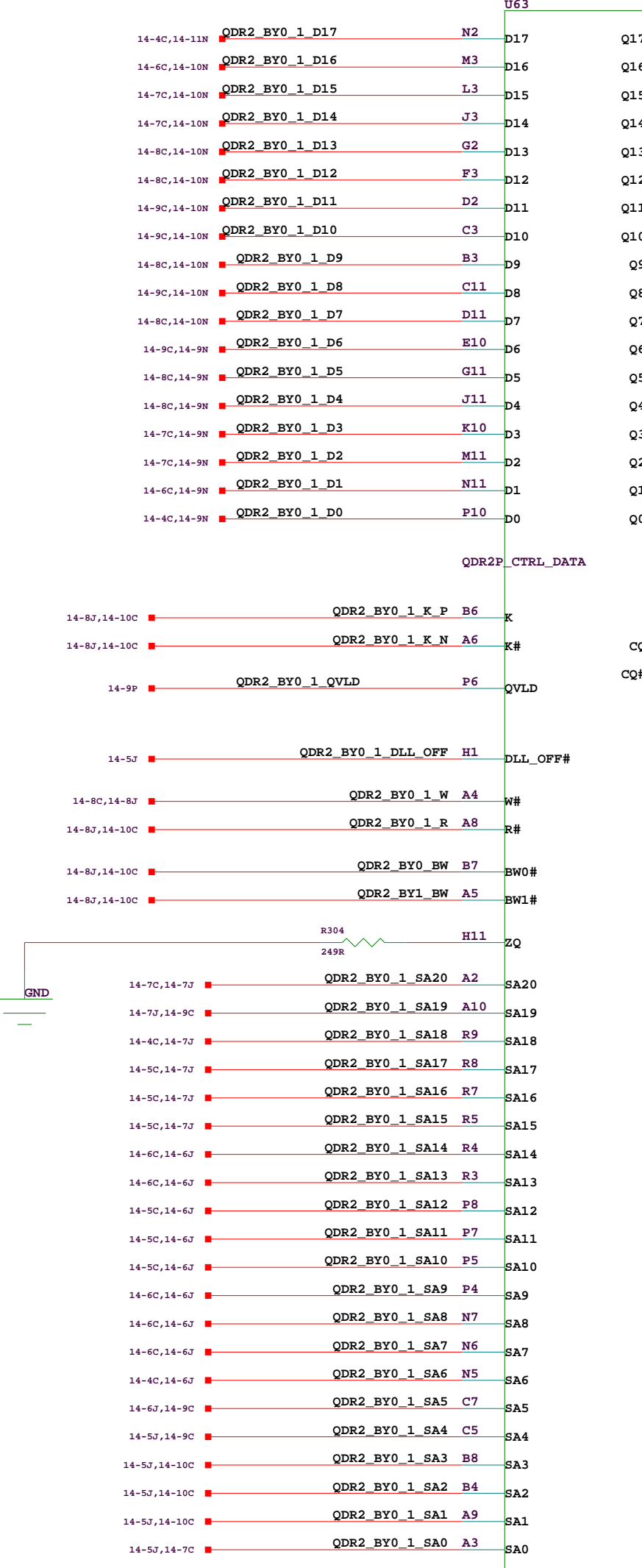
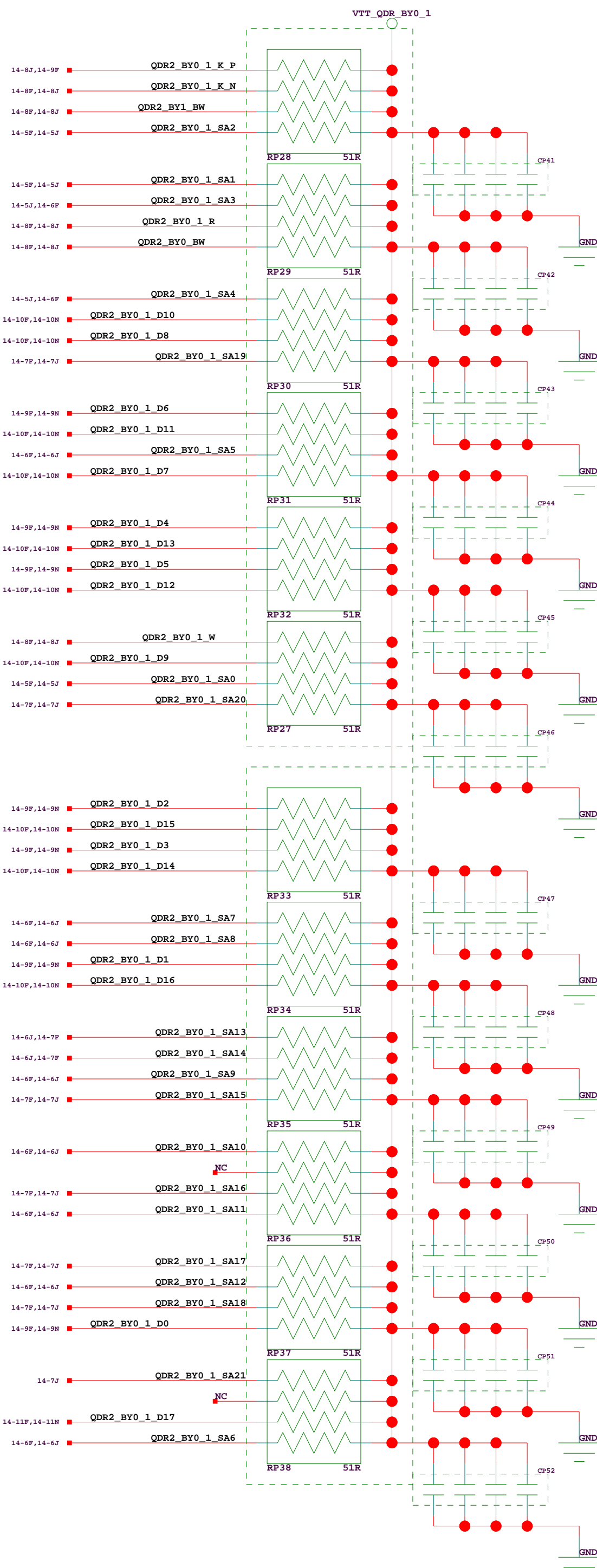




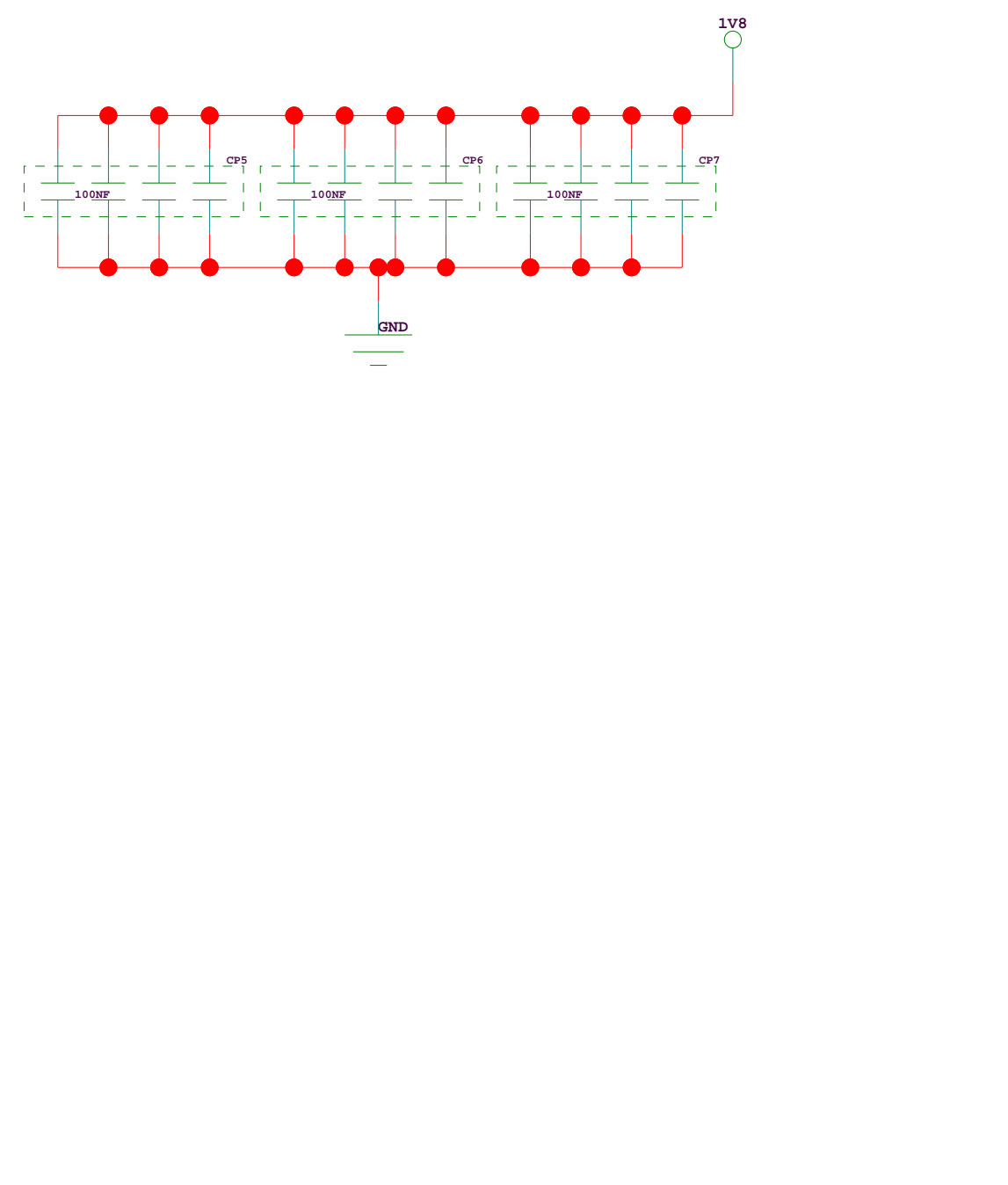
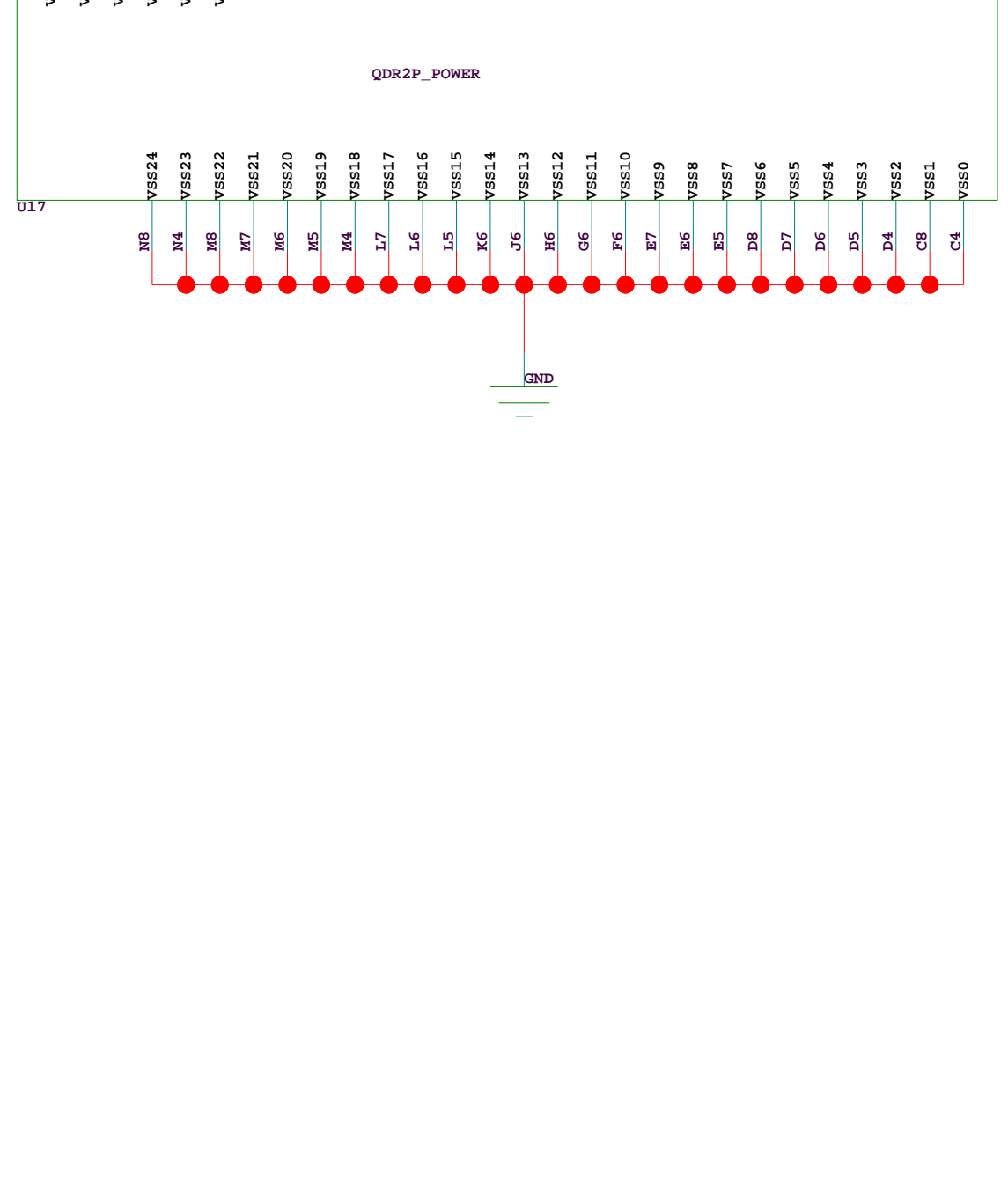
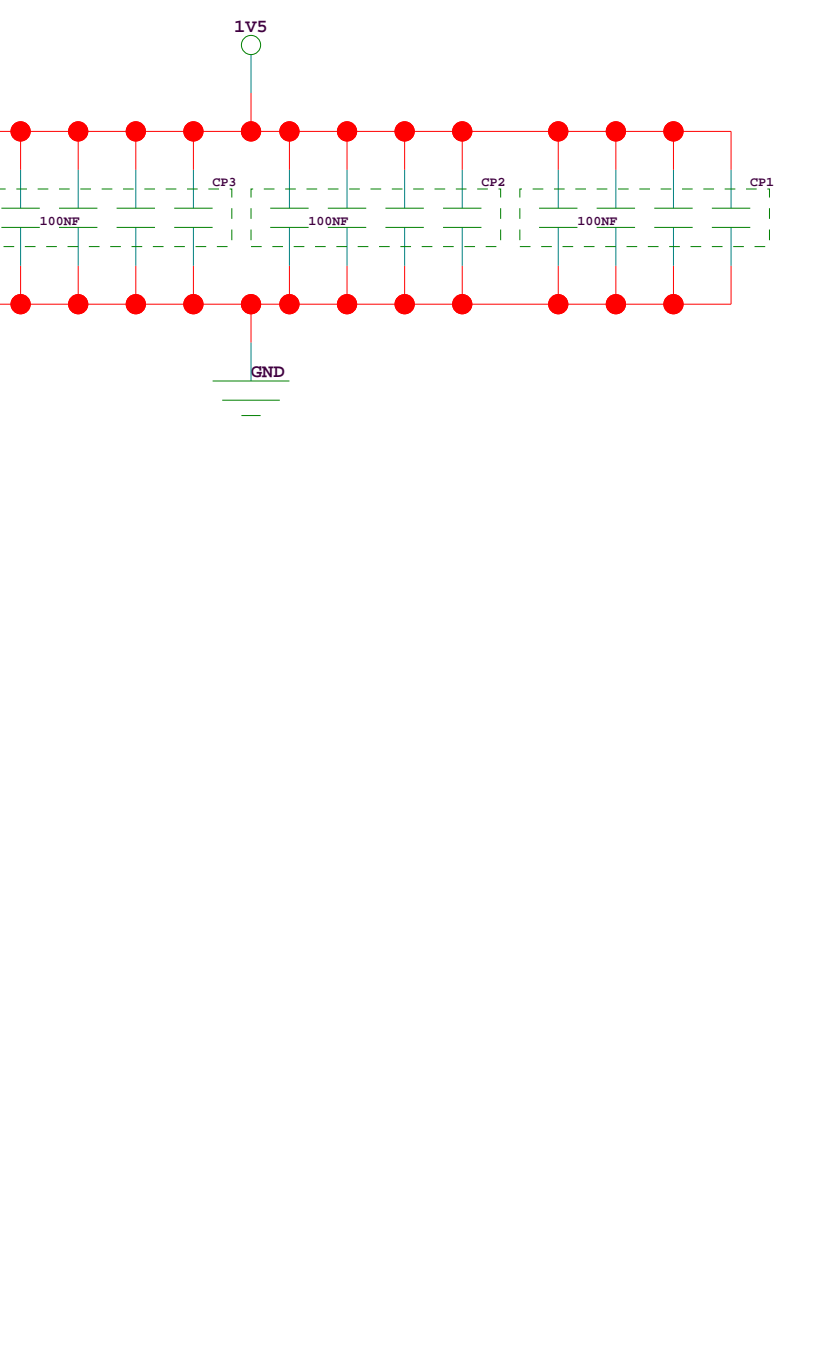
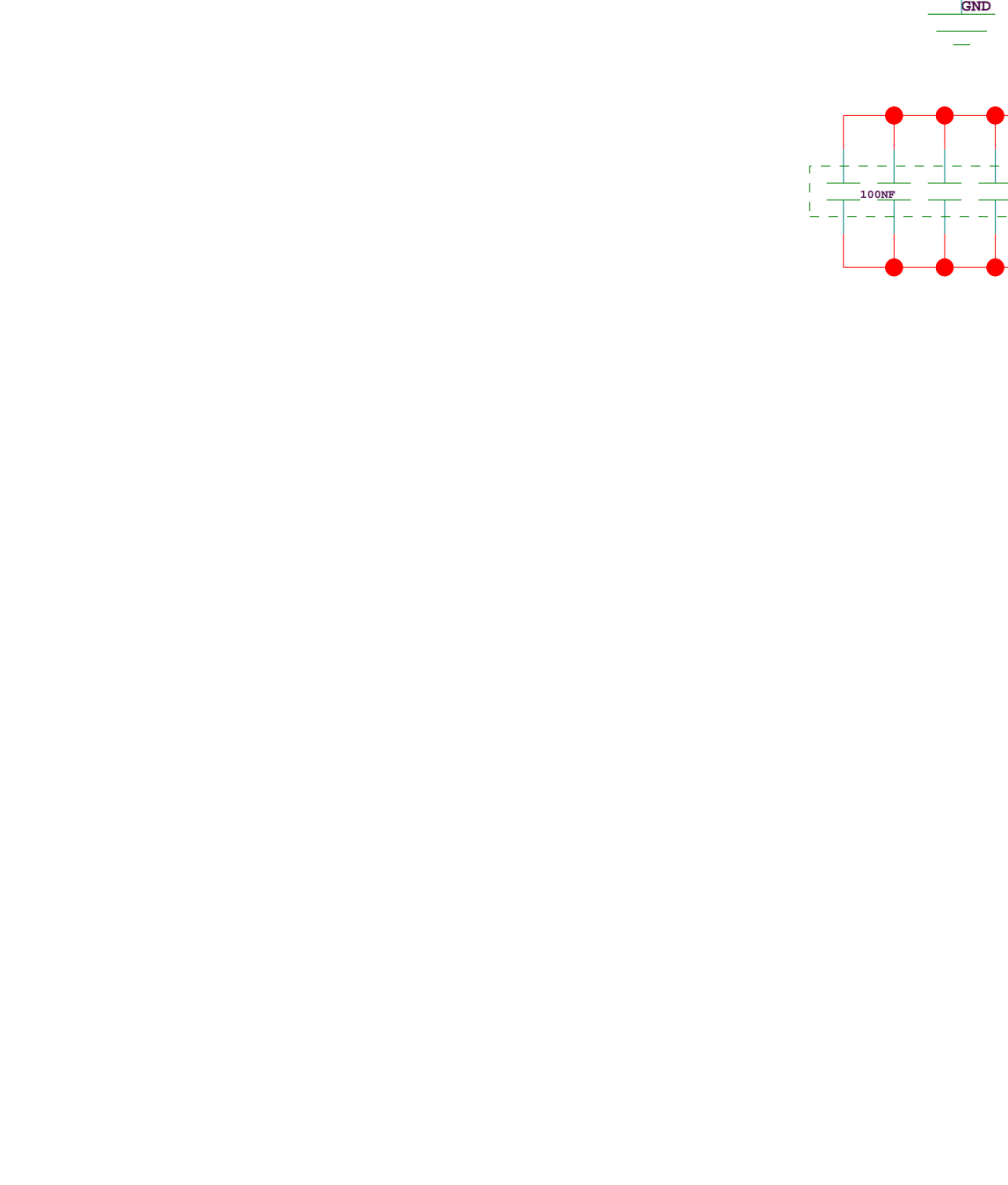
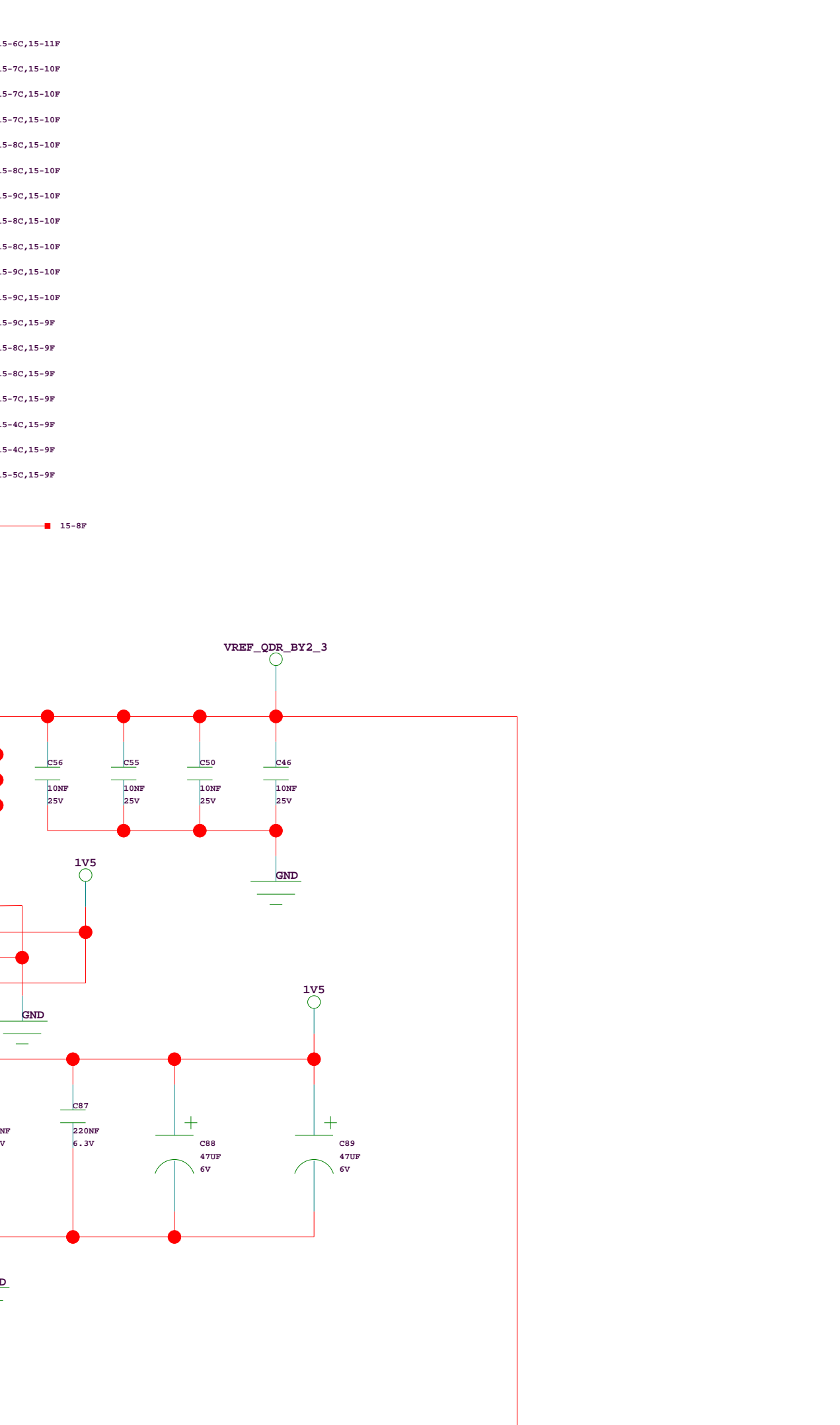
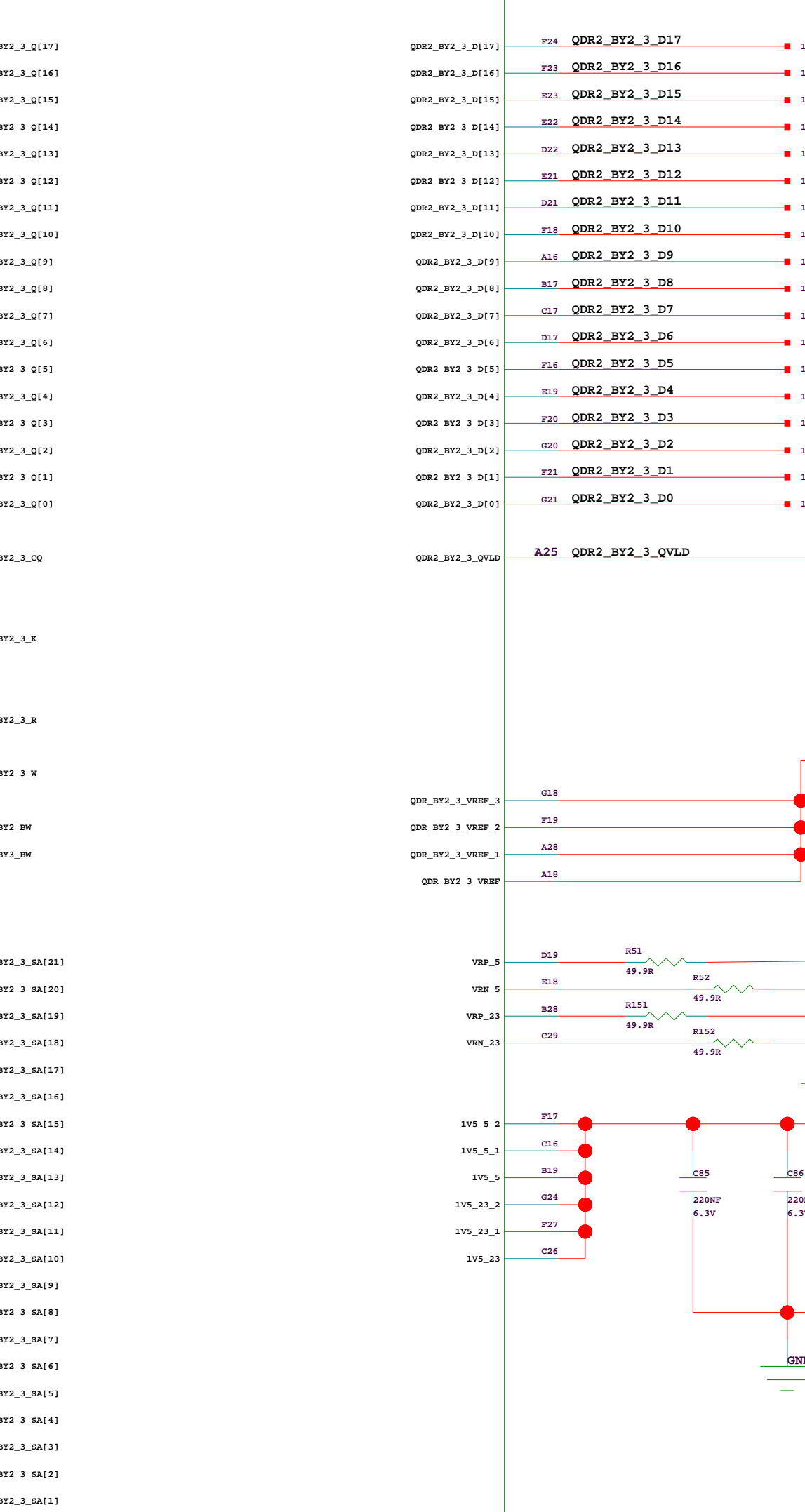
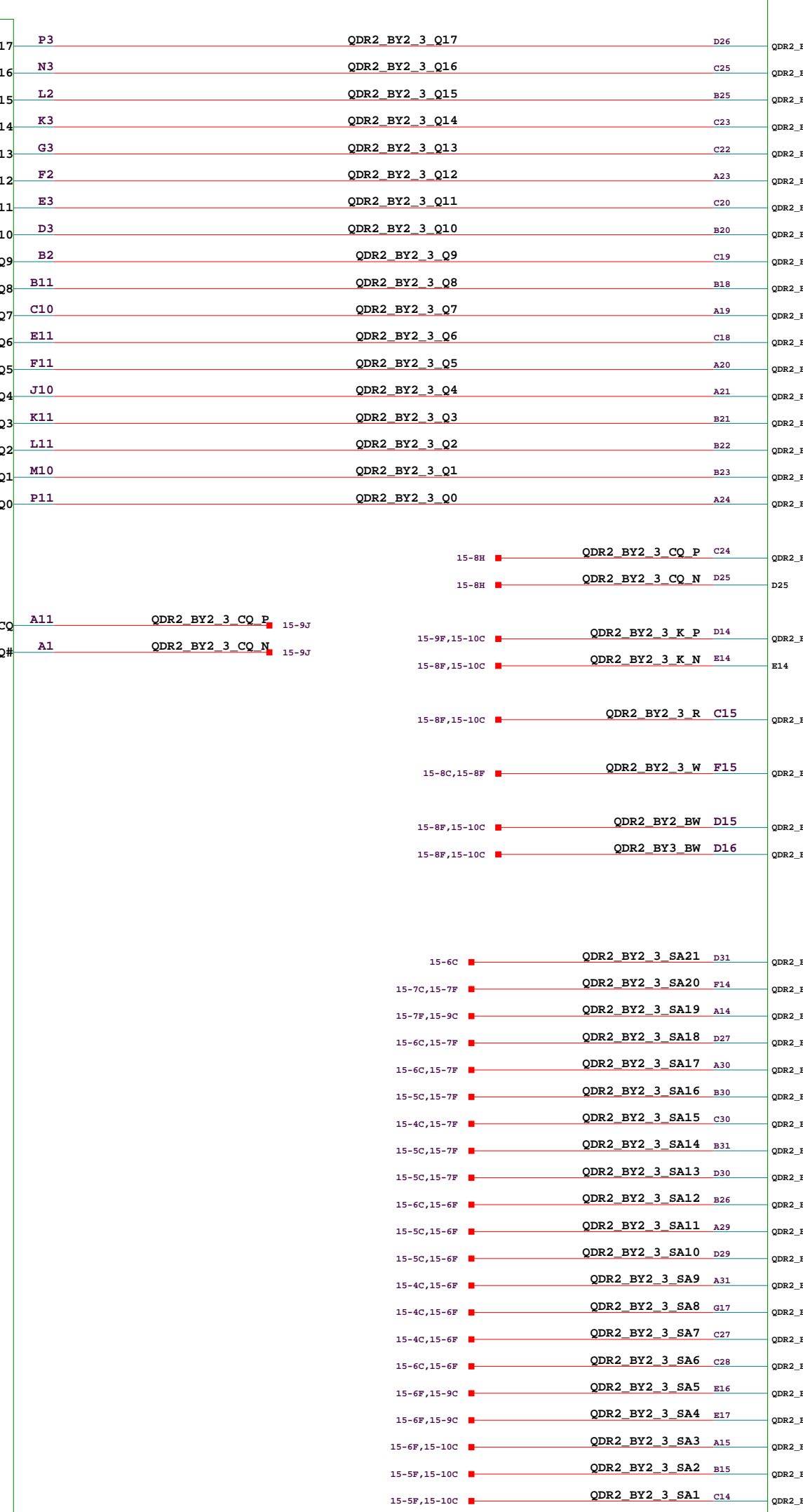
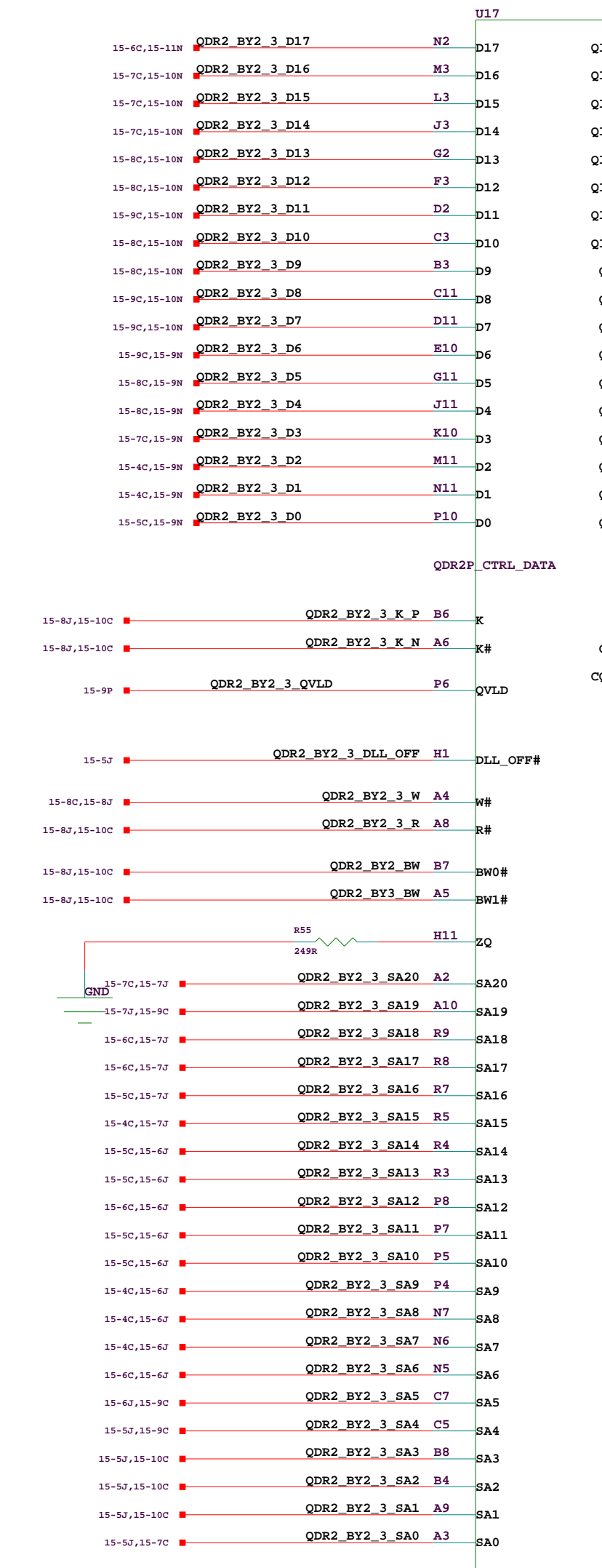
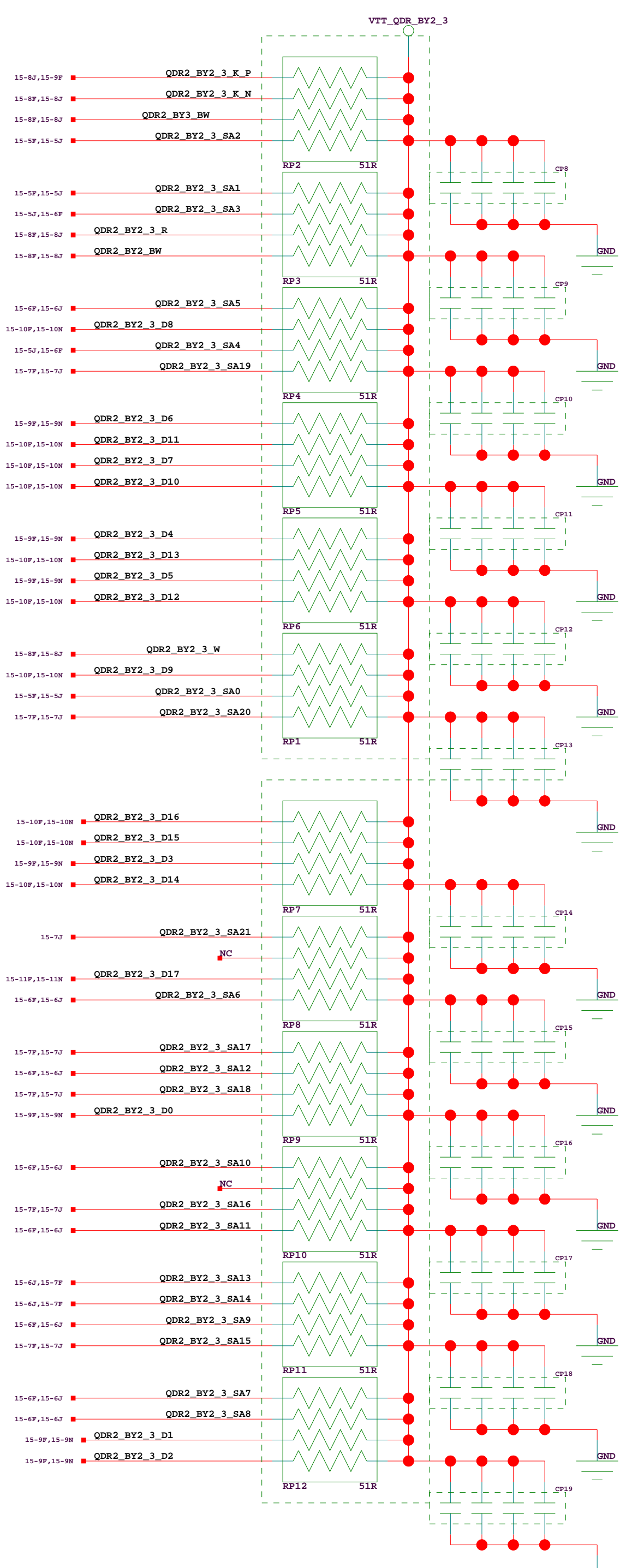
<b>ROACH/iBOB2</b>		<b>ROACH_DIFF_GPIO</b>	
<b>COLLABORATORS:</b> CASPER GROUP, UC BERKELEY NIKO, ROCOMBO MAREKAT, CAPE TOWN  <a href="http://casper.berkeley.edu/">http://casper.berkeley.edu/</a>		SOC NO NRP-ADM-XXX-ED-0001  DESCRIPTION RECONFIGURABLE OPEN ARCHITECTURE SW	REVISION A
10-9-2008 12:58		DESIGNS: F KAPP	APPR:
PATH	PATH	CHECKED: K BAUMENISTER	SHEET 12 OF 2



ROACH/iBOE2		ROACH_GPIO_MISC	
COLLABORATORS:		DOC NO	REVISION
CASPER GROUP, UC BERKELEY		NRF-ADM-XXX-BD-0001	A
DESCRIPTION		REVISION	
NRAO, SOCCORRO		RECONFIGURABLE OPEN ARCHITECTURE HW	
MONTENAP, CAPE TOWN		REVISION	
http://casper.berkeley.edu/		REVISION	
10-9-2008 12:58		F KAPP	
PATH		R BAUERMISTROT	
PATH		SHEET	
F		Q	
P		R	
13 OF 25			



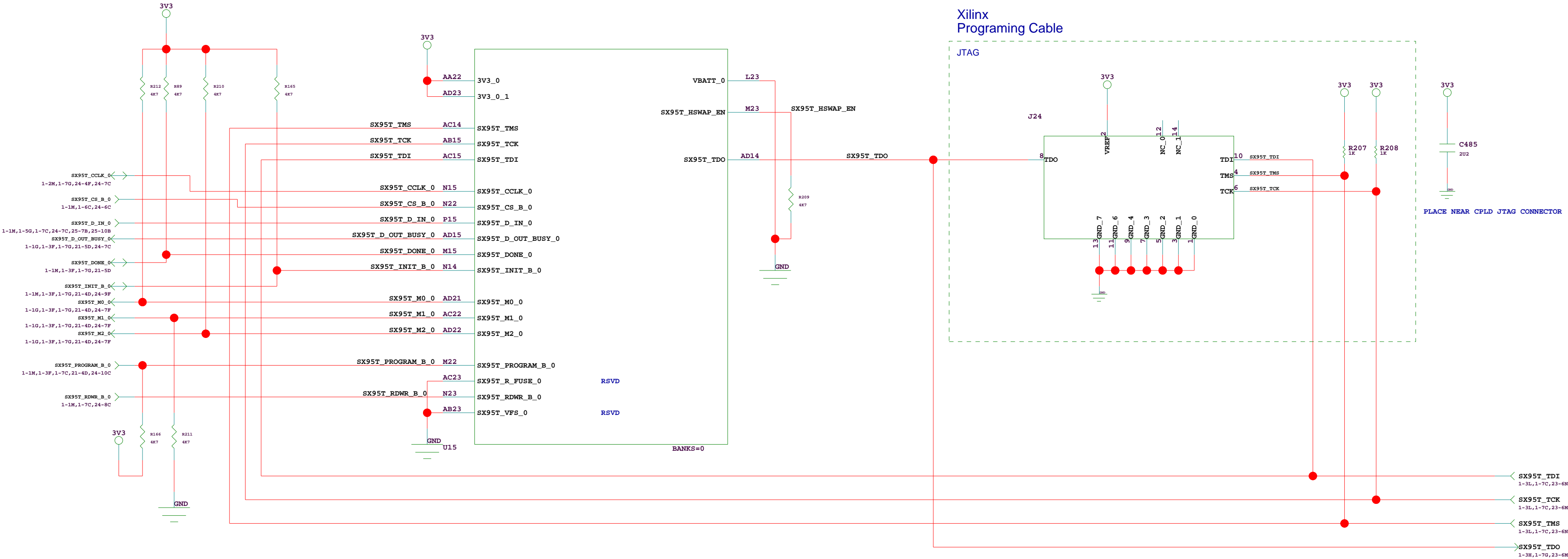
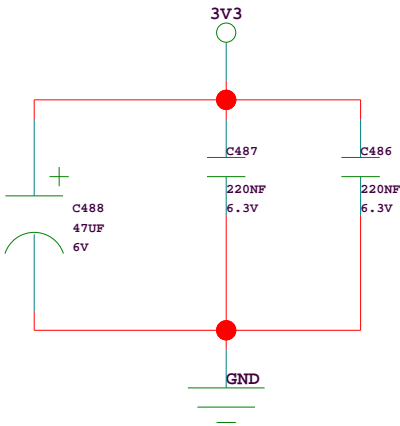




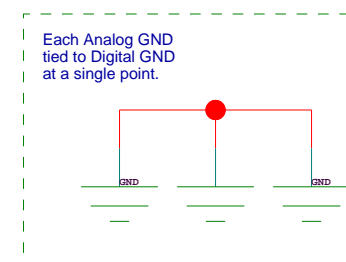
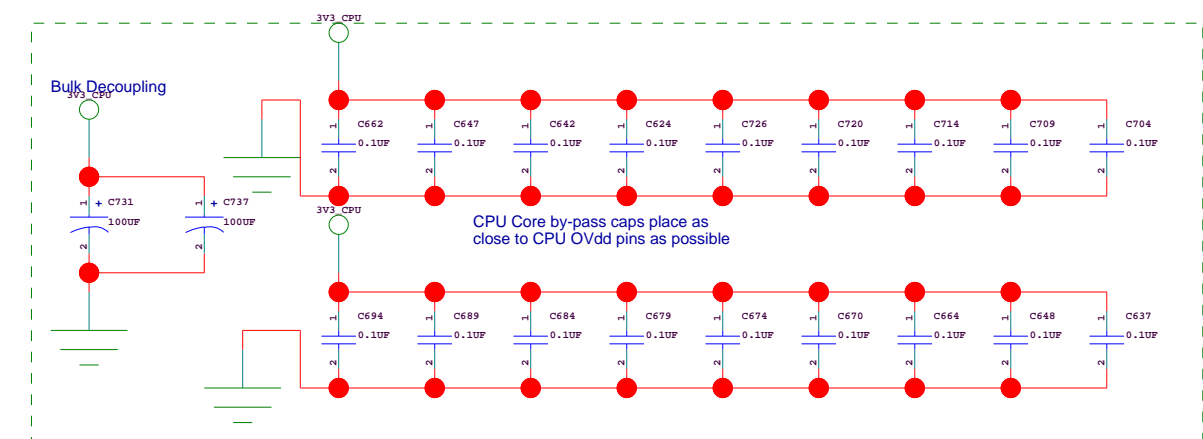
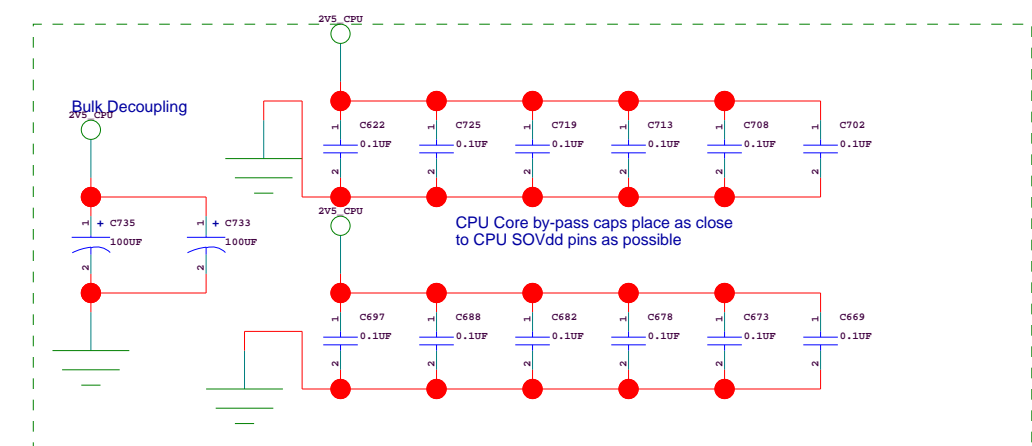
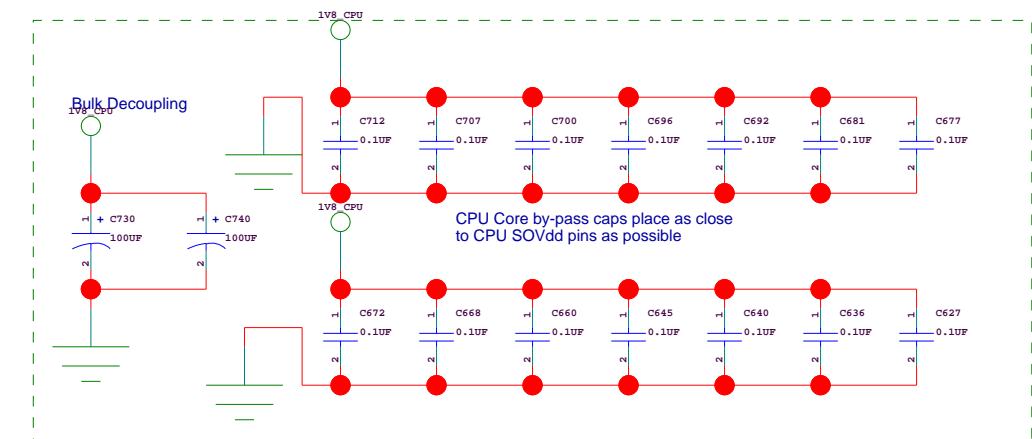
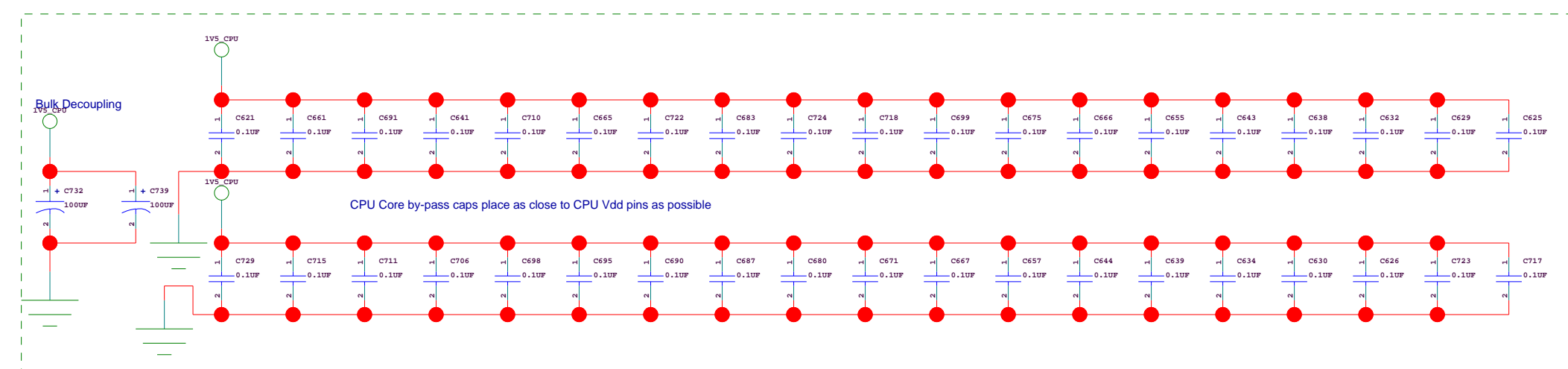
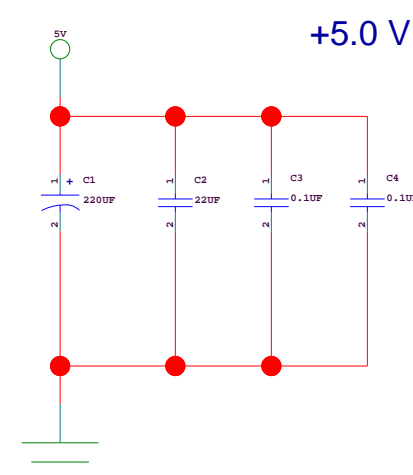
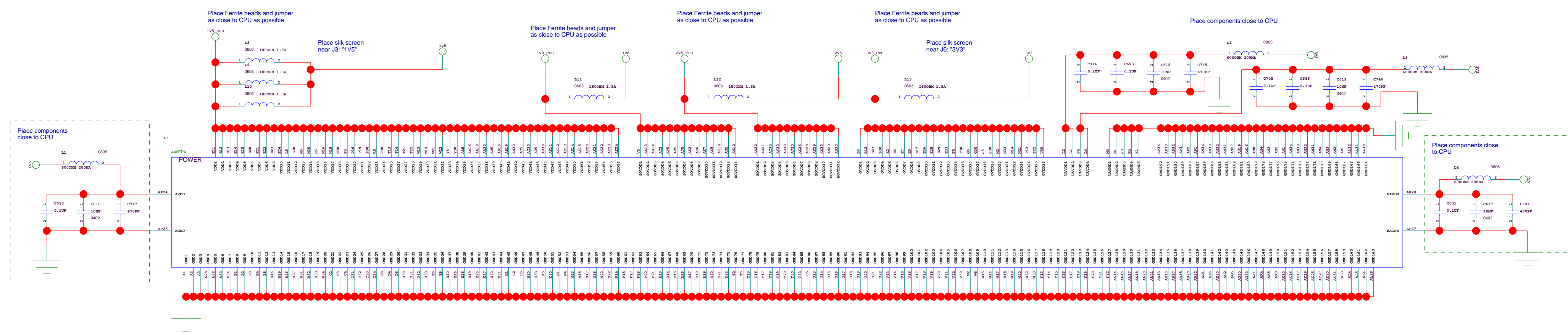
ROACH/iBOB2		ROACH_QDR2P_BY2_3	
COLLABORATORS:		DOC NO	REVISION
CASPER GROUP, UC BERKELEY		NRF-ADM-XXX-SD-0001	A
NRAO, SOONERO		DESCRIPTION	
MesaCAT, CAPE TOWN		RECONFIGURABLE OPEN ARCHITECTURE HW	
http://casper.berkeley.edu/		DATE:	APP:
10-9-2008,12:58		F KAPP	
PATH	PATH	R BAUERNBIESTER	SHEET

TBD

VALID CONFIGURATION MODES			
Configuration Mode	M[2:0]	Bus Width	CCLK Direction
Master Serial	000	1	Output
Master SPI	001	1	Output
Master BPI-Up	010	8, 16	Output
Master BPI-Down	011	8, 16	Output
Master SelectMAP	100	8, 16	Output
JTAG	101	1	Input (TCK)
Slave SelectMAP	110	8, 16, 32	Input
Slave Serial	111	1	Input



ROACH/iBOB2		ROACH_CONFIG	
COLLABORATORS: CASPER GROUP, UC BERKELEY NRAO, SOCORRO meerKAT, CAPE TOWN  <a href="http://casper.berkeley.edu/">http://casper.berkeley.edu/</a>	DOC NO NRF-ADM-XXX-SD-0001		REVISION A
	DESCRIPTION RECONFIGURABLE OPEN ARCHITECTURE HW		
	DRAWN: F KAPP		APPR:
	CHECKED: E BAUERMEISTER		SHEET 16 OF 25
10-9-2008_12:58 PATH PATH			



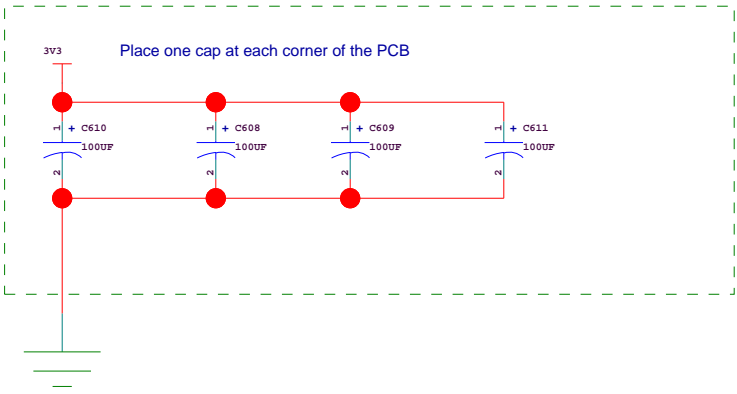
REMOVED 1.8V AND 1.5V REGULATORS, CONNECTED TO V5 RAILS

REMOVED VTT AND VREF - INCLUDED ON ROACH\_PPC\_DDR2

<b>ROACH/iBOB2</b>		<b>ROACH_PPC_POWER_1</b>	
<b>COLLABORATORS:</b>		<b>DOC NO:</b>	<b>REVISION:</b>
CAPPER GROUP, UC BERKELEY NRAO, SOCORRO MESAERIT, CAPK TOWN		NRP-ADM-XXX-SD-0001	A
<b>DESCRIPTION:</b>		<b>DESCRIPTION:</b>	
http://caper.berkeley.edu/		RECONFIGURABLE OPEN ARCHITECTURE HW	
<b>NAME:</b>		<b>F KAPP</b>	<b>APPR:</b>
10-9-2008_12:58		<b>CHECKED:</b>	<b>17 OF 25</b>
<b>PATH</b>	<b>PATH</b>	<b>E BAUERMEISTER</b>	<b>SHEET</b>



	A	B	C	D	E	F	G	H	J	K	L	M
7												
6			REMOVED 3V3 GENERATION									
5												
4		REMOVED +12V GENERATION			REMOVED -12V GENERATION							
3												
2												
1		REMOVED +1V GENERATION			REMOVED +2V5 GENERATION							
0												
	A	B	C	D	E	F	G	H	J	K	L	M

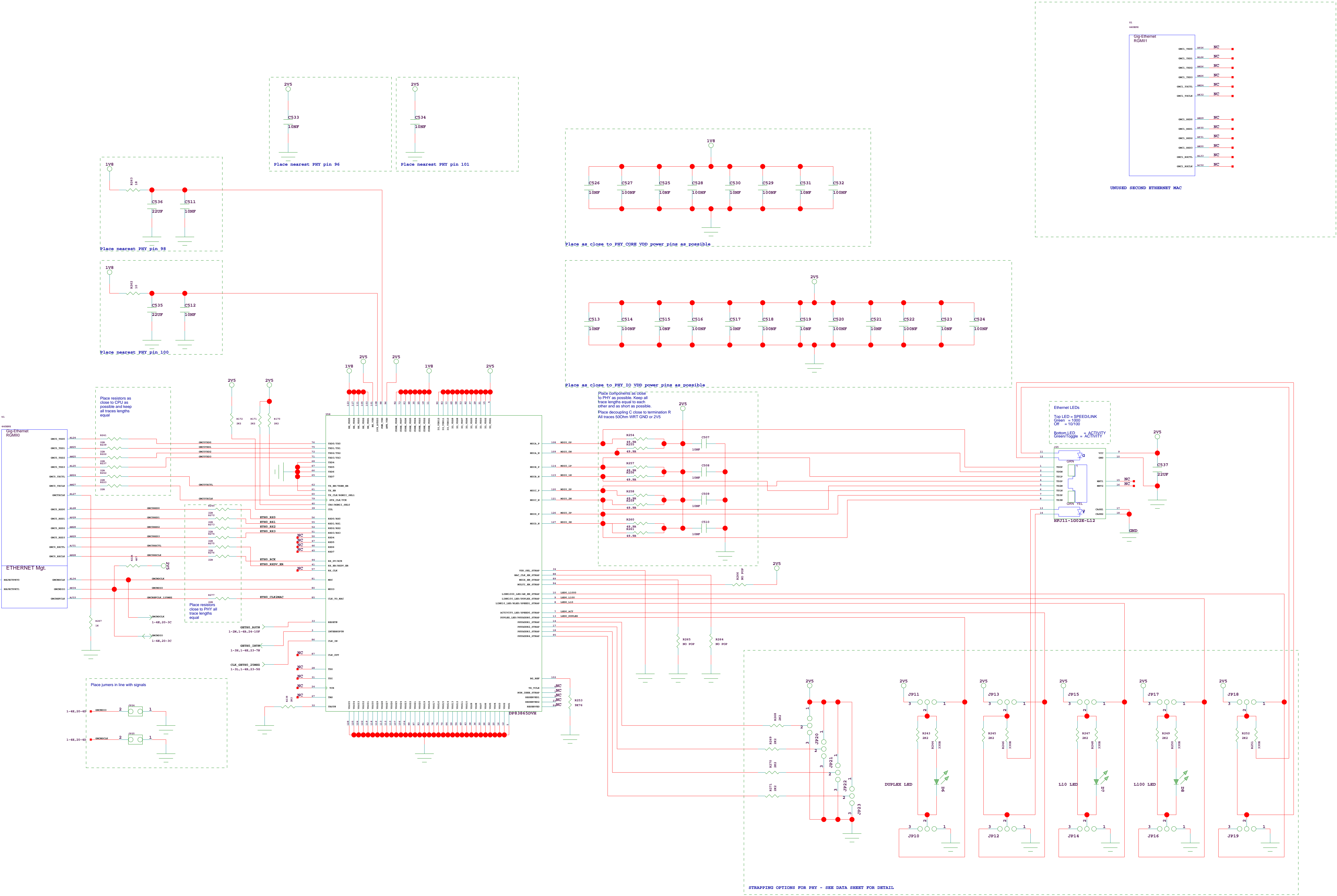


ROACH/iBOB2	ROACH_PPC_POWER_2	
COLLABORATORS: CASPER GROUP, UC BERKELEY NRAO, SOCORRO meerKAT, CAPE TOWN  <a href="http://casper.berkeley.edu/">http://casper.berkeley.edu/</a>	DOC NO NRF-ADM-XXX-SD-0001	REVISION A
	DESCRIPTION RECONFIGURABLE OPEN ARCHITECTURE HW	
	DRAWN: F KAPP	APPR:
10-9-2008_12:58	CHECKED: E BAUERMEISTER	SHEET 18 OF 25
PATH	PATH	



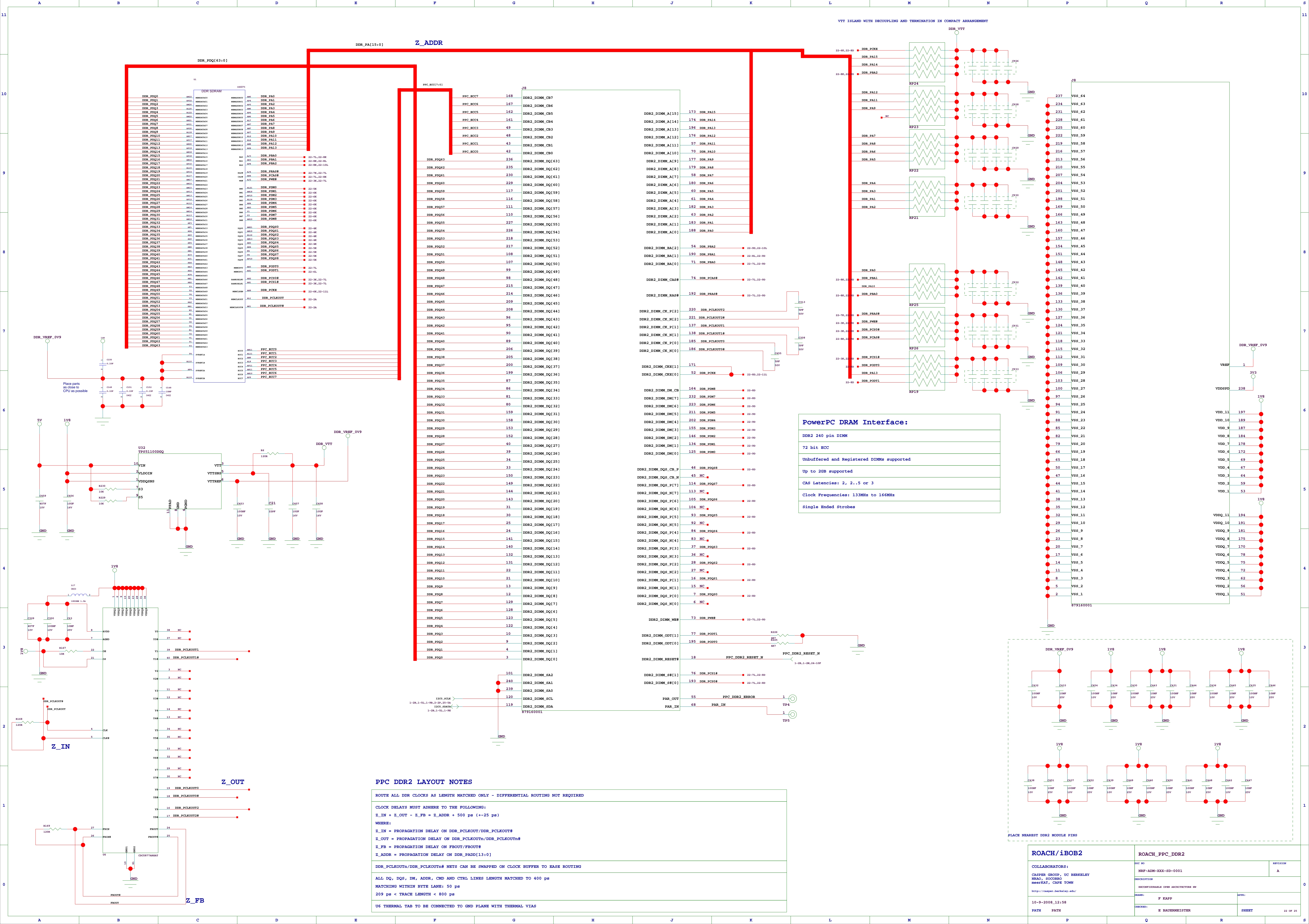
The RGMII signaling is 125 MHz using both rising and falling edges of the clock.  
The Tx and the Rx side trace length should be matched within the signal group to minimize timing skew.  
It is advised to match the trace length within 0.1 inch within the Tx and Rx signal groups.  
Minimize the number of vias on the RGMII lines to minimize timing skew.  
Since the signal rise and fall time are sub-nano second, transmission line design guidelines should be followed.

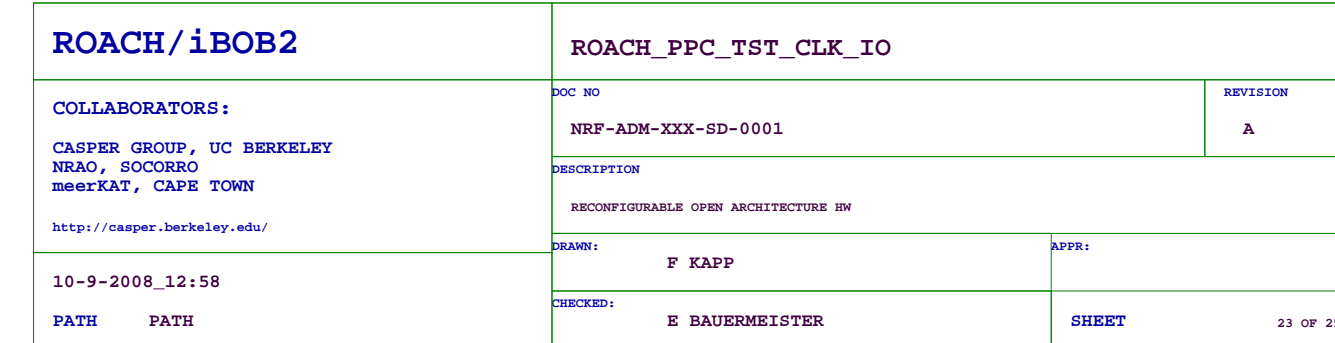
CONFIRMED NC'S ON PINS WITH AMCC TECH SUPPORT IN EMAIL DATED 2007/08/30



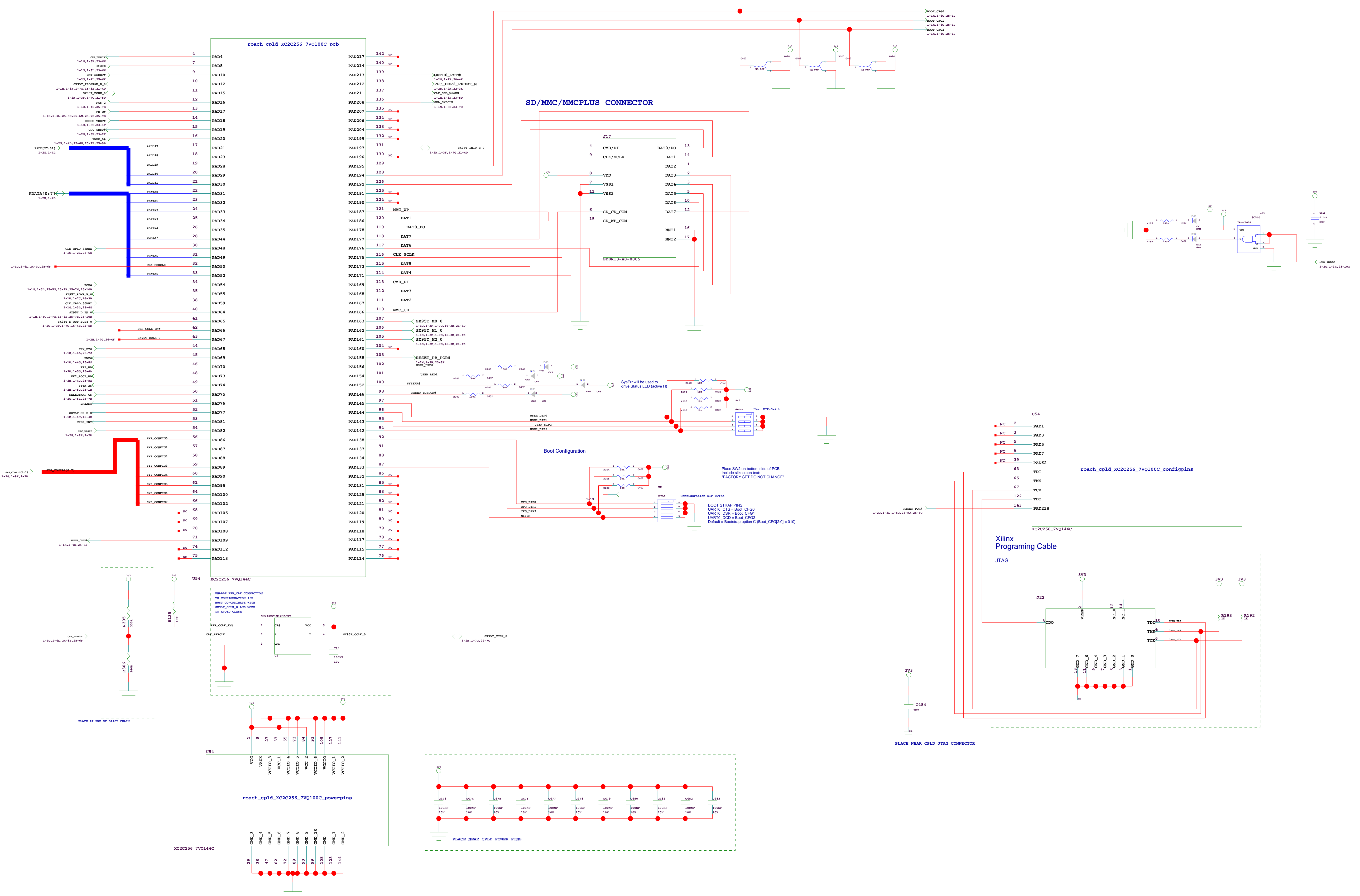




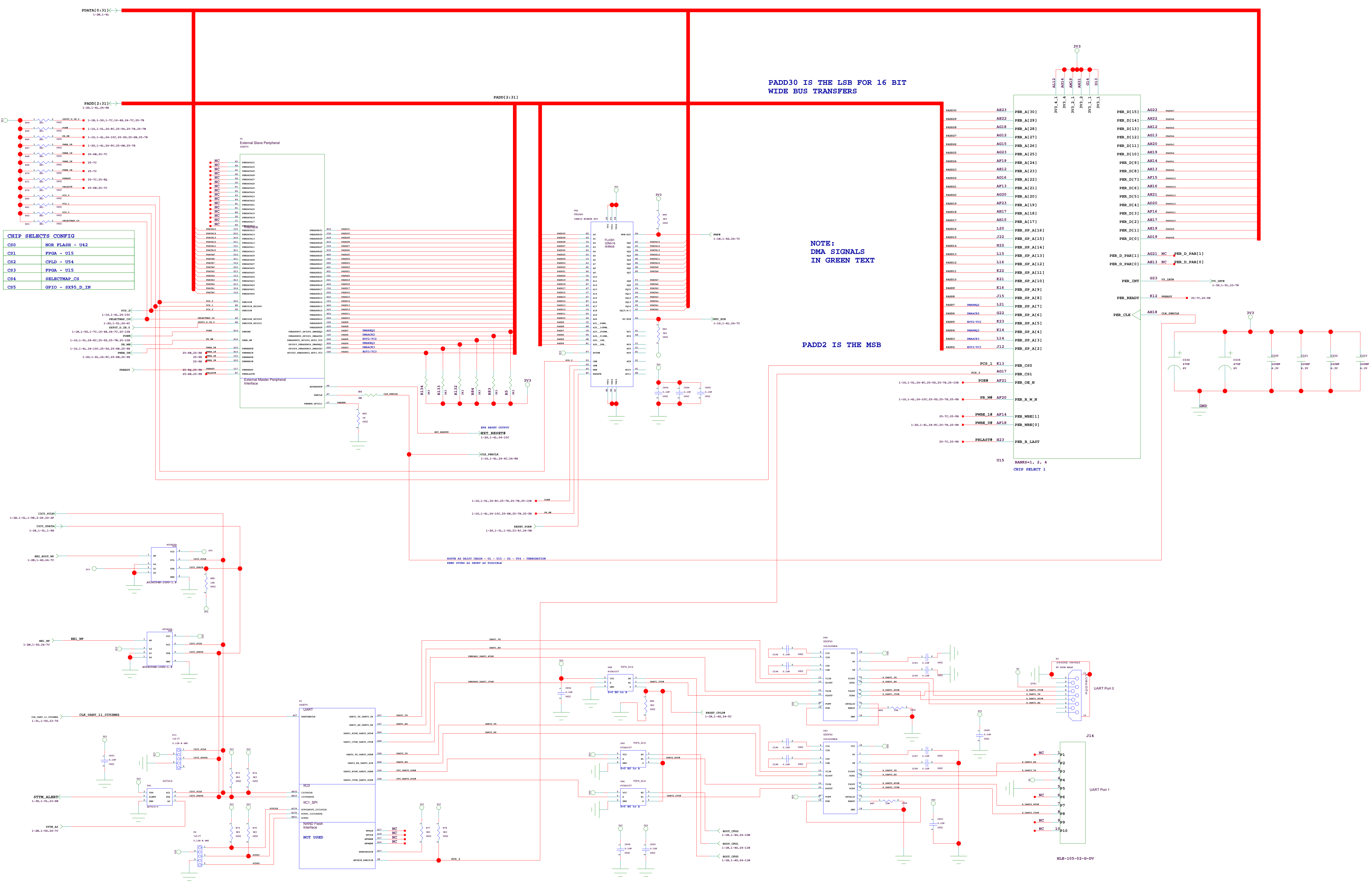








ROACH/iBOB2		ROACH_PPC_CPLD	
COLLABORATORS:		DOC NO	REVISION
CAPSER GROUP, UG BEKKLEY NR40, S0C080 MOUNTAIN, CAPE TOWN		NRP-ADM-KXX-GD-0001	A
		DESCRIPTION	
		RECONFIGURABLE OPEN ARCHITECTURE HW	
http://capser.limbkeyley.edu/		ISSUED:	APPRO:
10-9-2008_12:58		F KAPP	
PATH	PATH	CHECKED:	SHEET
		E BAUERMEISTER	24 OF 2



ROACH/iBOE2				ROACH_PPC_NVM_SERIAL			
COLLABORATORS:				DOC NO			
CASPER GROUP, UC BERKELEY				NRF-ADM-XXX-SD-0001			
NRAO, SOONERO				DESCRIPTION			
BASICAT, CAPE TOWN				RECONFIGURABLE OPEN ARCHITECTURE HW			
http://casper.berkeley.edu/				DRAWN:			
10-9-2008, 12:58				F KAPP			
PATH				CHECKED:			
				R BAUERMEISTER			
				SHEET			
				25 OF 25			