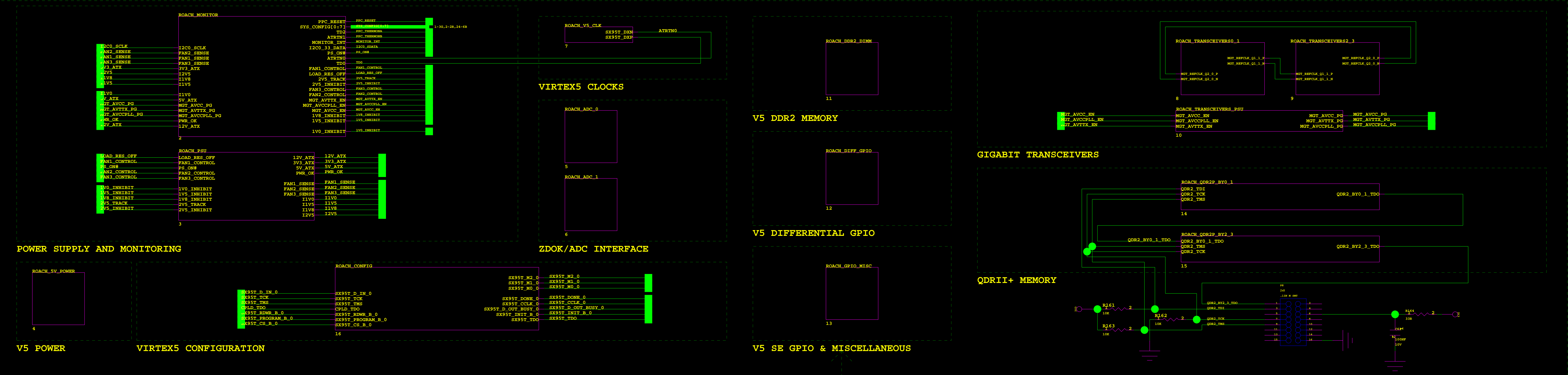


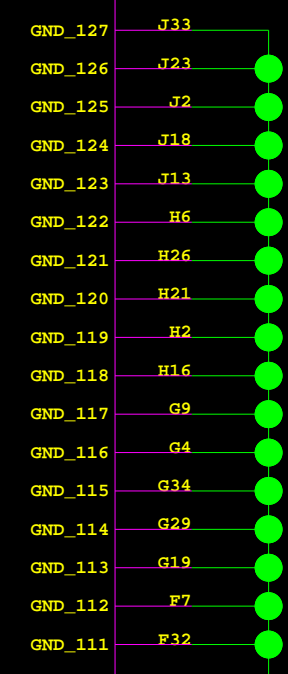
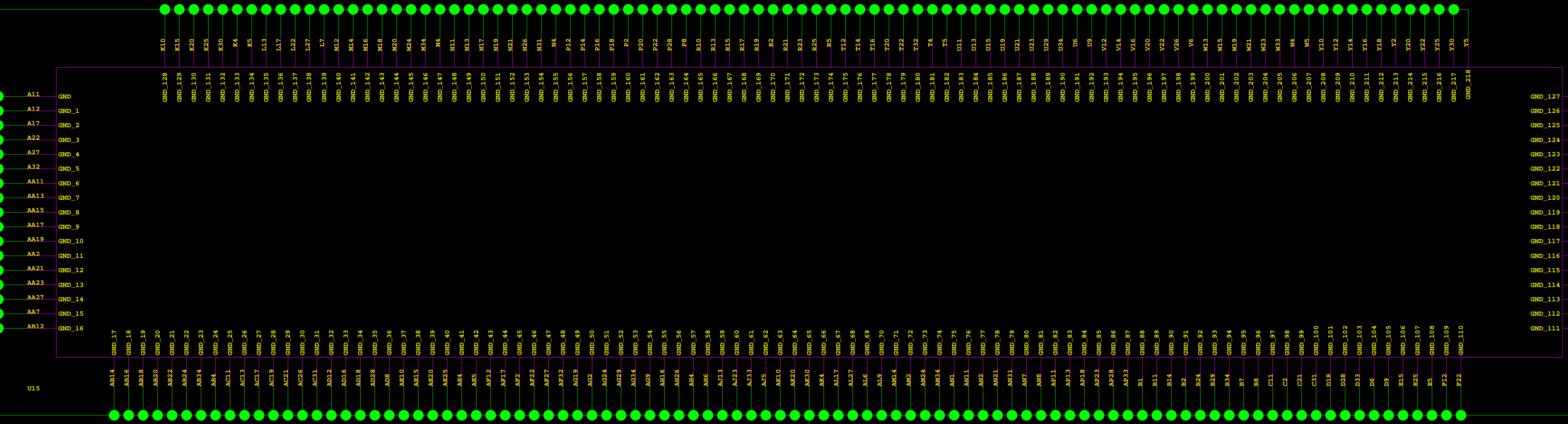
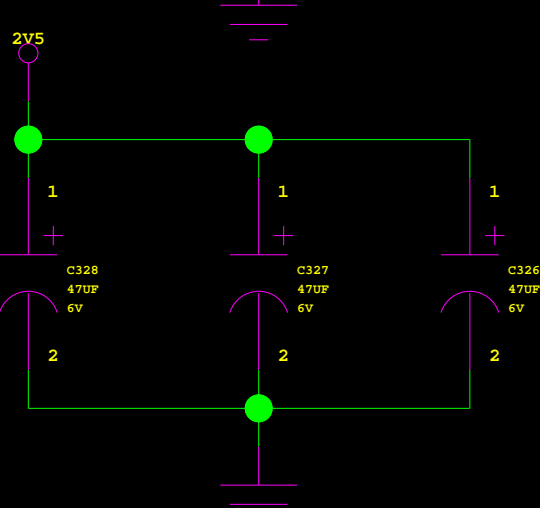
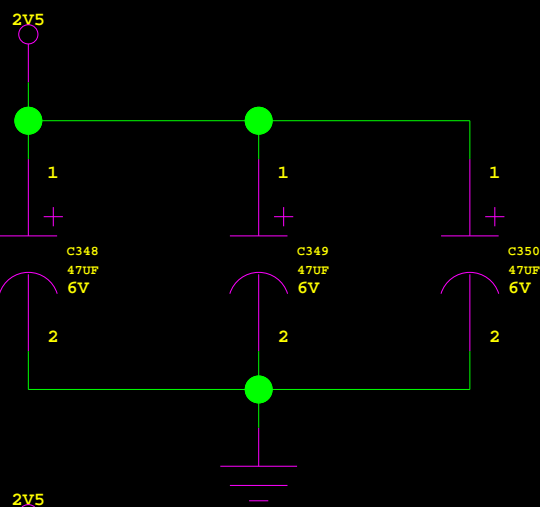
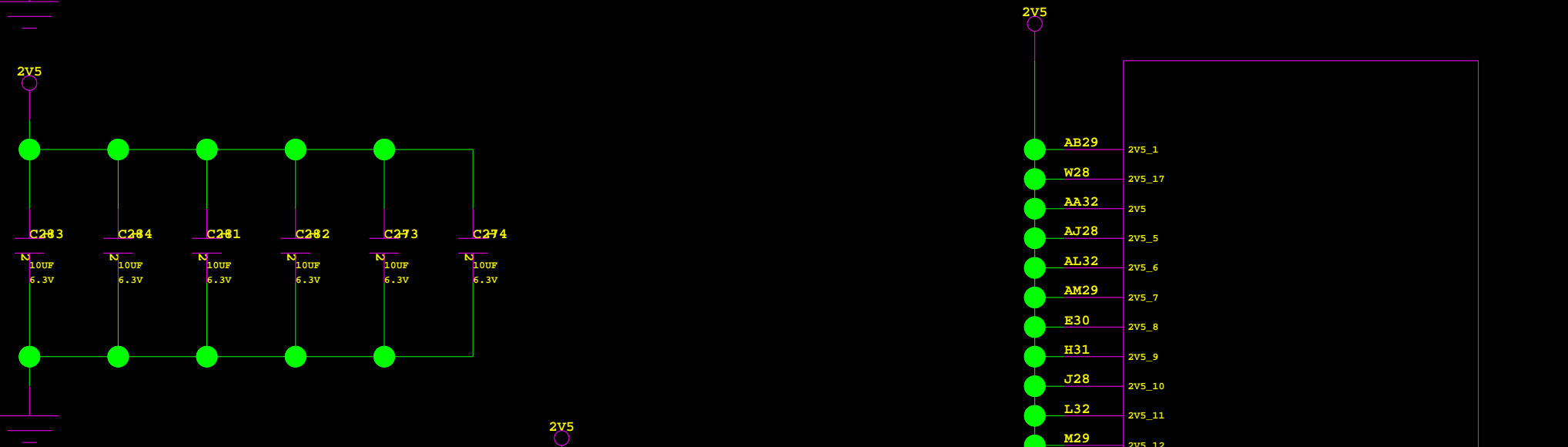
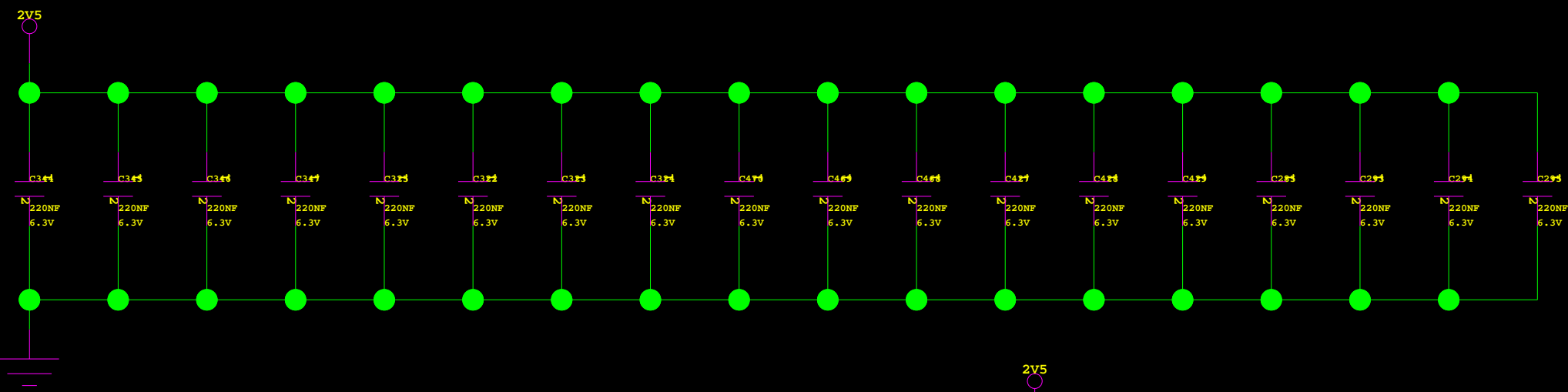
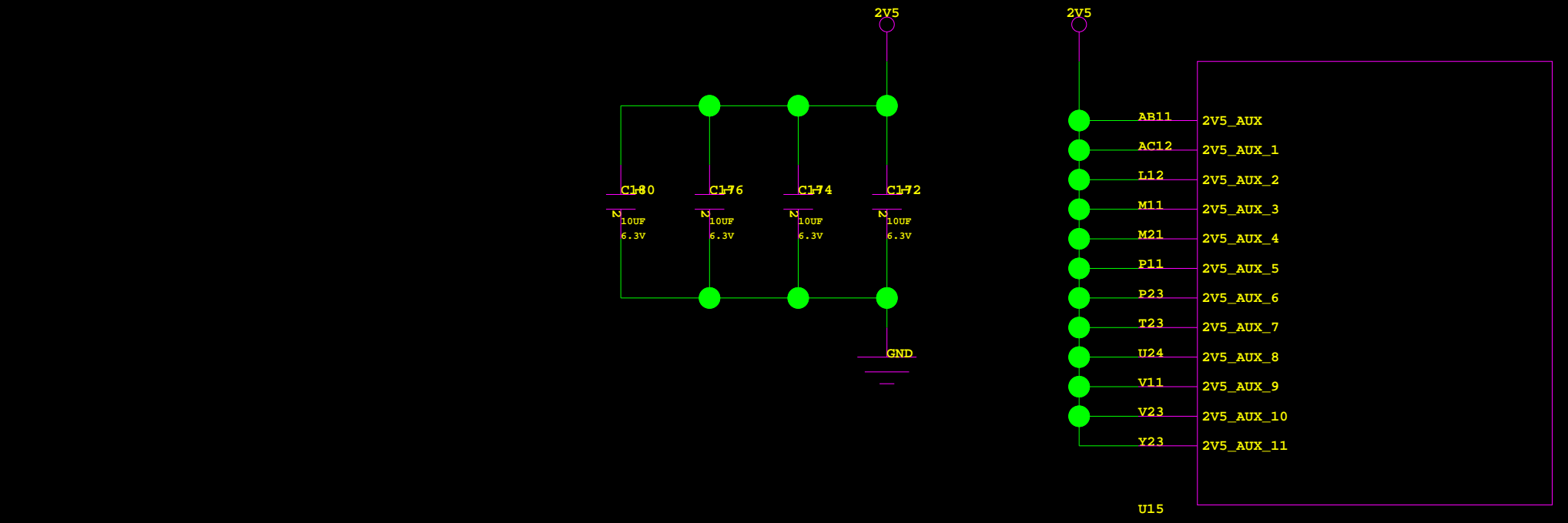
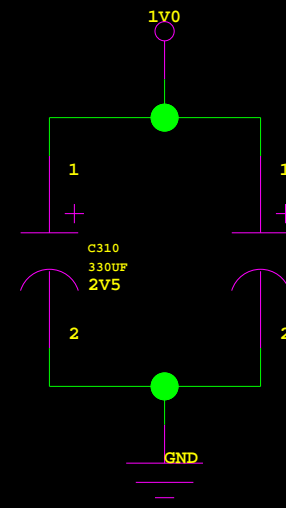
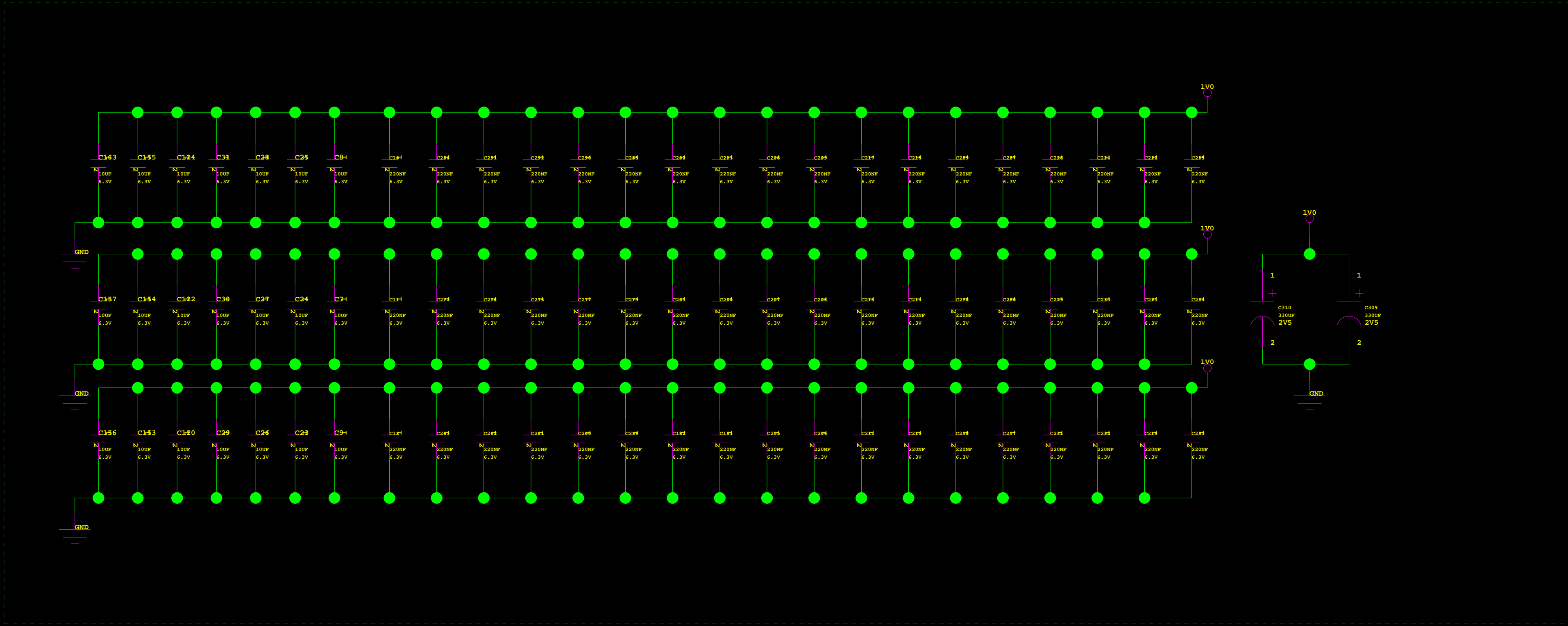
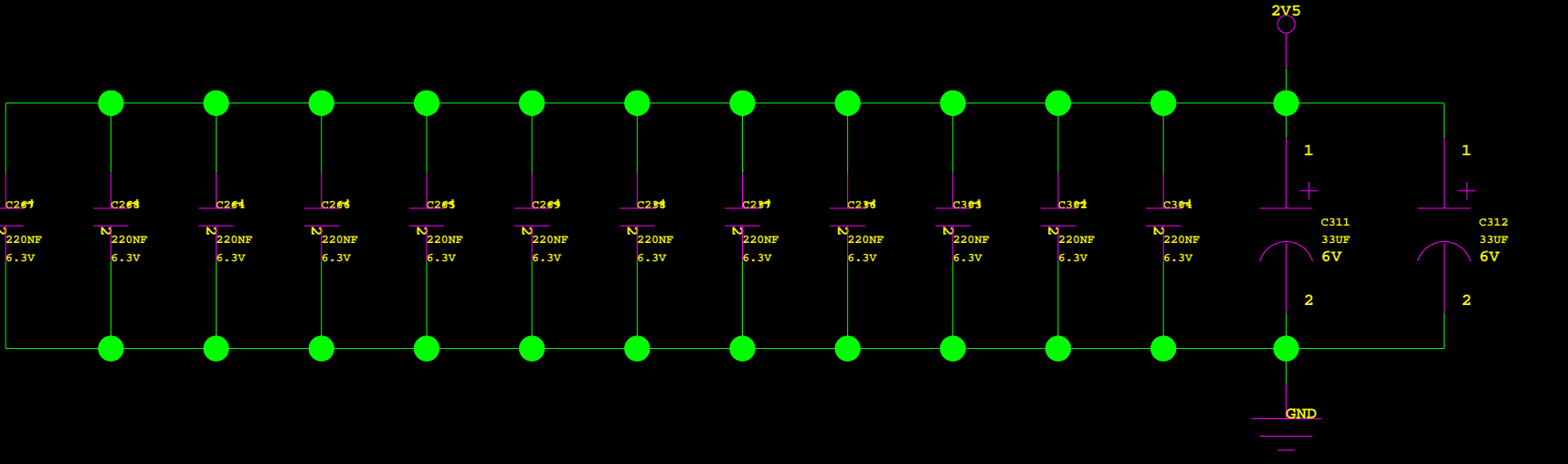
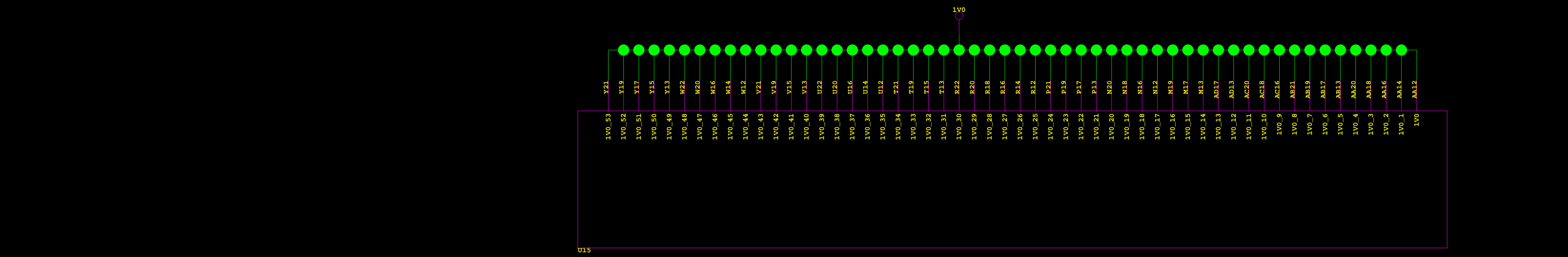
VIRTEX5



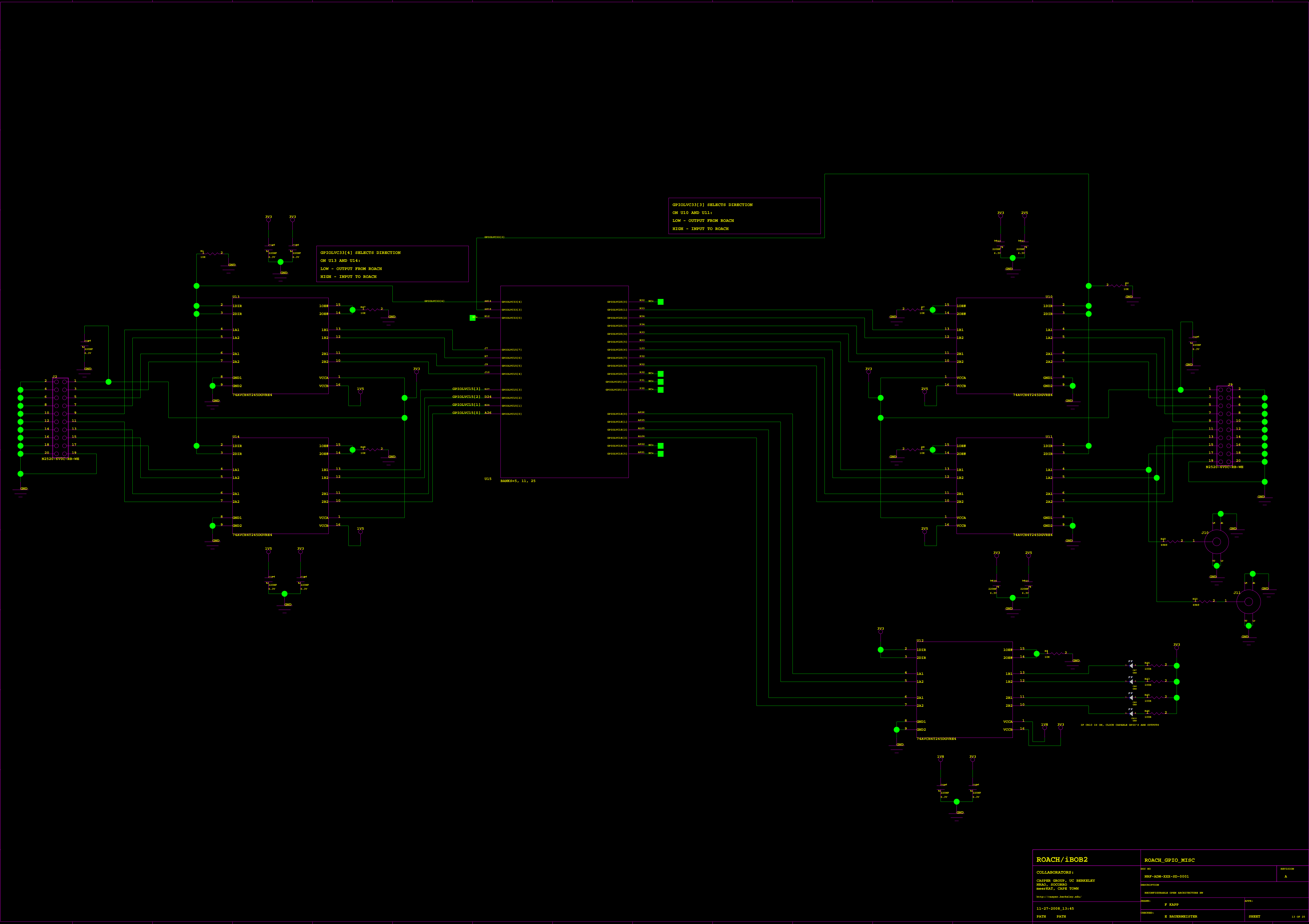
PPC



ROACH/1BOB2		ROACH_TOP	
COLLABORATORS:		DOC NO: ROACH	REVISION: 1.0.2
CASPER GROUP, UC BERKELEY HRAO, SCORPIO BEEFAT, CAPE TOWN		DESCRIPTION: RECONFIGURABLE OPEN ARCHITECTURE HW	
http://casper.berkeley.edu/		NAME: F KAPP	APP:
11-27-2008 13:45		CHECKED: E BAUDENWEISER	SHEET 1 OF 25
PATH	PATH		

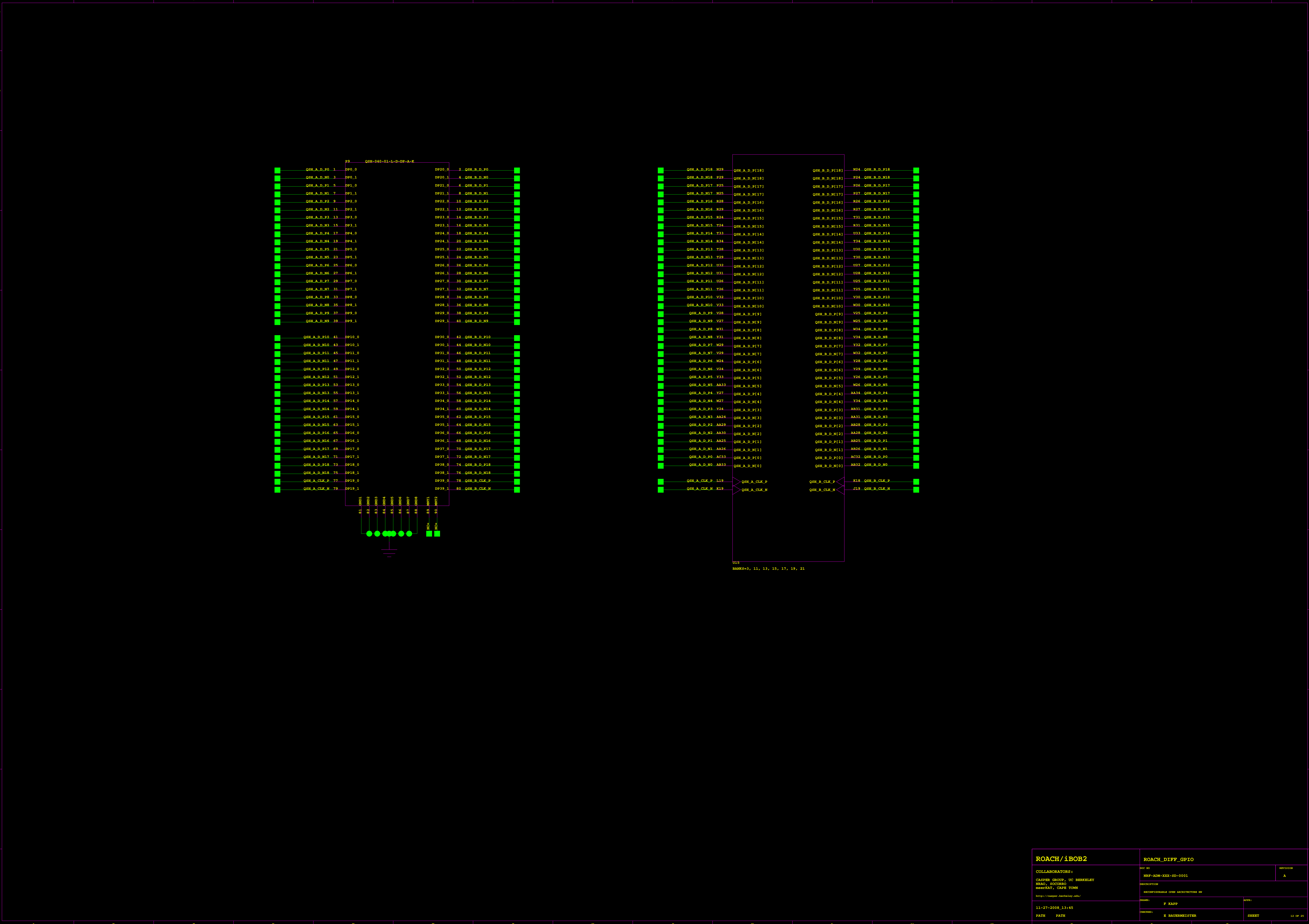


ROACH/iBOB2		ROACH_5V_POWER	
COLLABORATORS:		DOC NO	REVISION
CAUWER GROUP, UC BERKELEY		NRF-ADM-KIXX-GD-0001	A
DESCRIPTION		RECONFIGURABLE OPEN ARCHITECTURE HW	
http://casper.berkeley.edu/		DRAWN:	APPD:
11-27-2008_13:45		F KAPP	
PATH	PATH	E BAUERMEISTER	SHEET
		4 OF 25	

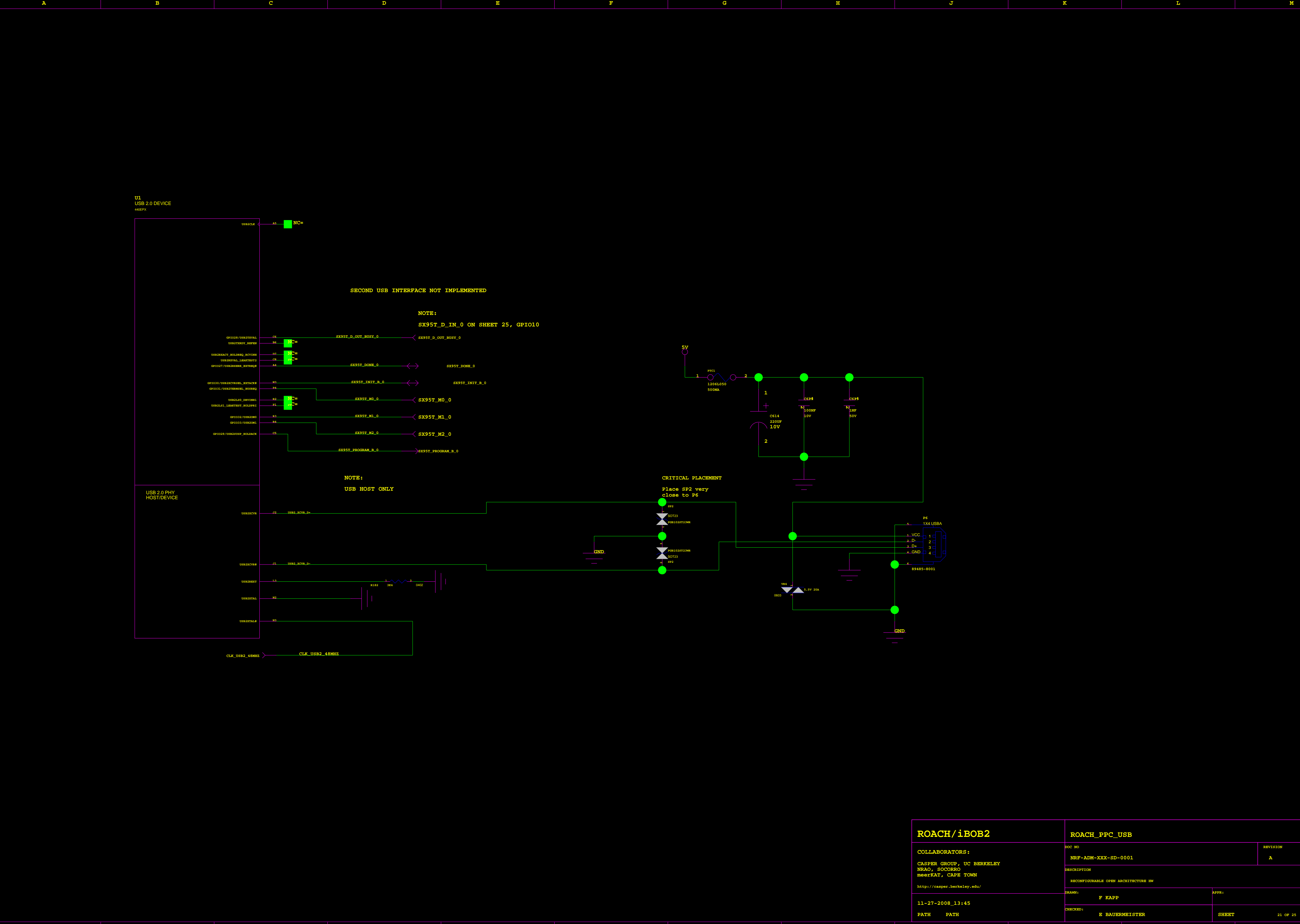


ROACH/iBOB2		ROACH_GPIO_MISC	
COLLABORATORS: CALDER GROUP, UC BERKELEY NRAO, SOCCORRO meerkat, CAPE TOWN http://camper.berkeley.edu/		DOC NO: NRF-ADM-KIX-SD-0001	REVISION: A
11-27-2008_13:45		DRAWN: F KAPP	DATE: 11-27-2008_13:45
PATH: PATH		CHECKED: E BAUERMEISTER	SHEET: 13 OF 25





ROACH/iBOB2				ROACH_DIFF_GPIO			
COLLABORATORS: CALIPER GROUP, UC BERKELEY NRAO, SOONERO meerkAT, CAPE TOWN http://camper.berkeley.edu/				DOC NO NRF-ADM-KXX-ED-0001		REVISION A	
				DESCRIPTION RECONFIGURABLE GSN ARCHITECTURE HW			
				DRAWN: F KAPP		APPR:	
11-27-2008 13:45				CHECKED: S BAUERMEISTER		SHEET 13 OF 25	
PATH		PATH					



ROACH/iBOB2		ROACH_PPC_USB	
COLLABORATORS: CASPER GROUP, UC BERKELEY NRAO, SOCORRO meerkAT, CAPE TOWN http://casper.berkeley.edu/	DOC NO NRF-ADM-XXX-SD-0001		REVISION A
	DESCRIPTION RECONFIGURABLE OPEN ARCHITECTURE HW		
	DRAWN: F KAPP APPR:		
11-27-2008_13:45	CHECKED: E BAUERMEISTER		
PATH	PATH	SHEET	21 OF 25

7

6

5

4

3

2

1

0

A

B

C

D

E

F

G

H

J

K

L

M

REMOVED 3V3 GENERATION

REMOVED +12V GENERATION

REMOVED -12V GENERATION

REMOVED +1V GENERATION

REMOVED +2V5 GENERATION

3V3

Place one cap at each corner of the PCB

C4610

C4608

C4609

C4611

1000PF

1000PF

1000PF

1000PF

1000PF

ROACH/iBOB2

COLLABORATORS:

CASPER GROUP, UC BERKELEY

NRAC, SOCORRO

meerkAT, CAPE TOWN

<http://casper.berkeley.edu/>

11-27-2008_13:45

PATH

PATH

ROACH_PPC_POWER_2

DOC NO

NRF-ADM-XXX-SD-0001

REVISION

A

DESCRIPTION

RECONFIGURABLE OPEN ARCHITECTURE HW

DRAWN:

F KAPP

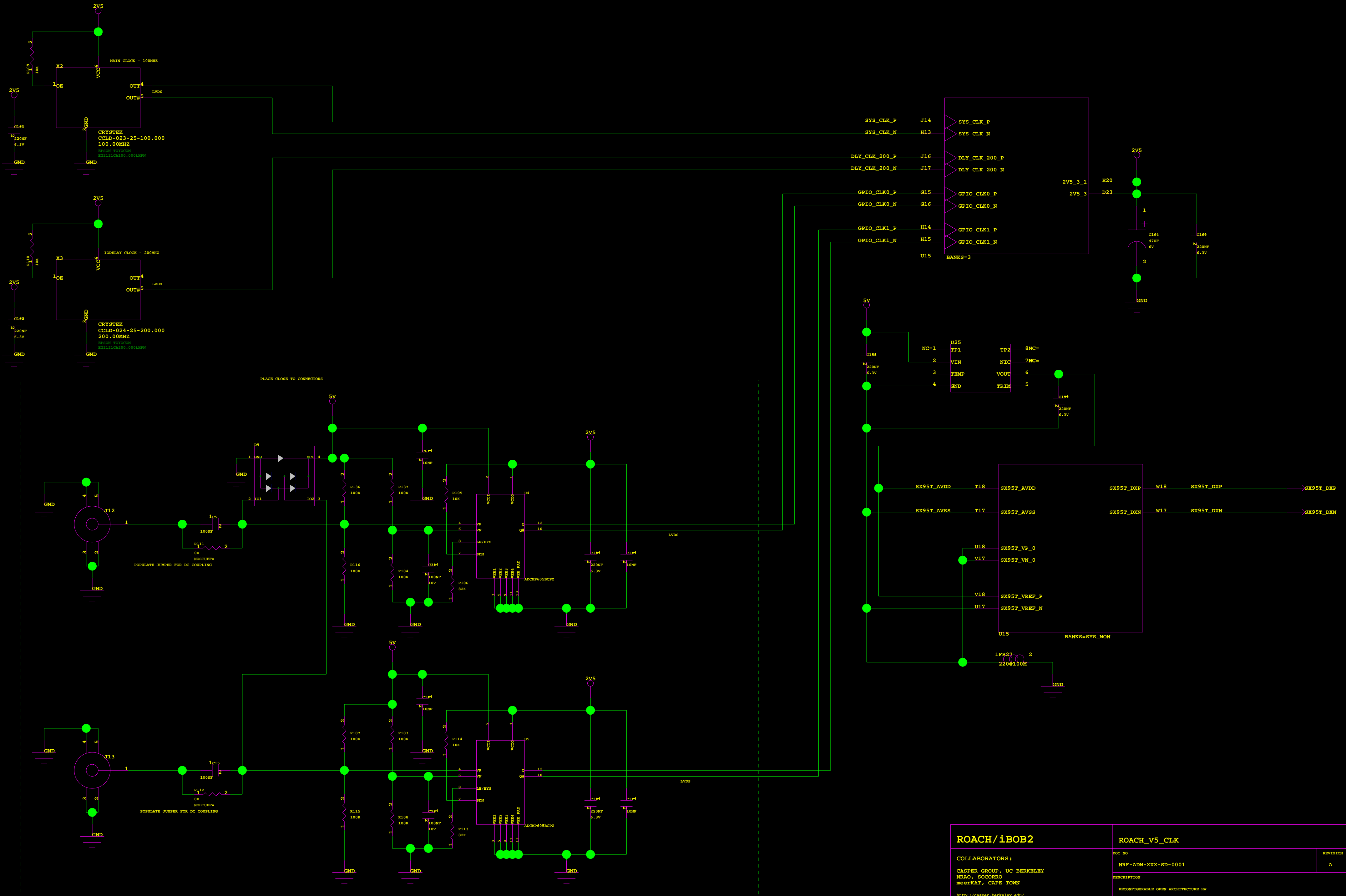
APPR:

CHECKED:

E BAUERMEISTER

SHEET

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ROACH/iBOB2		ROACH_V5_CLK	
COLLABORATORS:		DOC NO	REVISION
CASPER GROUP, UC BERKELEY		NRF-ADM-XXX-SD-0001	A
NRAO, SOCORRO		DESCRIPTION	
meerkAT, CAPE TOWN		RECONFIGURABLE OPEN ARCHITECTURE HW	
http://casper.berkeley.edu/		DRAWN:	APPR:
11-27-2008_13:45		CHECKED:	
PATH		E BAUERMEISTER	
PATH		SHEET	
		7 OF 25	



Critical Placement and Route
Clock Rules:

Clock Rules:
CLK_UART_11.0592mhz = as short as possible
CLK_SYS_33mhz = as short as possible
CLK_CPLD_33mhz = CLK_SYS_33mhz

Critical Placement and Route
Clock Rules:

Clock Rules:
CLK_PC3_66.33mhz = as short as possible
CLK_PC2_66.33mhz = CLK_PC3_66.33mhz
CLK_PC1_66.33mhz = CLK_PC2_66.33mhz + 2.5°
CLK_GETH0_25mhz = as short as possible
CLK_GETH1_25mhz = CLK_GETH0_25mhz
CLK_CPLD_50mhz = as short as possible
CLK_USB2_0_48mhz = as short as possible
CLK_USB2_0_72mhz = as short as possible

CLK_SEL_M663N

TRACE & JTAG CONNECTORS

Critical placement and routing
of the Trace connector and nets.
Up to CPU frequency's

TRACE PORT

ROACH/iBOB2

COLLABORATORS:

CALDER GROUP, UC BERKELEY
NRAD, SOCCERBO
meerkAT, CAPE TOWN
<http://camper.berkeley.edu/>

11-27-2008_13:45

PATH PATH

ROACH_PPC_TST_CLK_IO

DOC NO

NRP-ADM-KIX-00-0001

DESCRIPTION

RECONFIGURABLE OPEN ARCHITECTURE HW

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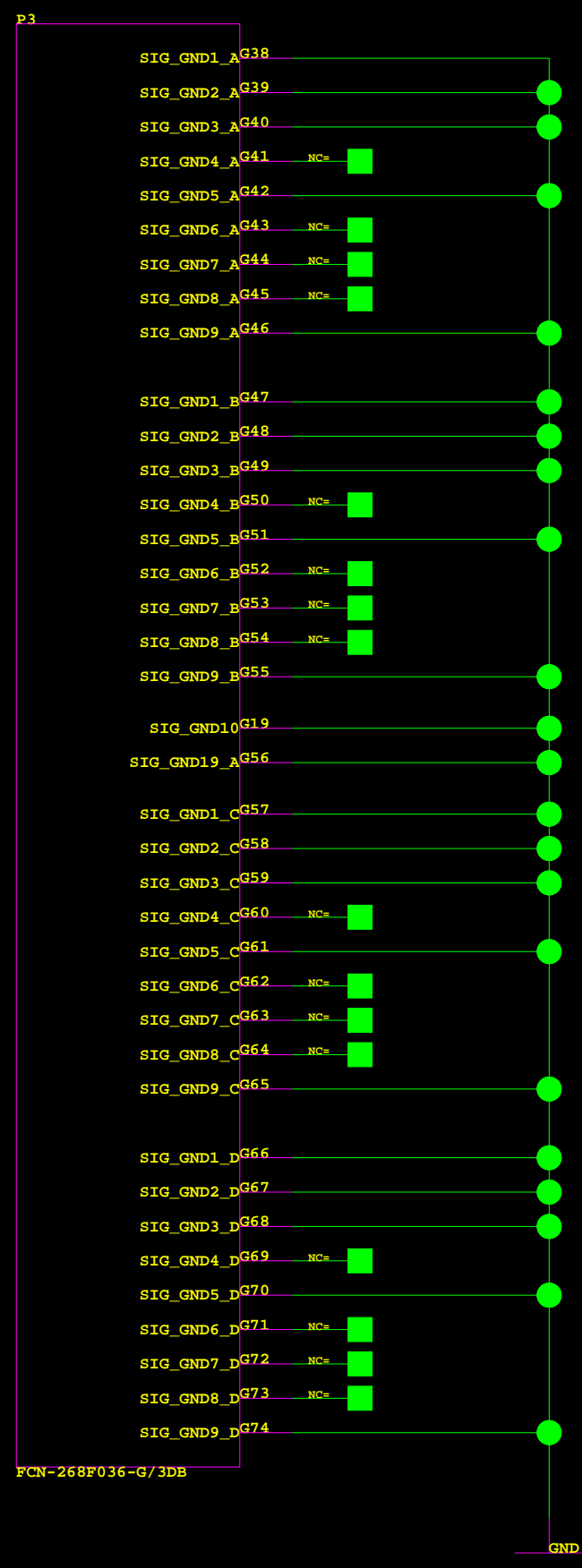
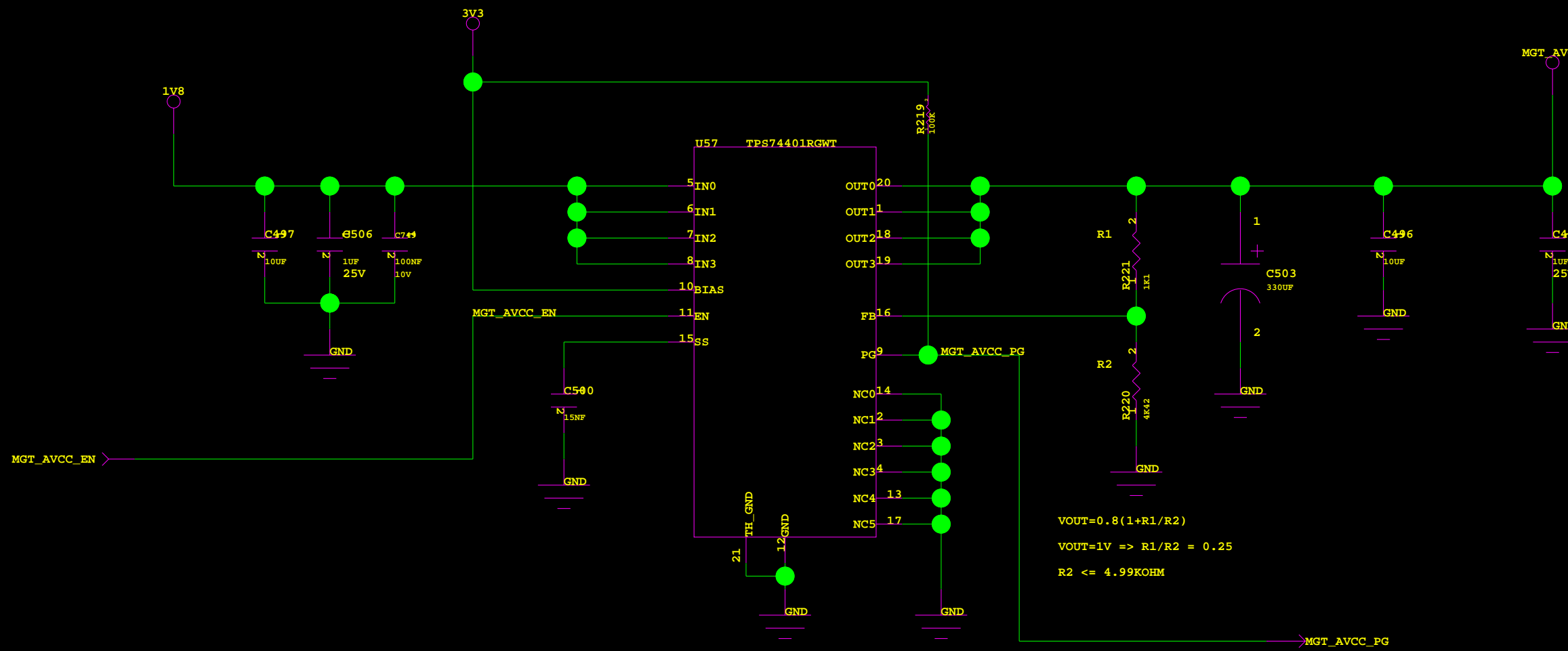
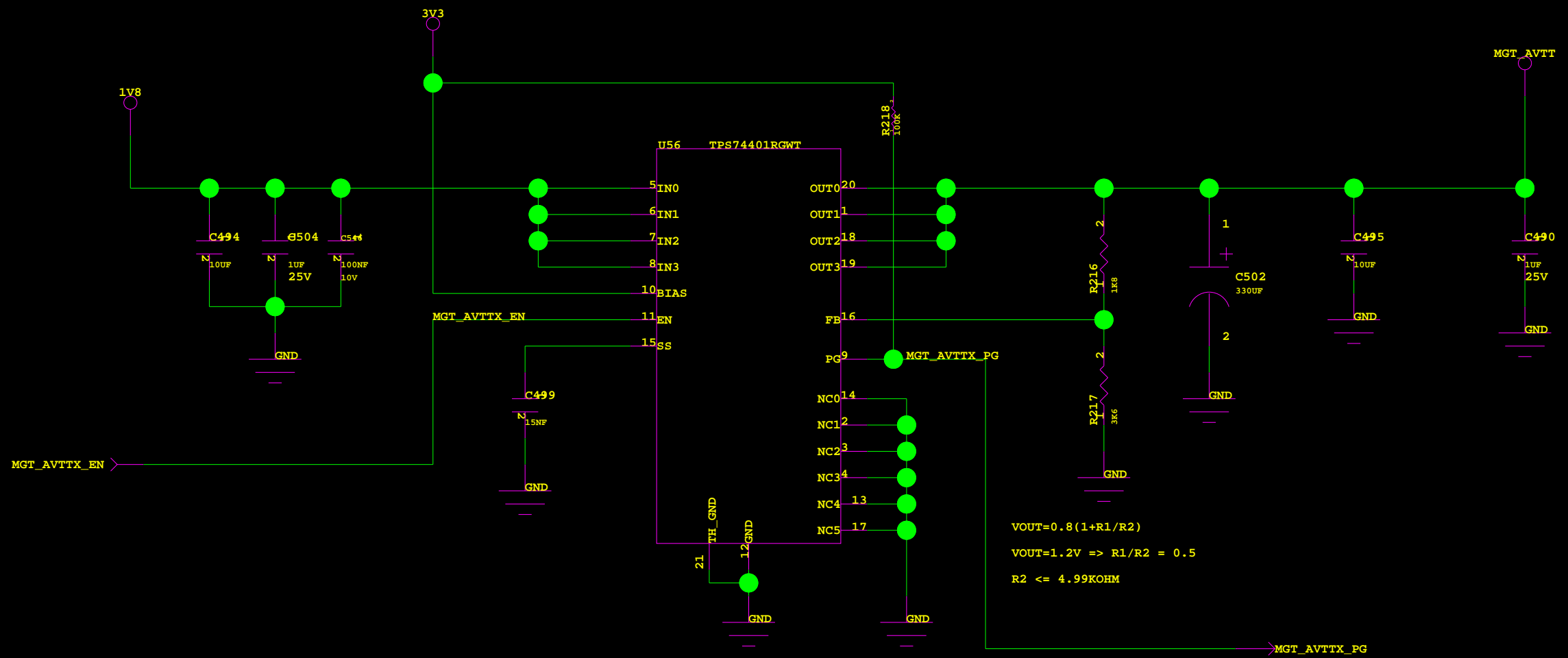
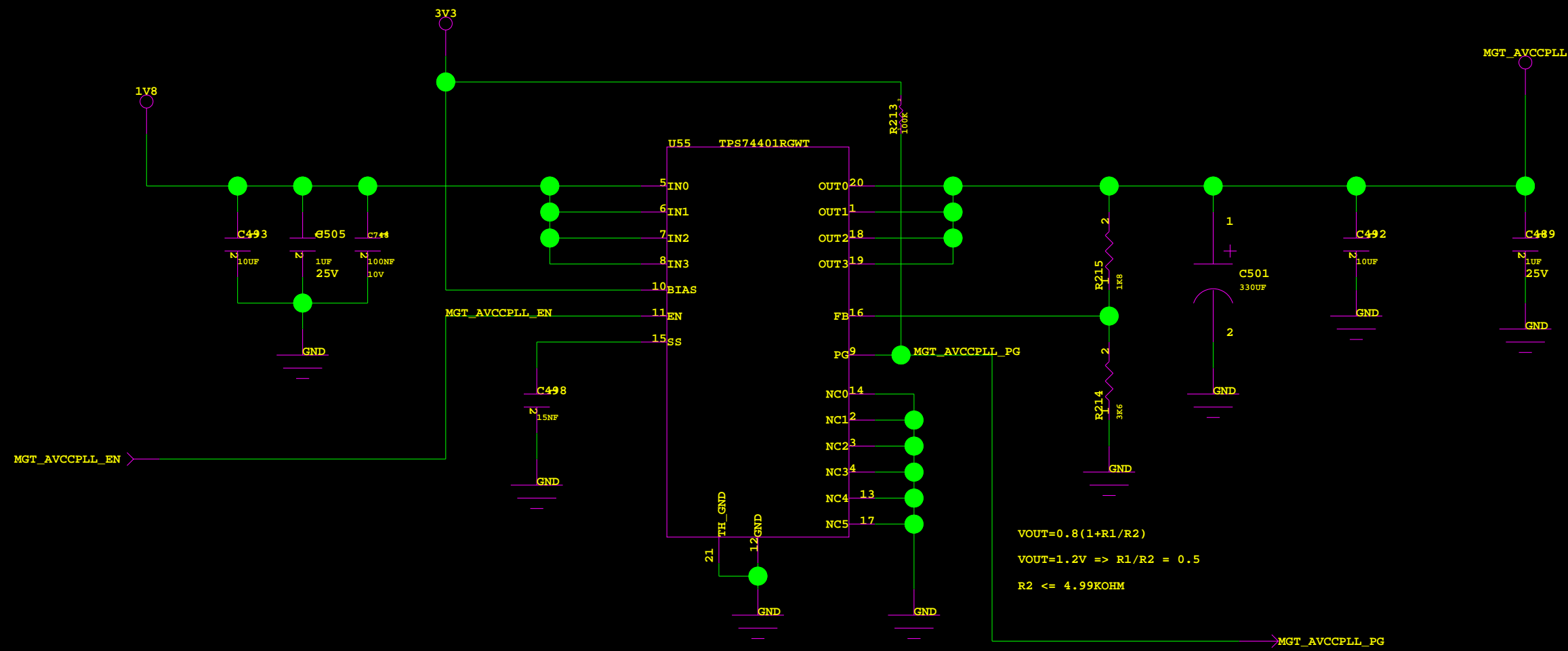
F KAPP

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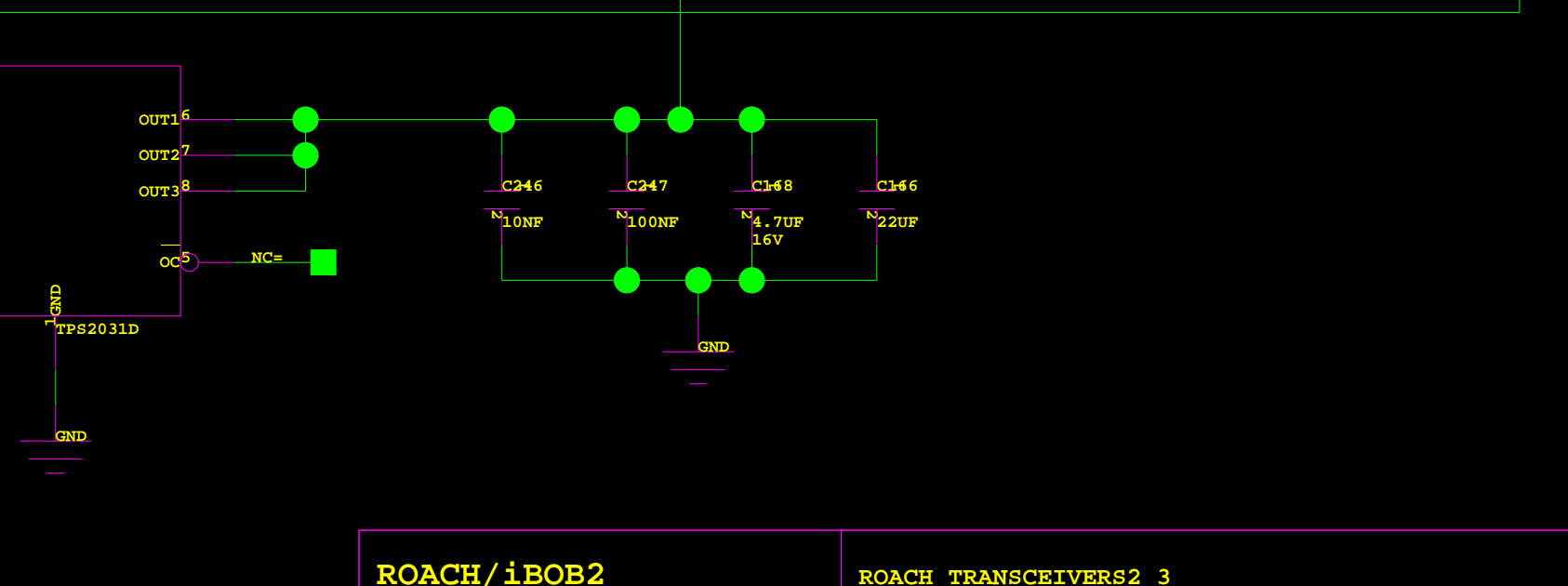
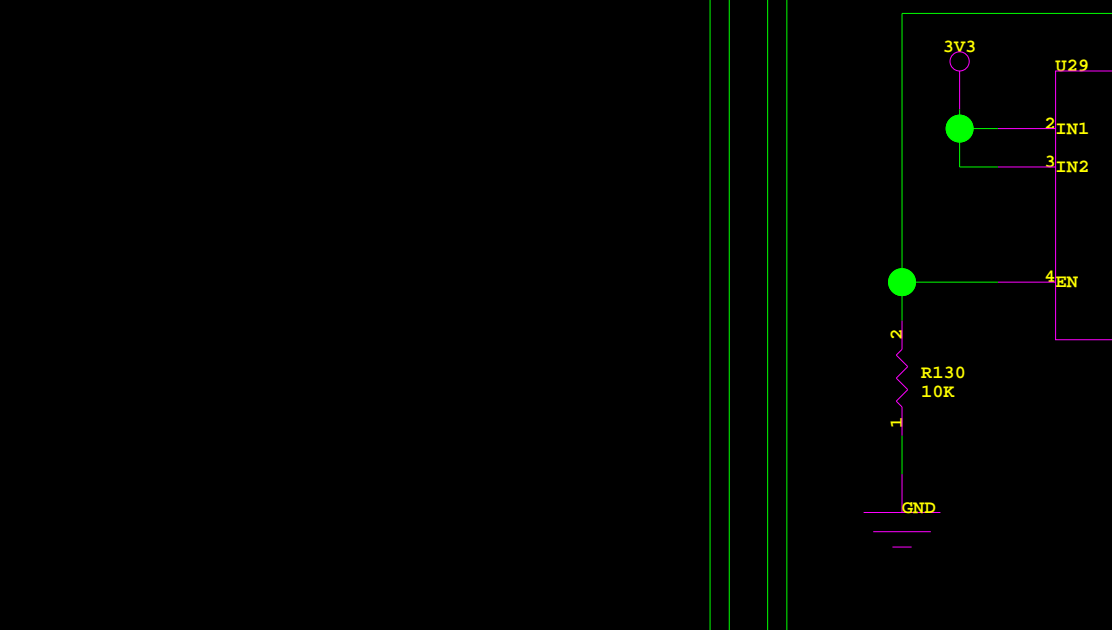
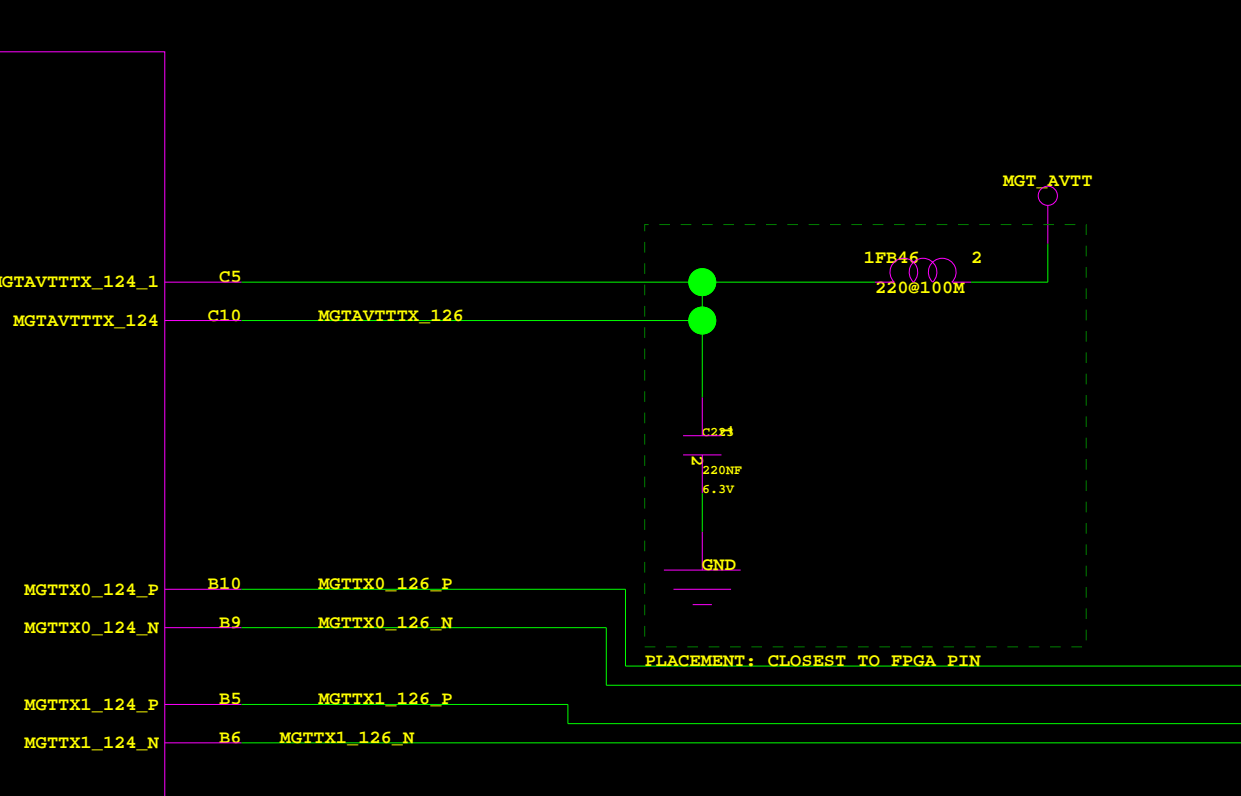
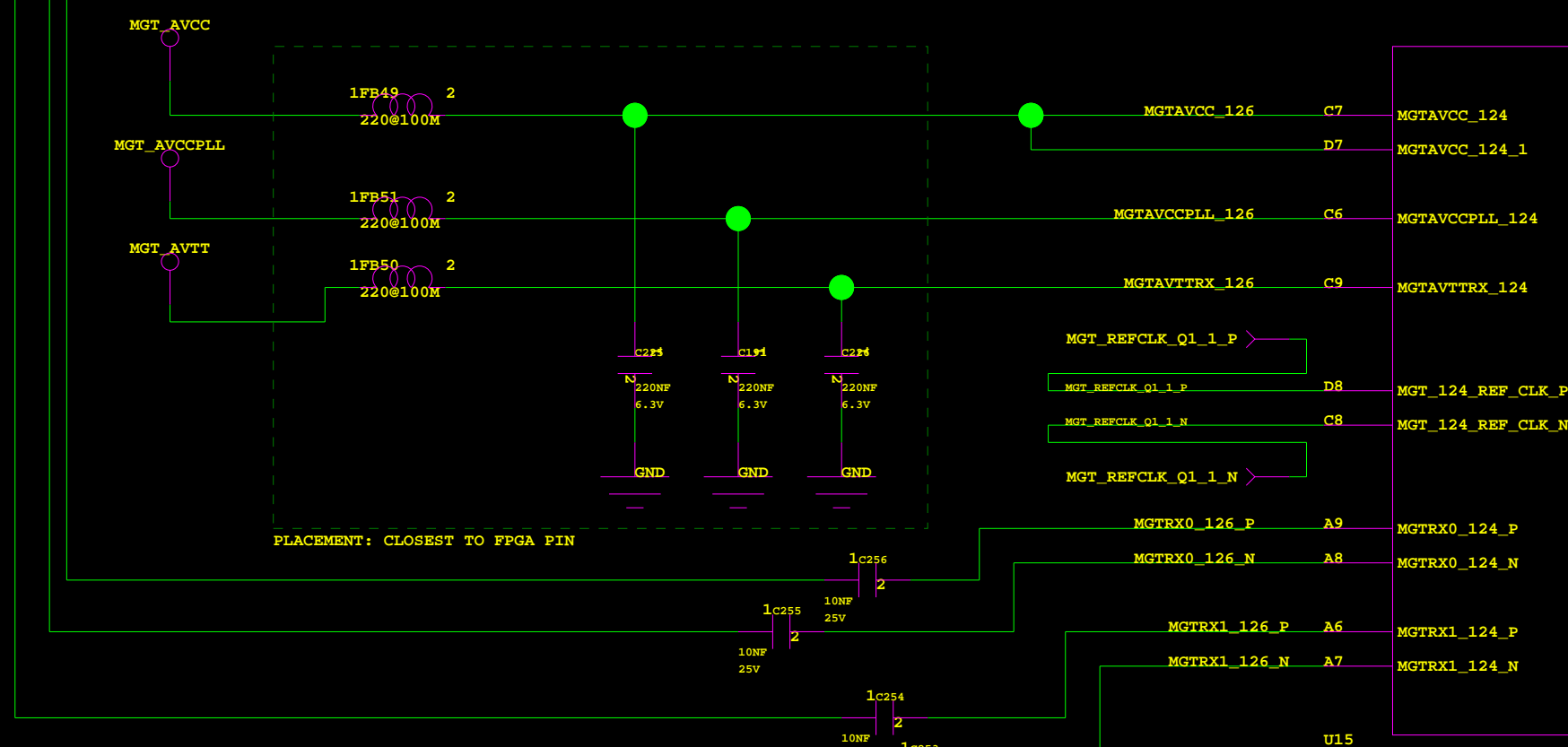
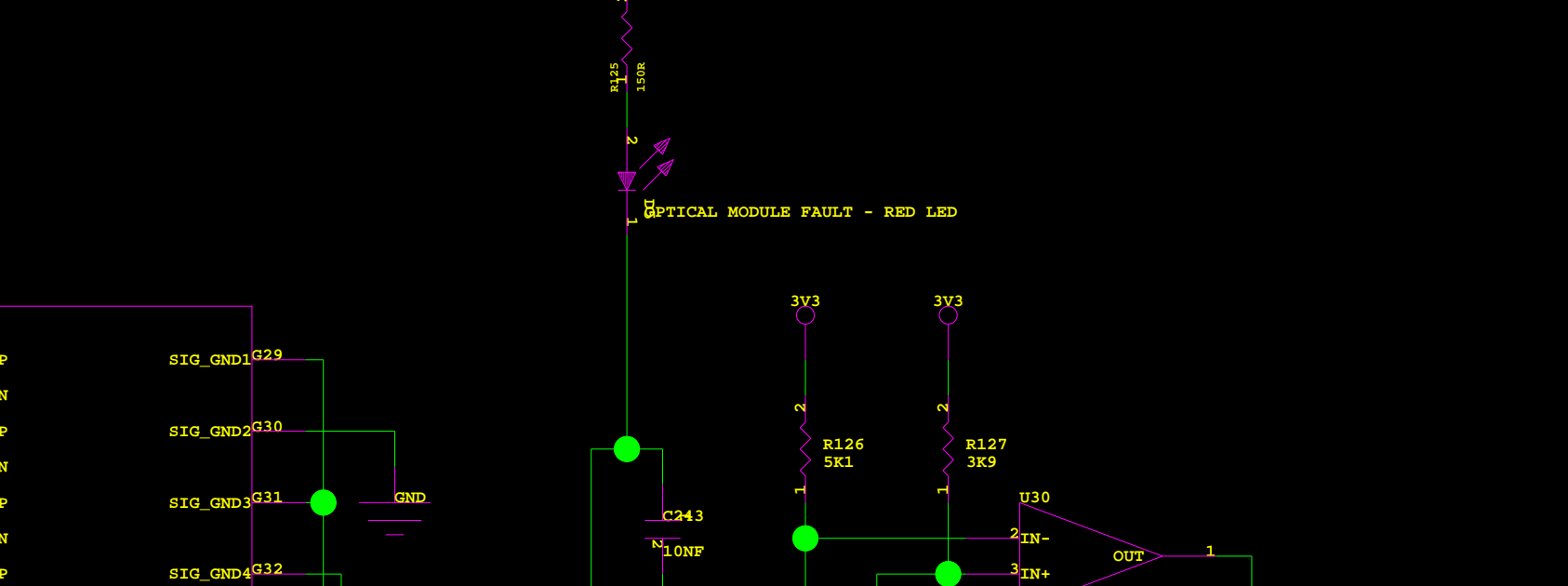
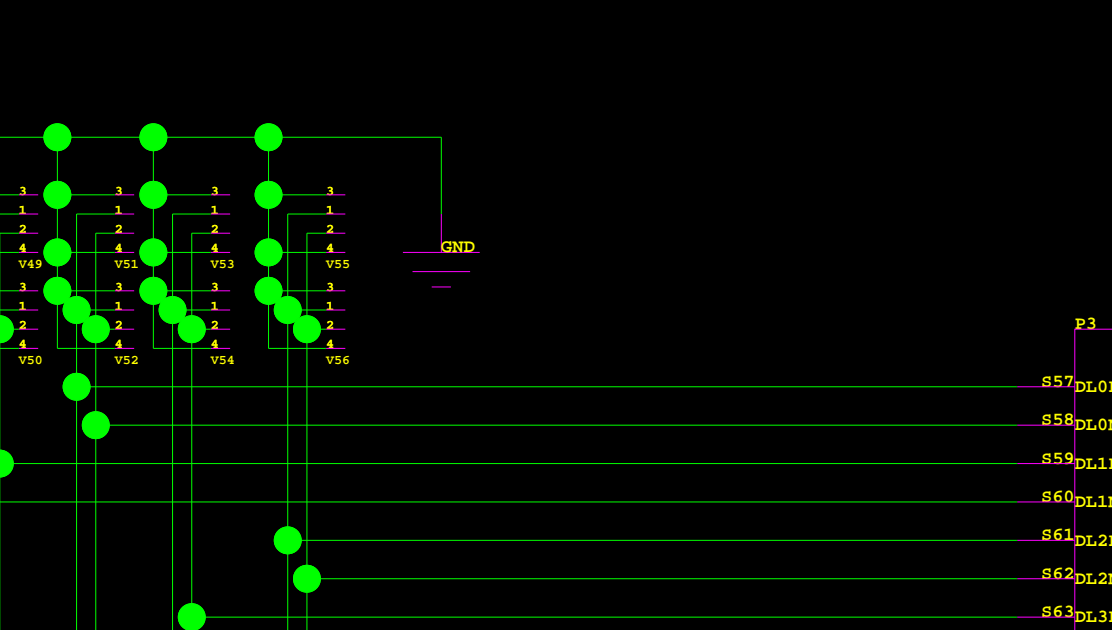
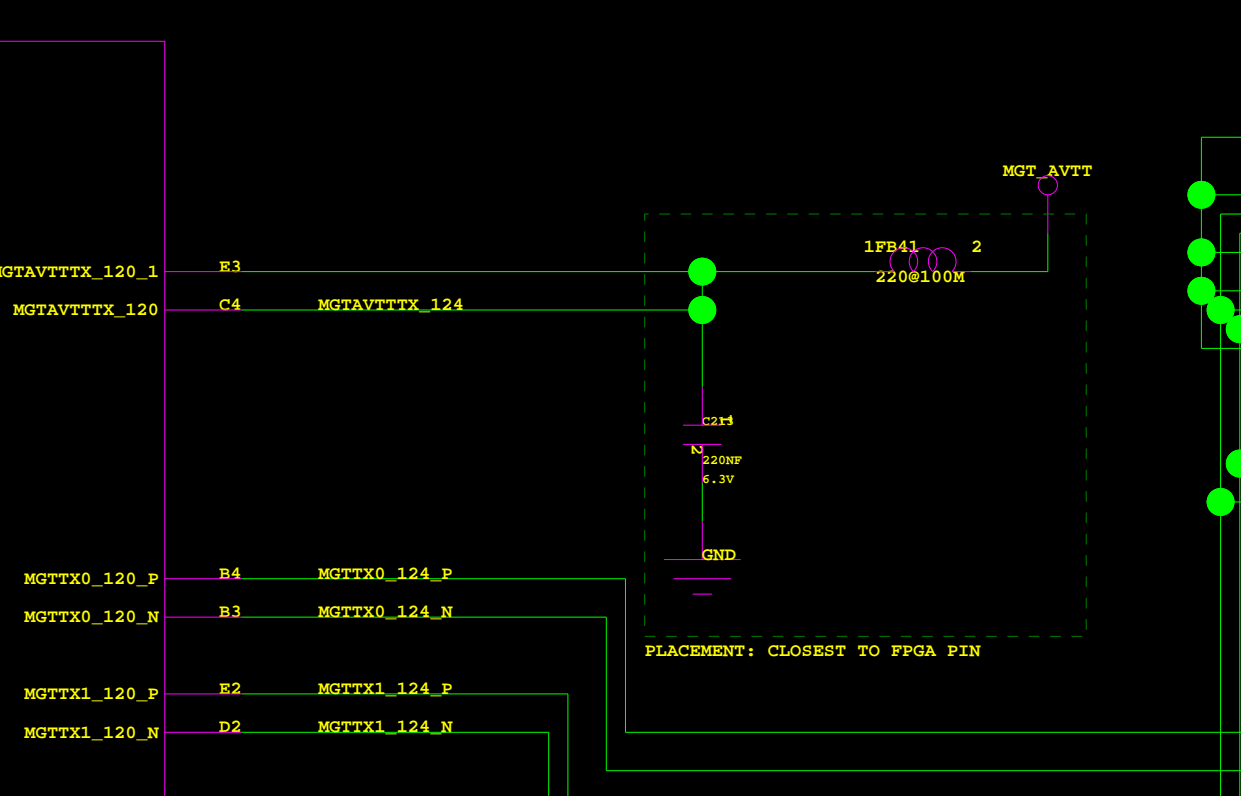
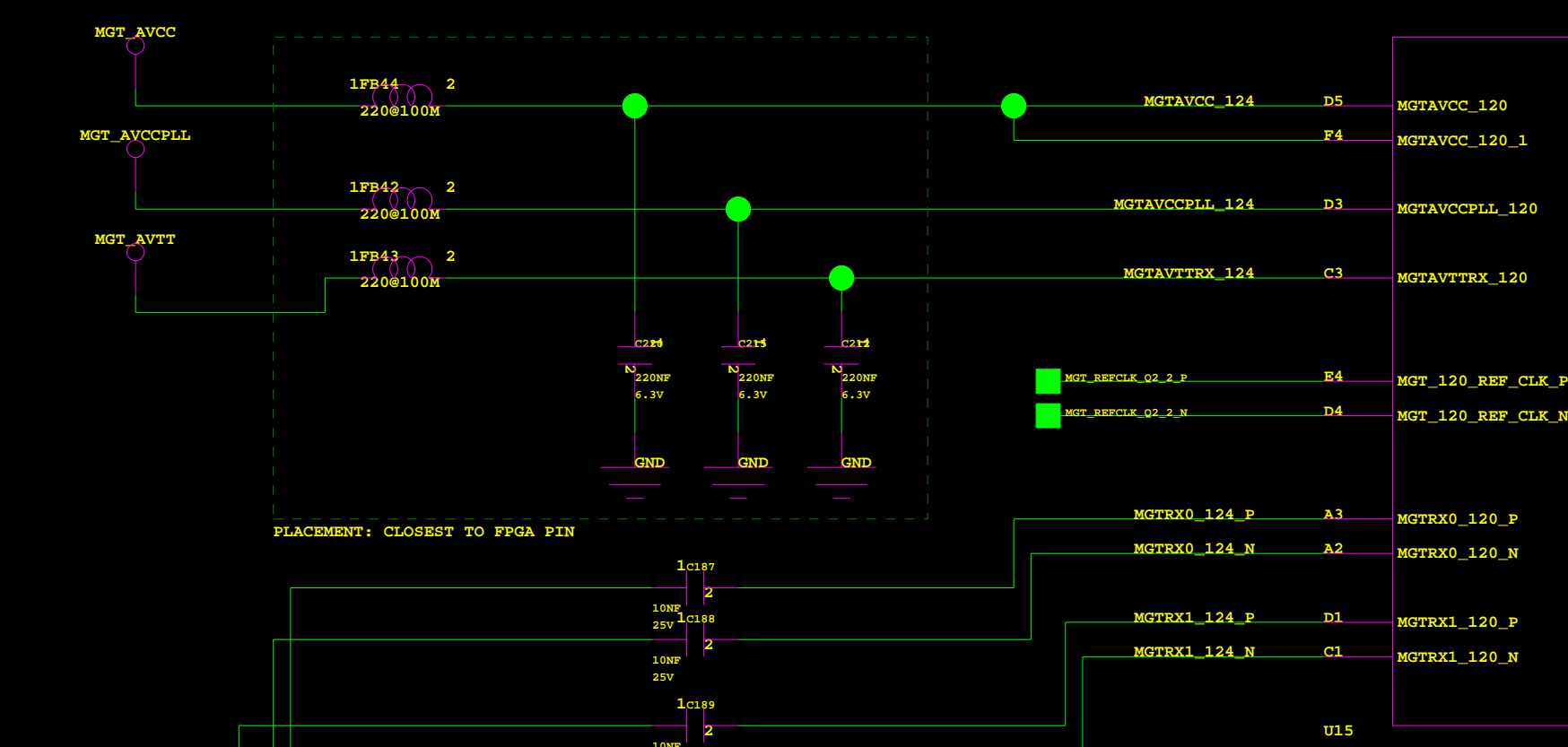
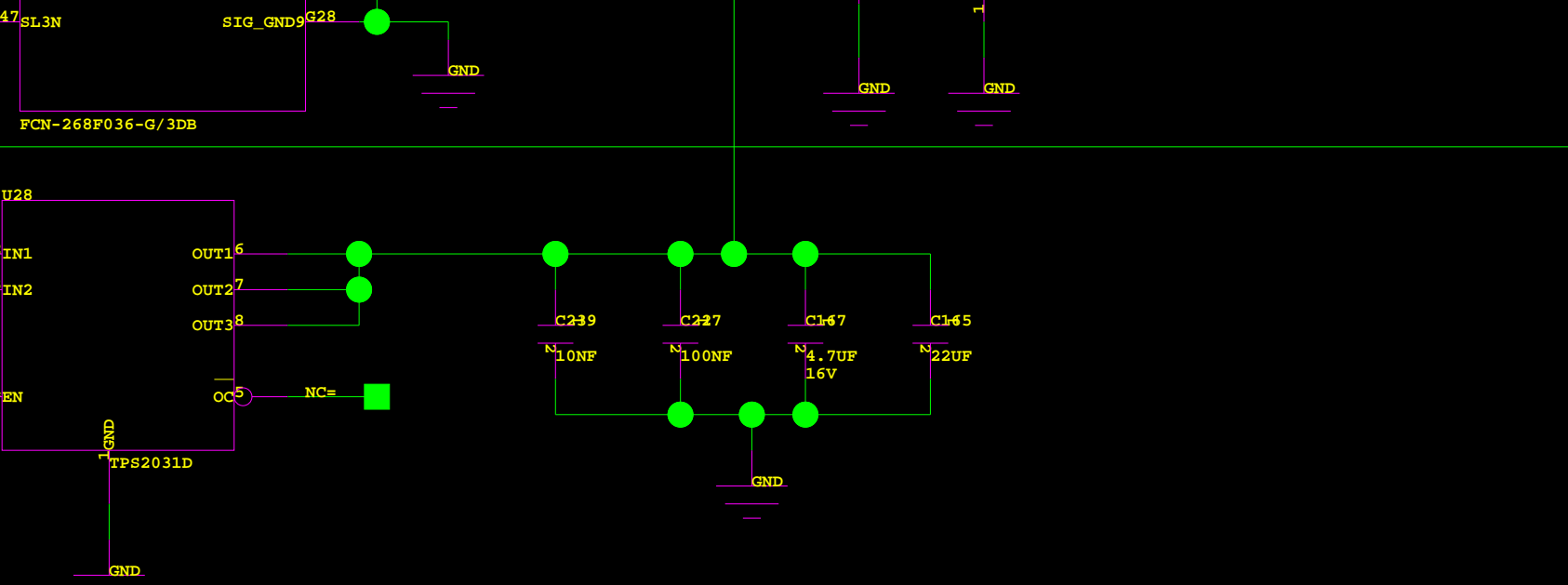
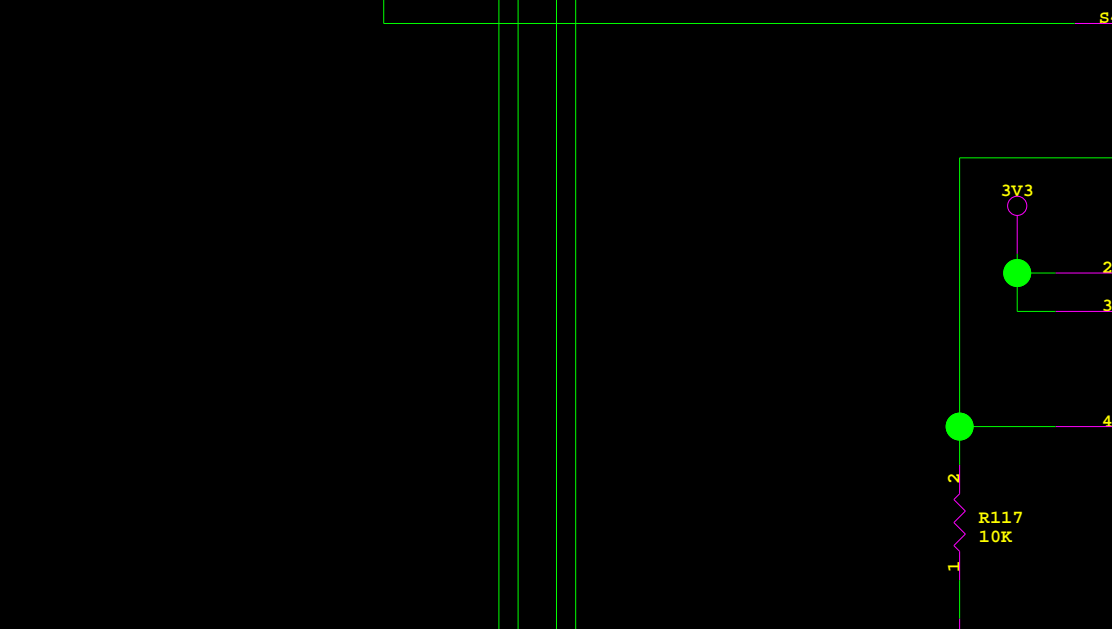
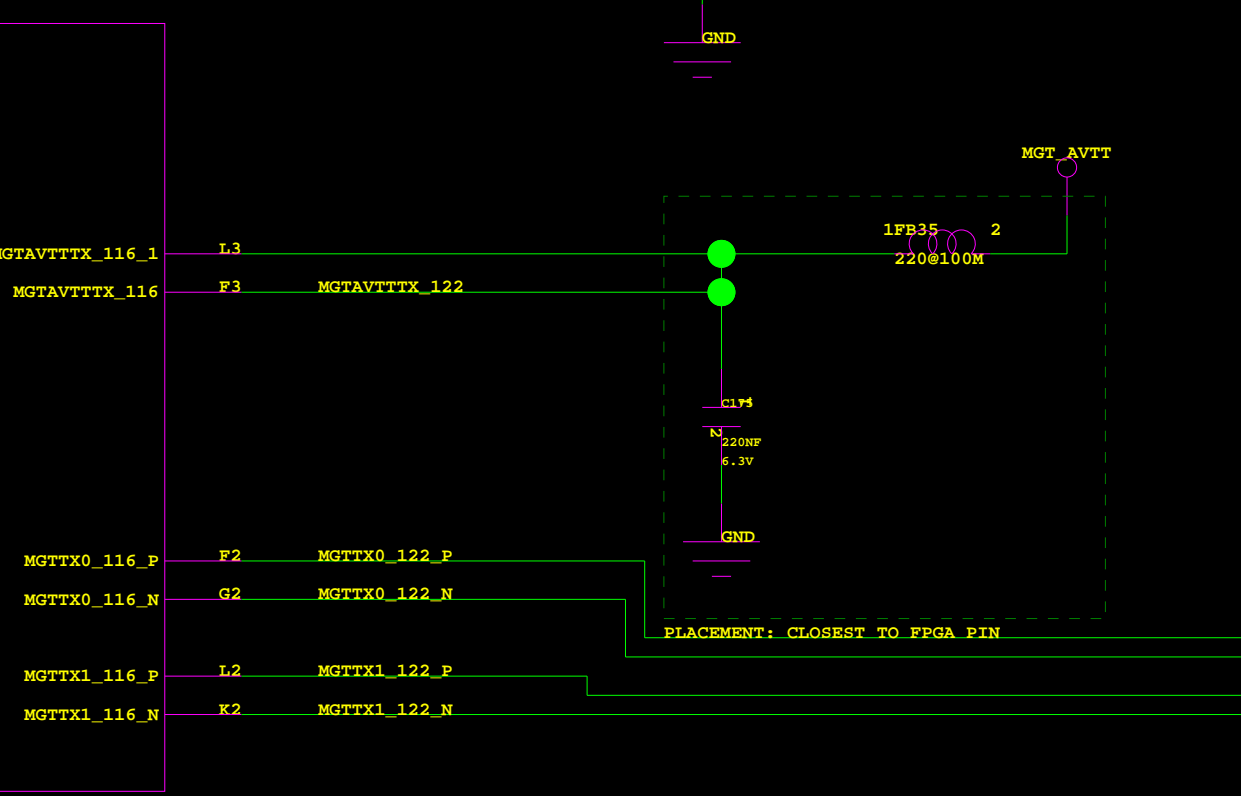
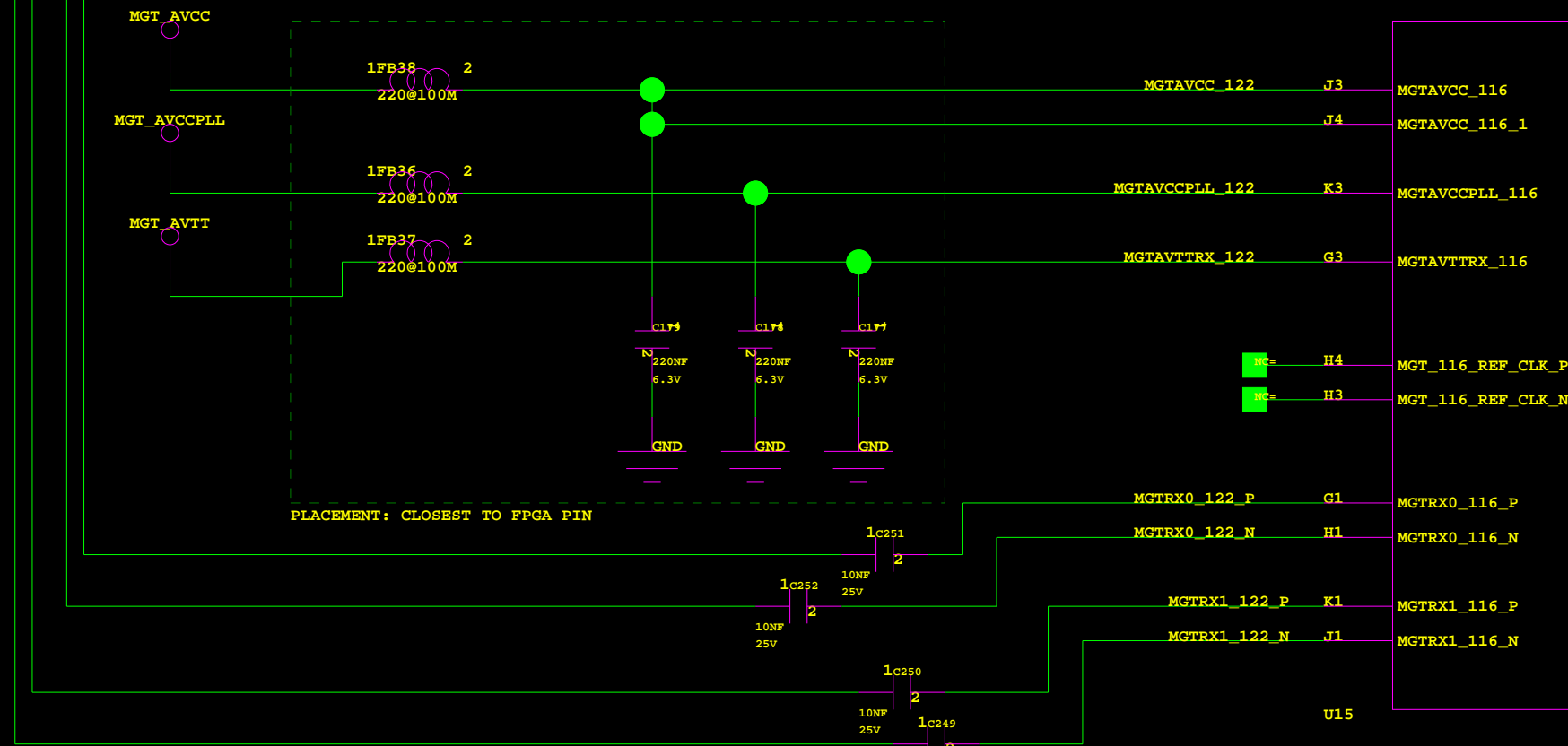
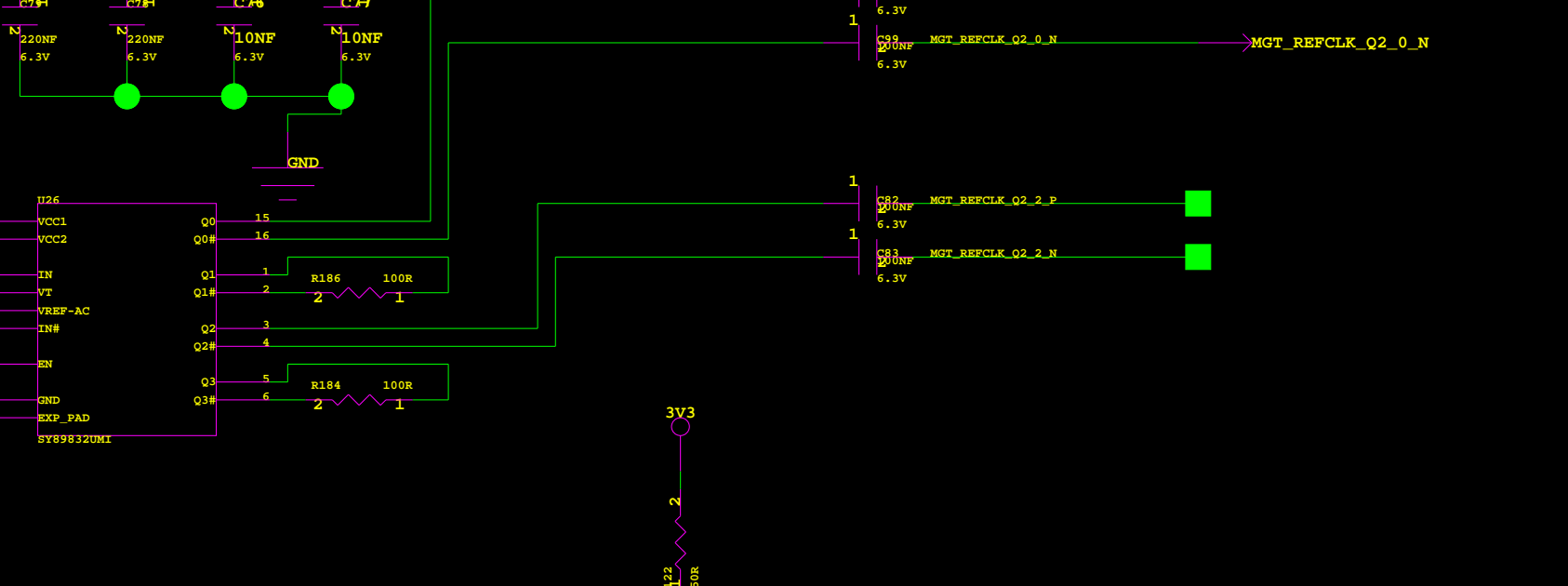
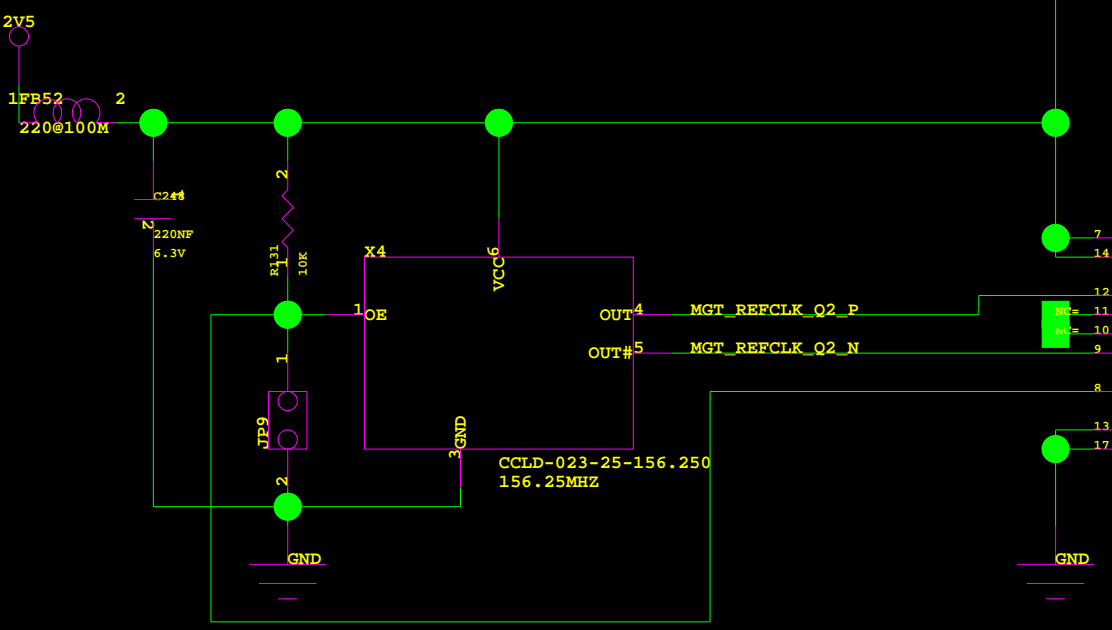
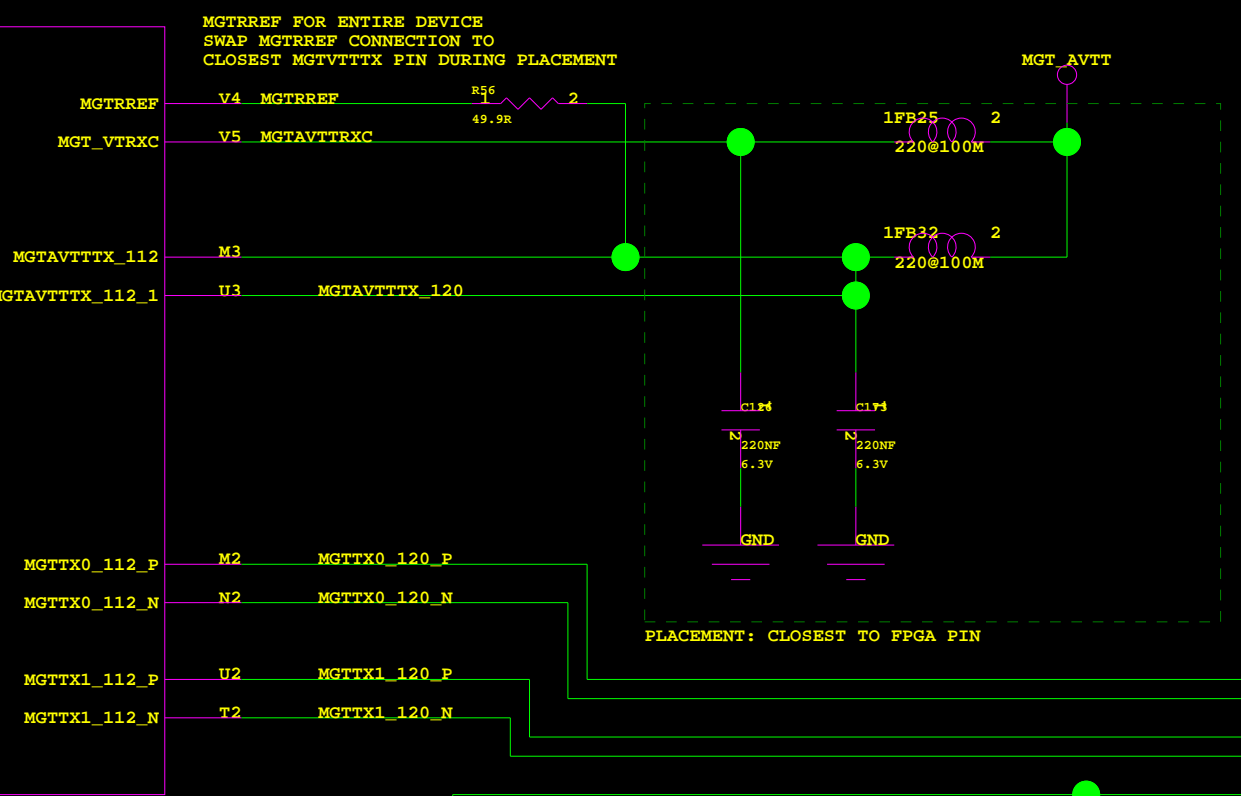
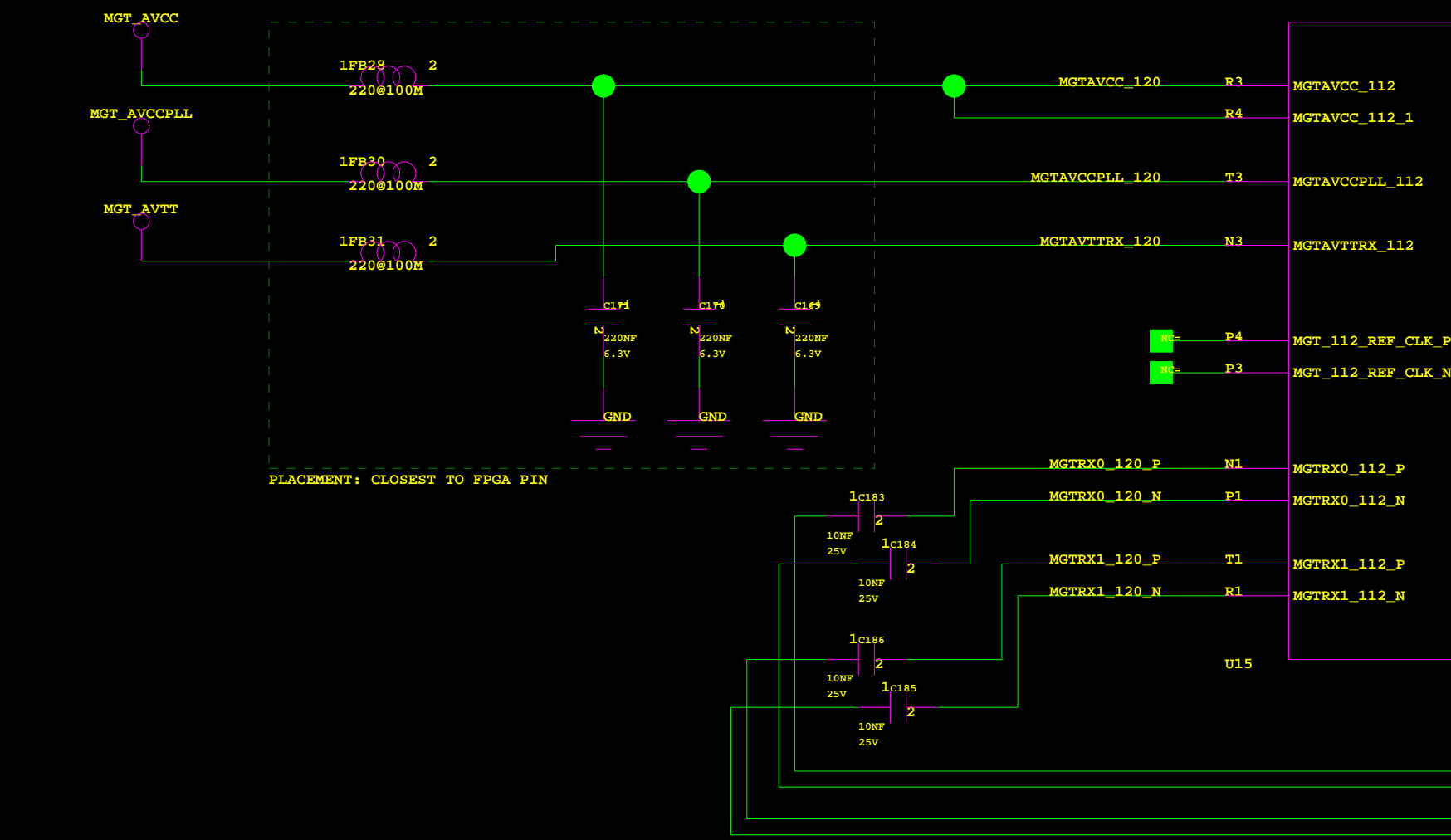
E BAUERMEISTER

SHEET

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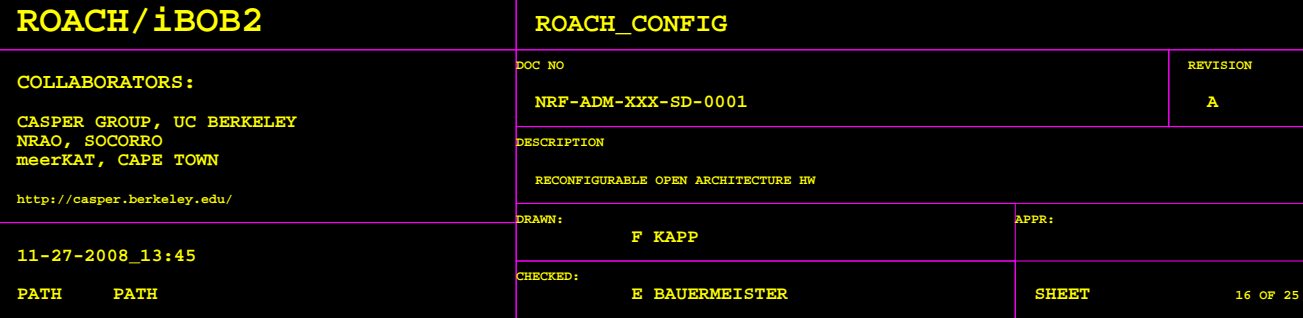
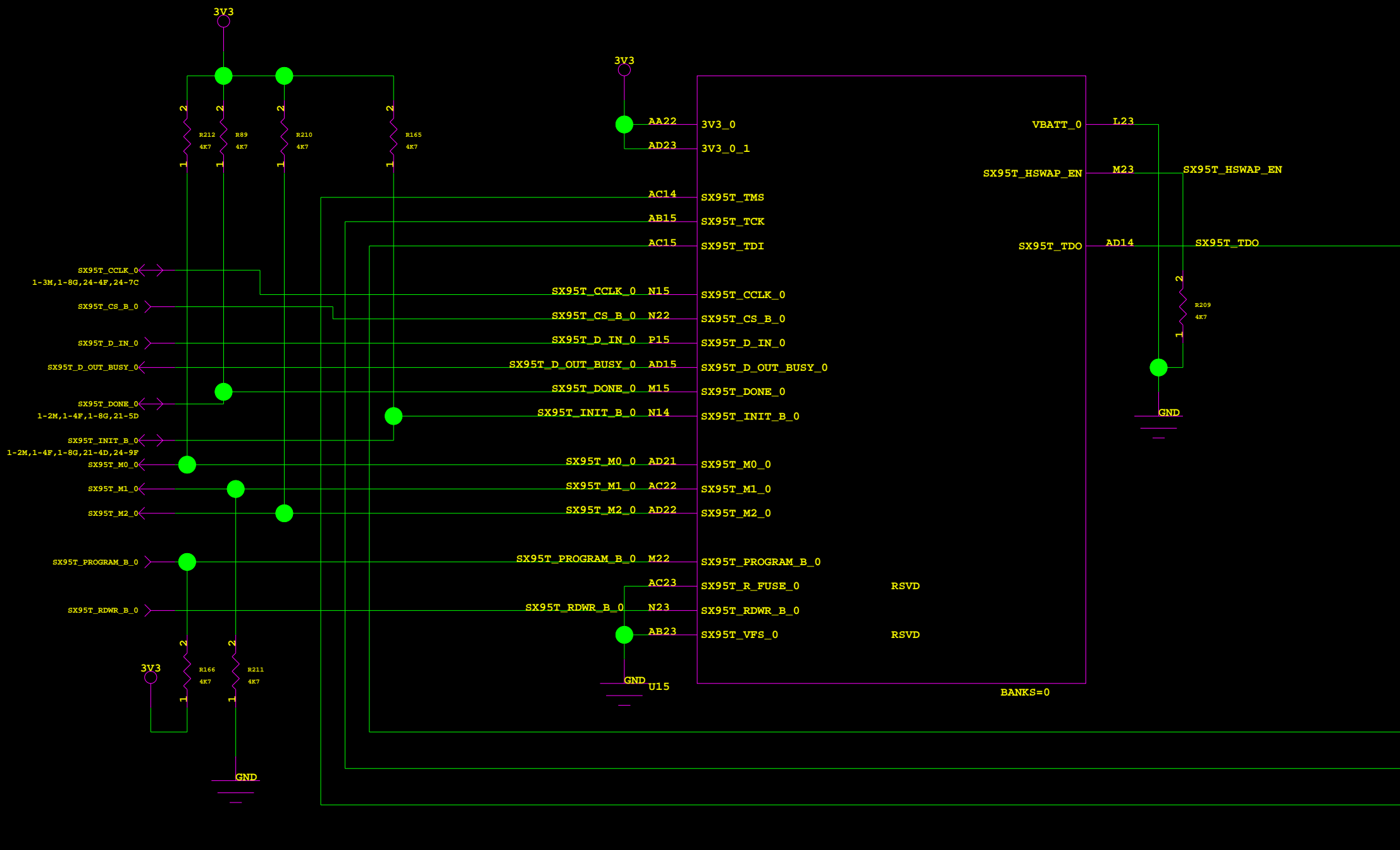


ROACH/iBOB2				ROACH_TRANSCEIVERS_PSV			
COLLABORATORS: CALIPER GROUP, UC BERKELEY NRAO, SOCCORRO MEERKAT, CAPE TOWN http://camper.berkeley.edu/ 11-27-2008 13:45 PATH PATH				DOC NO:		REVISION:	
				NRF-ADM-KXX-GD-0001		A	
				DESCRIPTION:			
				RECONFIGURABLE OPEN ARCHITECTURE SW			
				DATE:		APP:	
				F KAPP			
CHECKED:				E BAUERMEISTER		SHEET	
						10 OF 25	



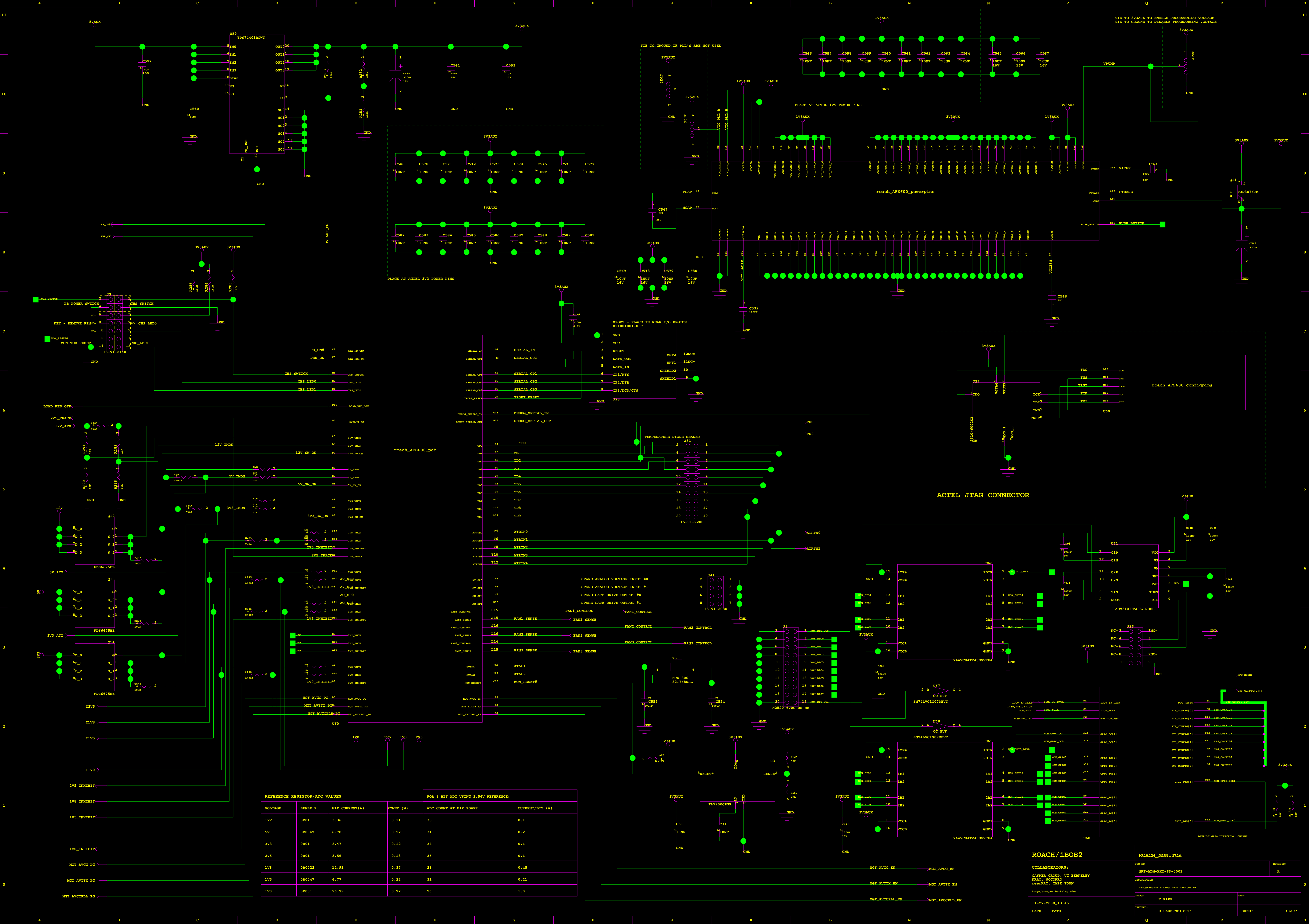
ROACH/iBOB2			ROACH_TRANSCEIVERS2_3		
COLLABORATORS: CALIPER GROUP, UC BERKELEY NRAO, SOCCORBO meerkat, CAPE TOWN http://calper.berkeley.edu/			DOC NO: NRF-ADM-KXX-GD-0001 DESCRIPTION: RECONFIGURABLE OPEN ARCHITECTURE HW	REVISION: A	
11-27-2008_13:45 PATH PATH			DRAWN: F KAPP CHECKED: B BAUERMEISTER	APPV: SHEET	9 OF 25

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
Input	101		Input (TCK)
Slave SelectMAP	110	8, 16, 32	Input
Slave Serial	111	1	Input





ROACH/iBOB2		ROACH_PPC_CPLD	
COLLABORATORS:		DOC NO:	REVISION
CLASPER GROUP, UC BERKELEY NRAD, SOCOMBO MEEFAT, CAPE TOWN		NRP-ADM-XXX-ID-0001	A
http://casper.berkeley.edu/		DESCRIPTION:	
		RECONFIGURABLE OPEN ARCHITECTURE SW	
11-27-2008 13:45		NAME:	APP:
PATH PATH		F KAPP	
		CHECKED:	DATE
		W BAUMEISTER	24 OF 25



REFERENCE RESISTOR/ADC VALUES				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/iBOB2		ROACH_MONITOR	
COLLABORATORS:		DOC NO	REVISION
CAUPER GROUP, UC BERKELEY		NRF-ADM-KIX-00-0001	A
DESCRIPTION		DESCRIPTION	
NONPROGRAMMABLE OPEN ARCHITECTURE HW		NONPROGRAMMABLE OPEN ARCHITECTURE HW	
http://cauper.berkeley.edu/		DATE:	APP:
11-27-2008.13:45		11-27-2008.13:45	
PATH	PATH	CHECKED:	SHEET
		B BAUERMEISTER	2 of 25