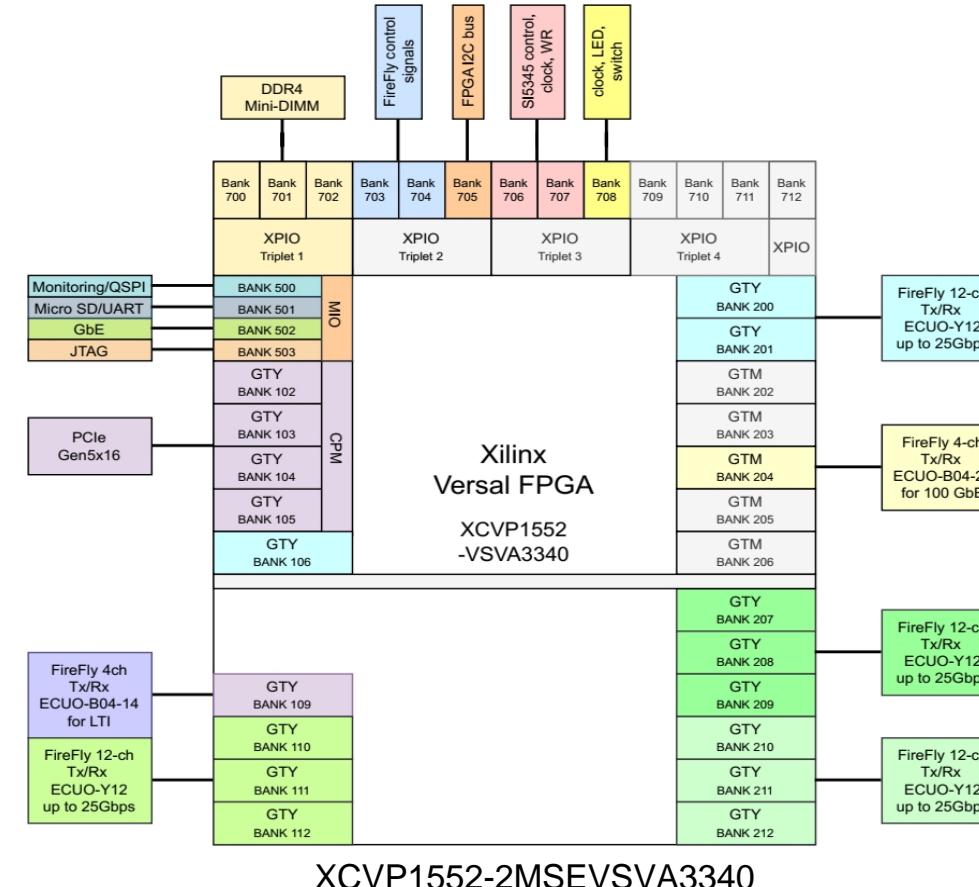


FELIX Prototype FLX-155

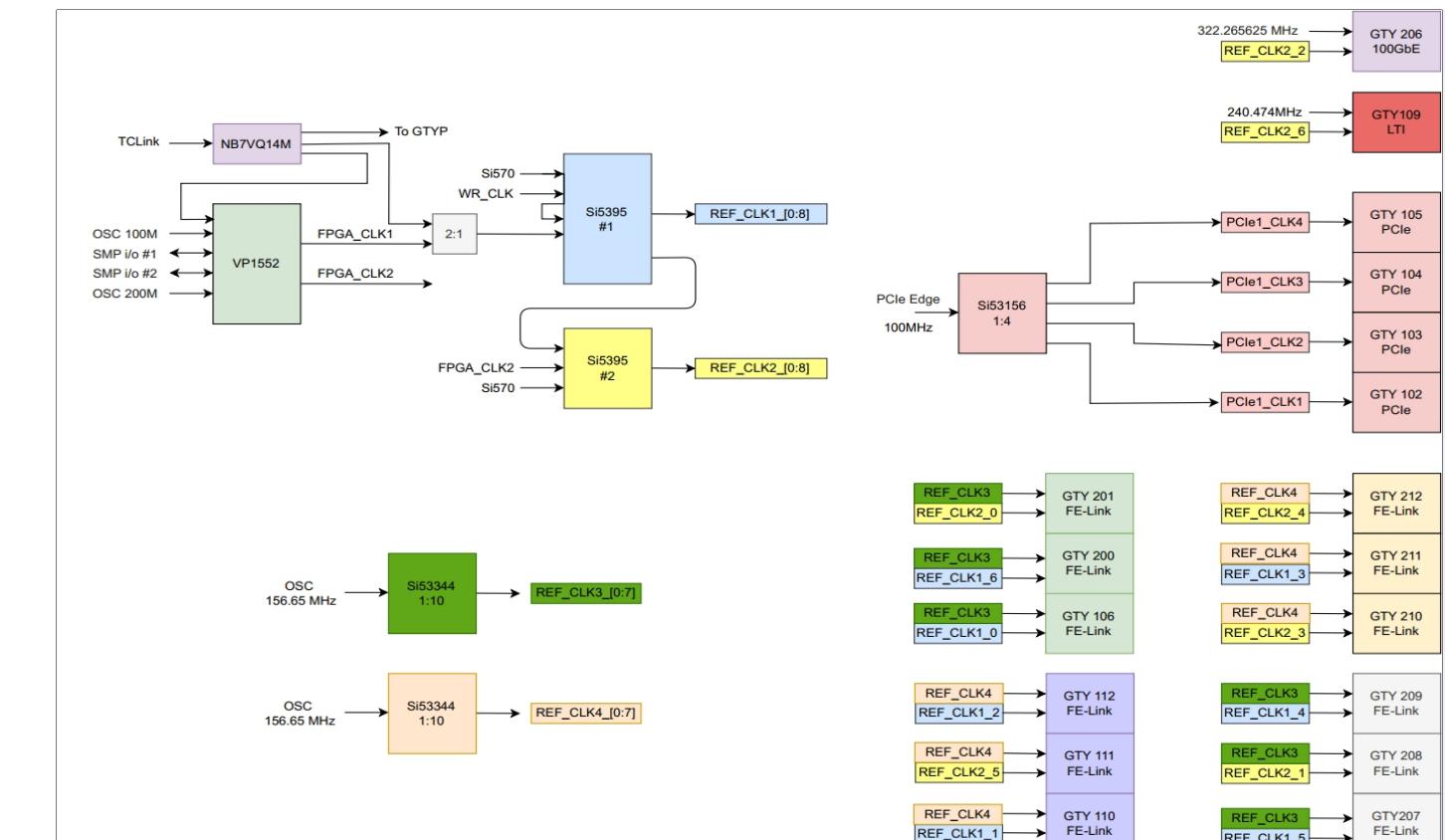
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- Page 3: GTYP banks 109 - 112
- Page 4: GTYP banks 106, 200, 201
- Page 5: GTM banks 202 - 206
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- Page 52 : IO Expander
- Page 53 : Mechanical Components

Hao Xu (haoxu@bnl.gov)
Brookhaven National Laboratory
4/18/2024

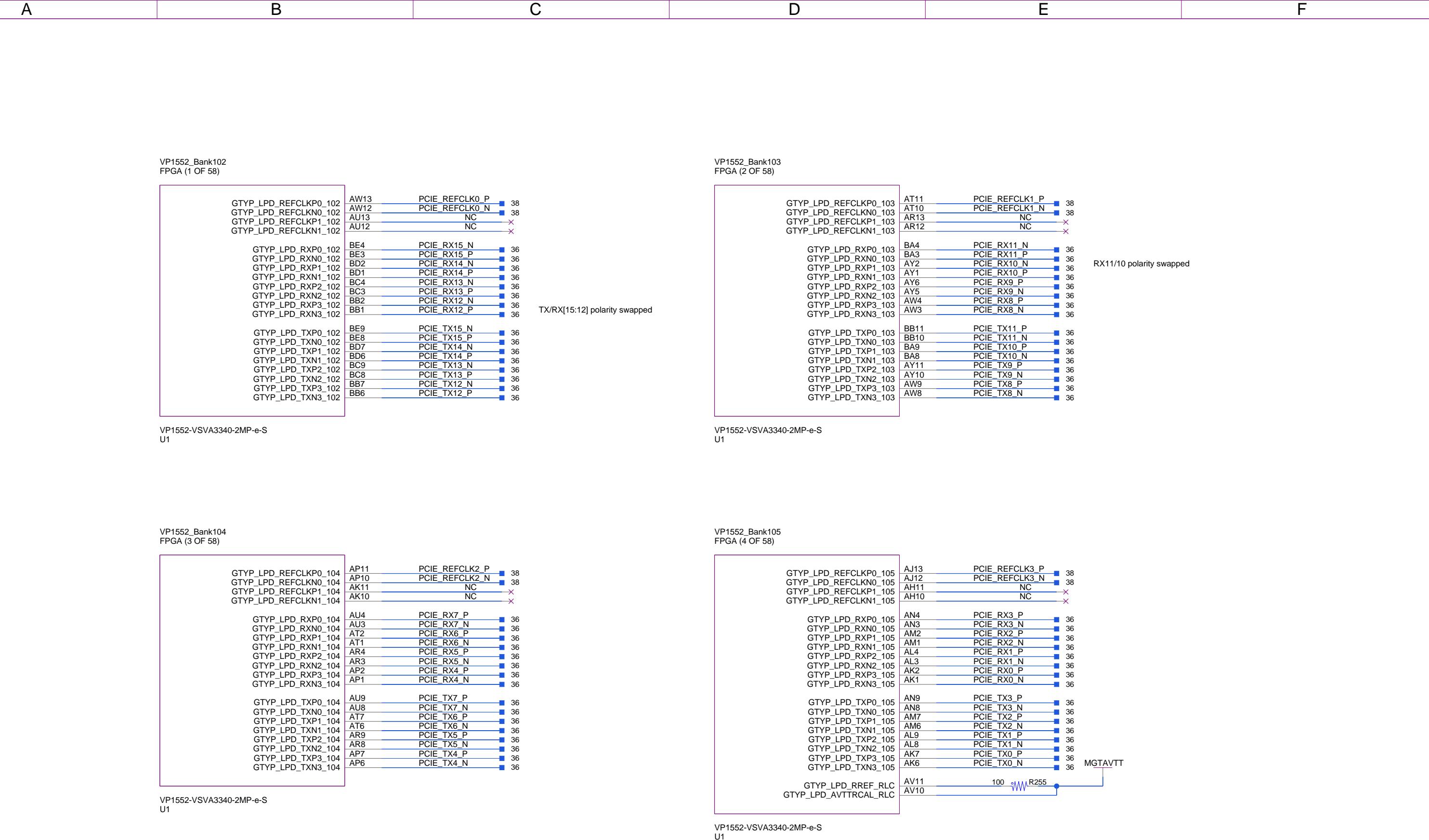


XCVP1552-2MSEVSA3340



Clock Distribution

COMPANY
BROOKHAVEN NATIONAL LABORATORY
TITLE
FLX155_V1
1_INDEX
SIZE B REV 1 SHEET 1 OF 53
DRAWN Hao Xu DATE 18/04/2024:08:52

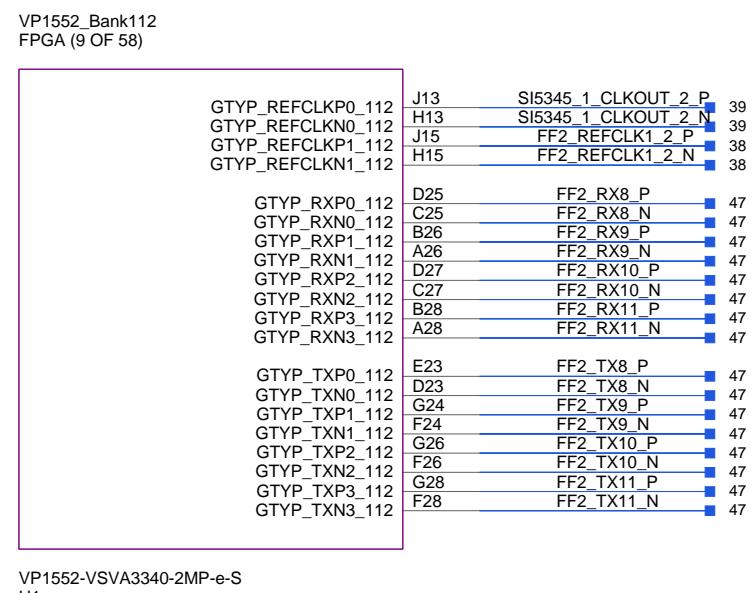
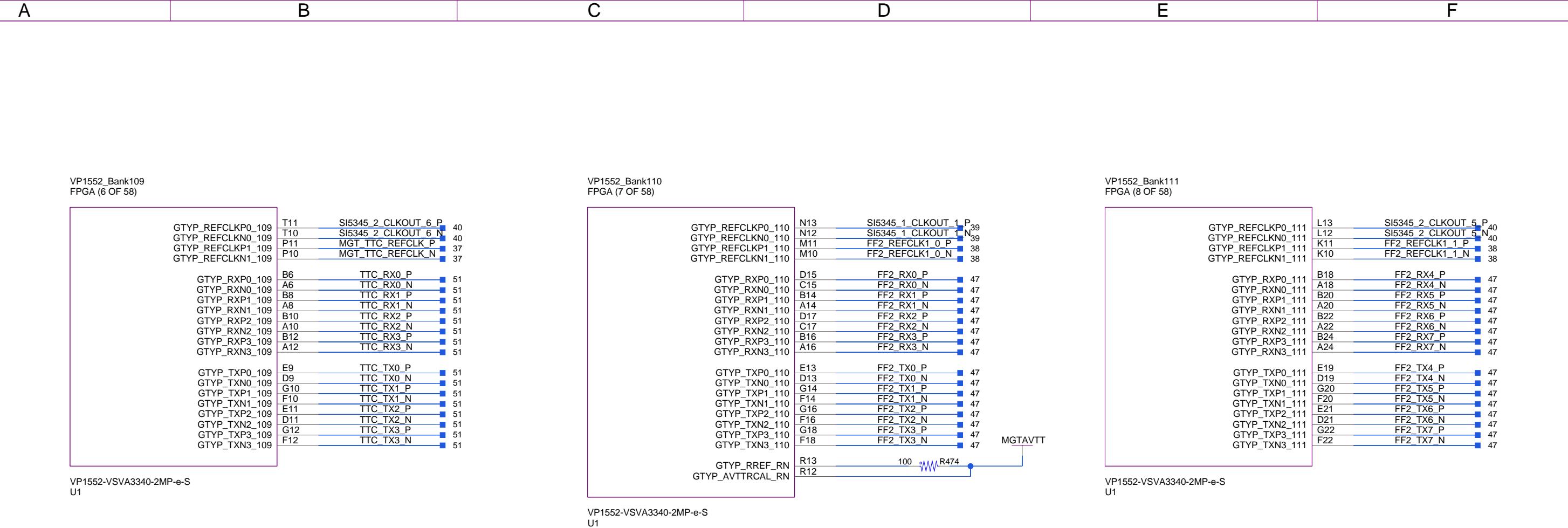


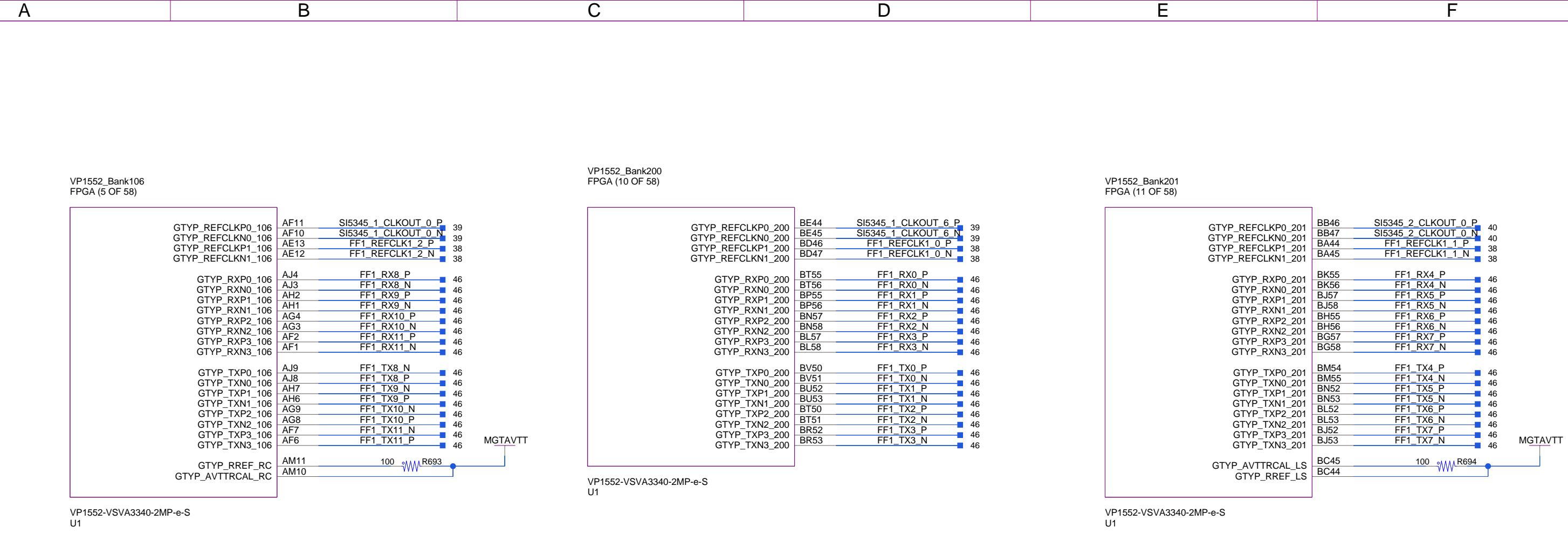
COMPANY
BROOKHAVEN NATIONAL LABORATORY

TITLE
FLX155_V1

2_BANKS_102_103_104_105_GTYP

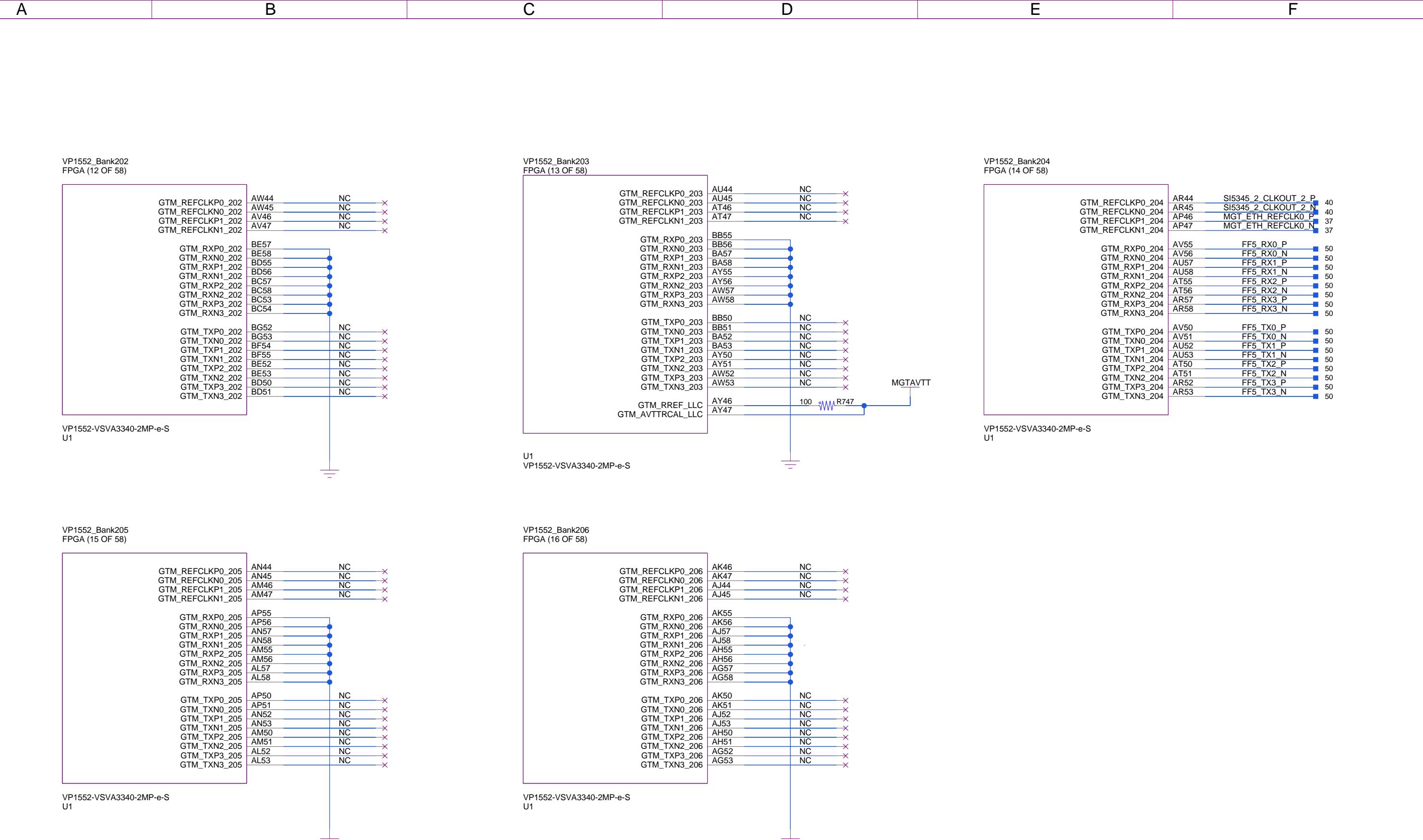
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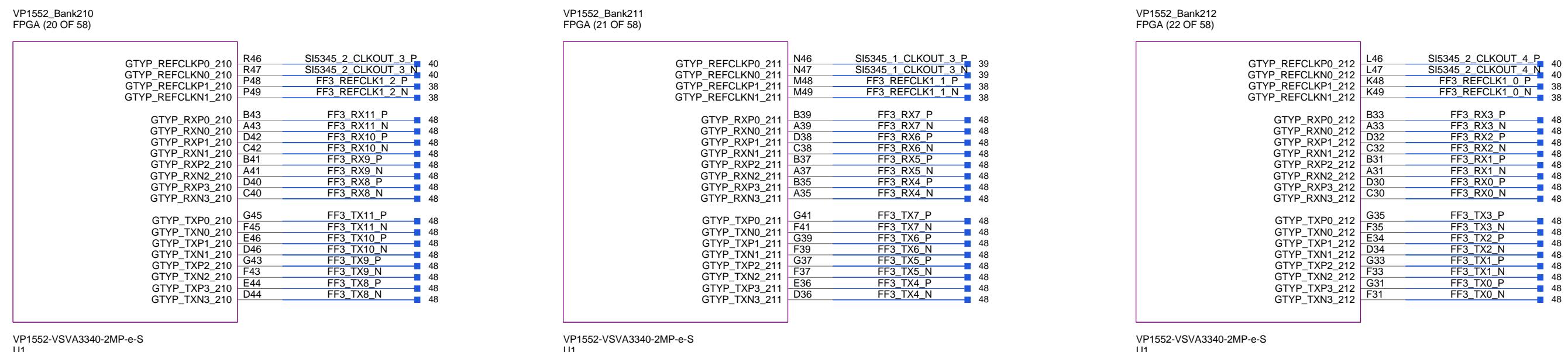
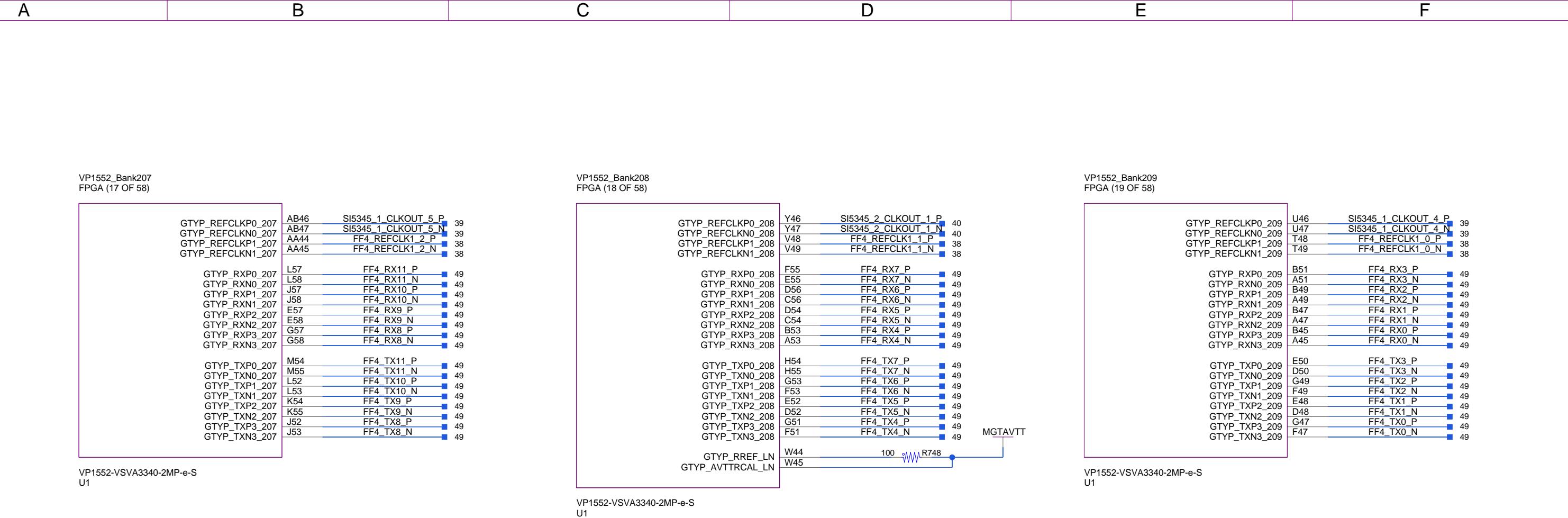


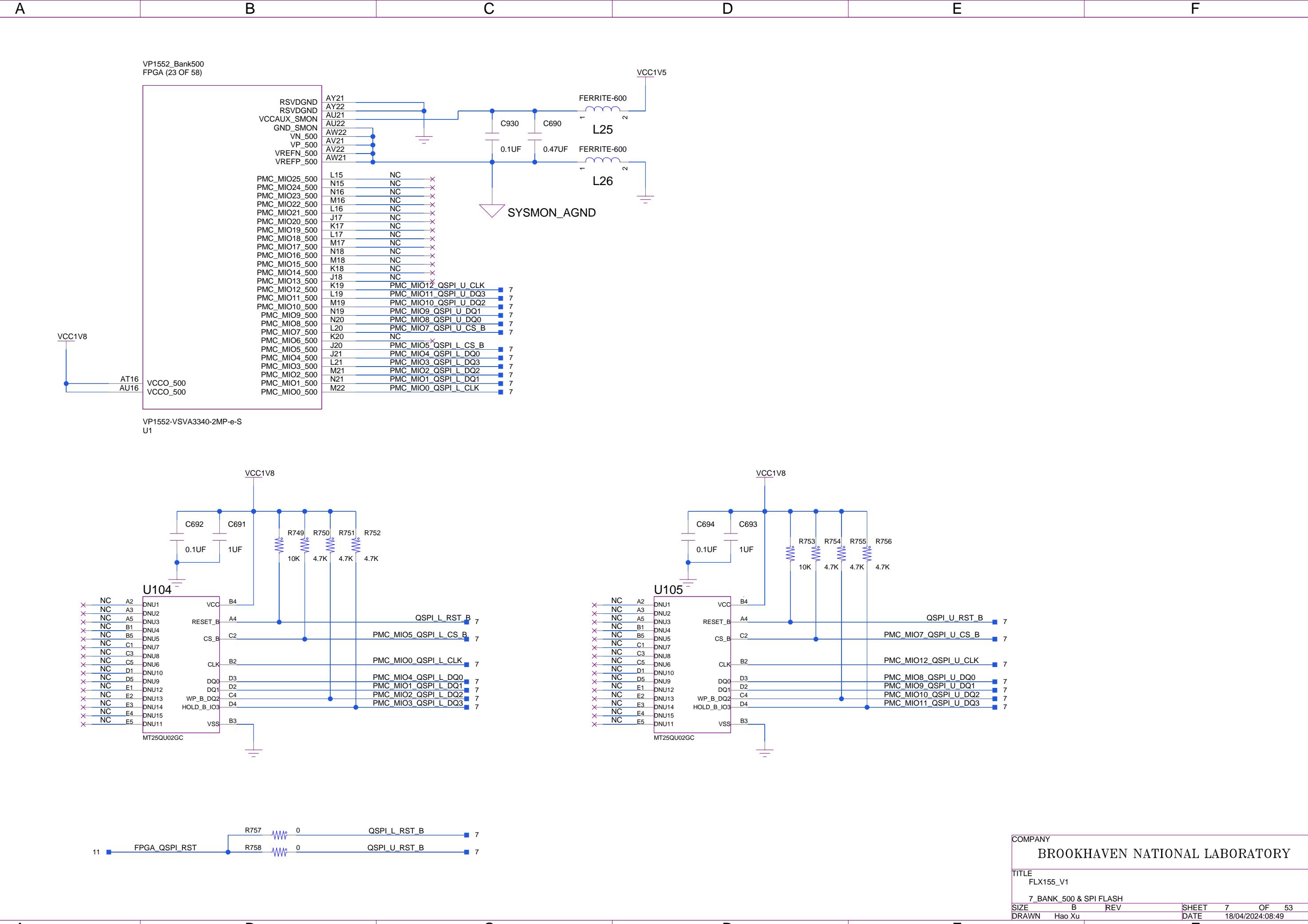


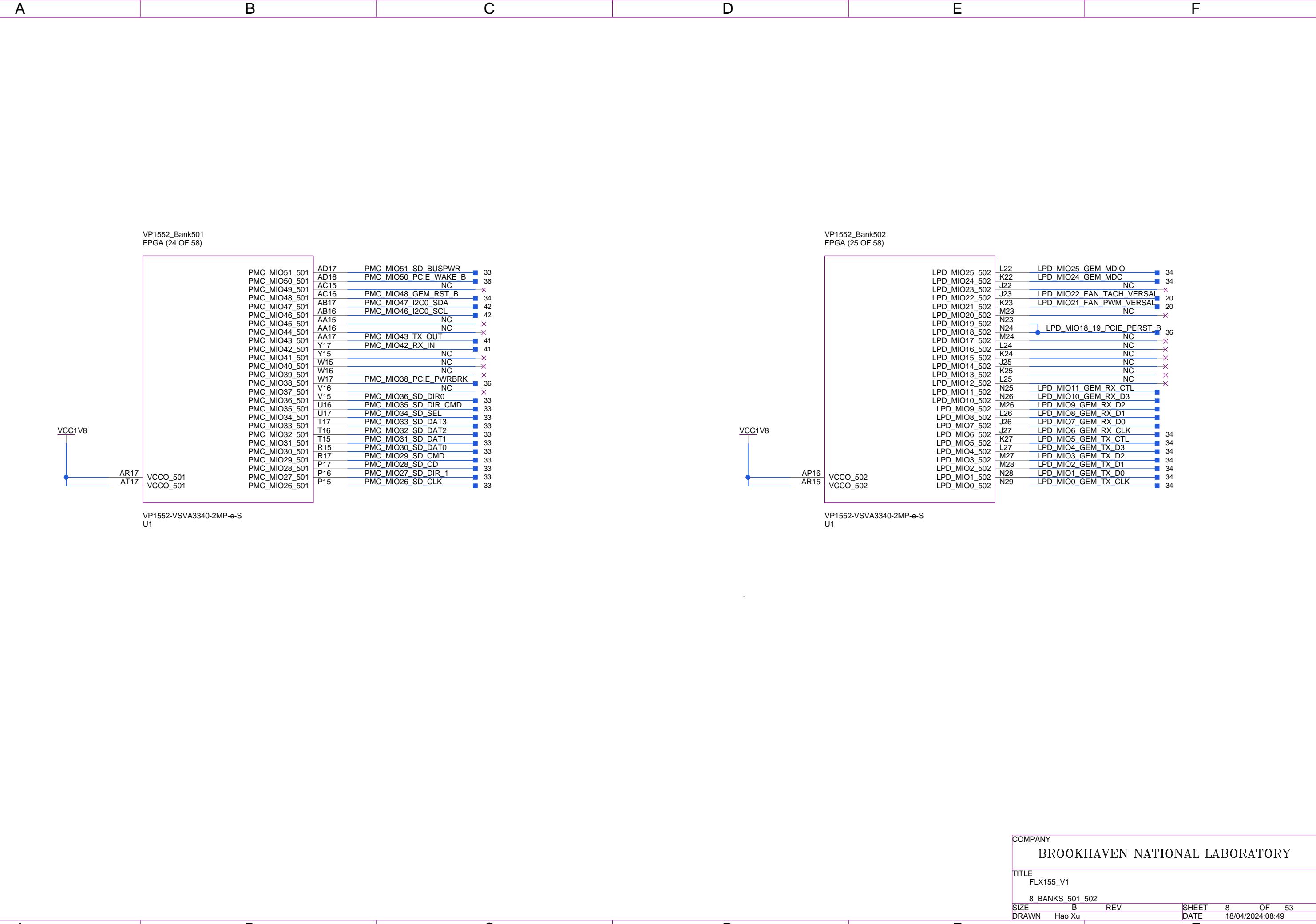
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TITLE	FLX155_V1		
4_BANKS_106_200_201_GTYP			
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DRAWN	Hao Xu	DATE	18/04/2024:08:49

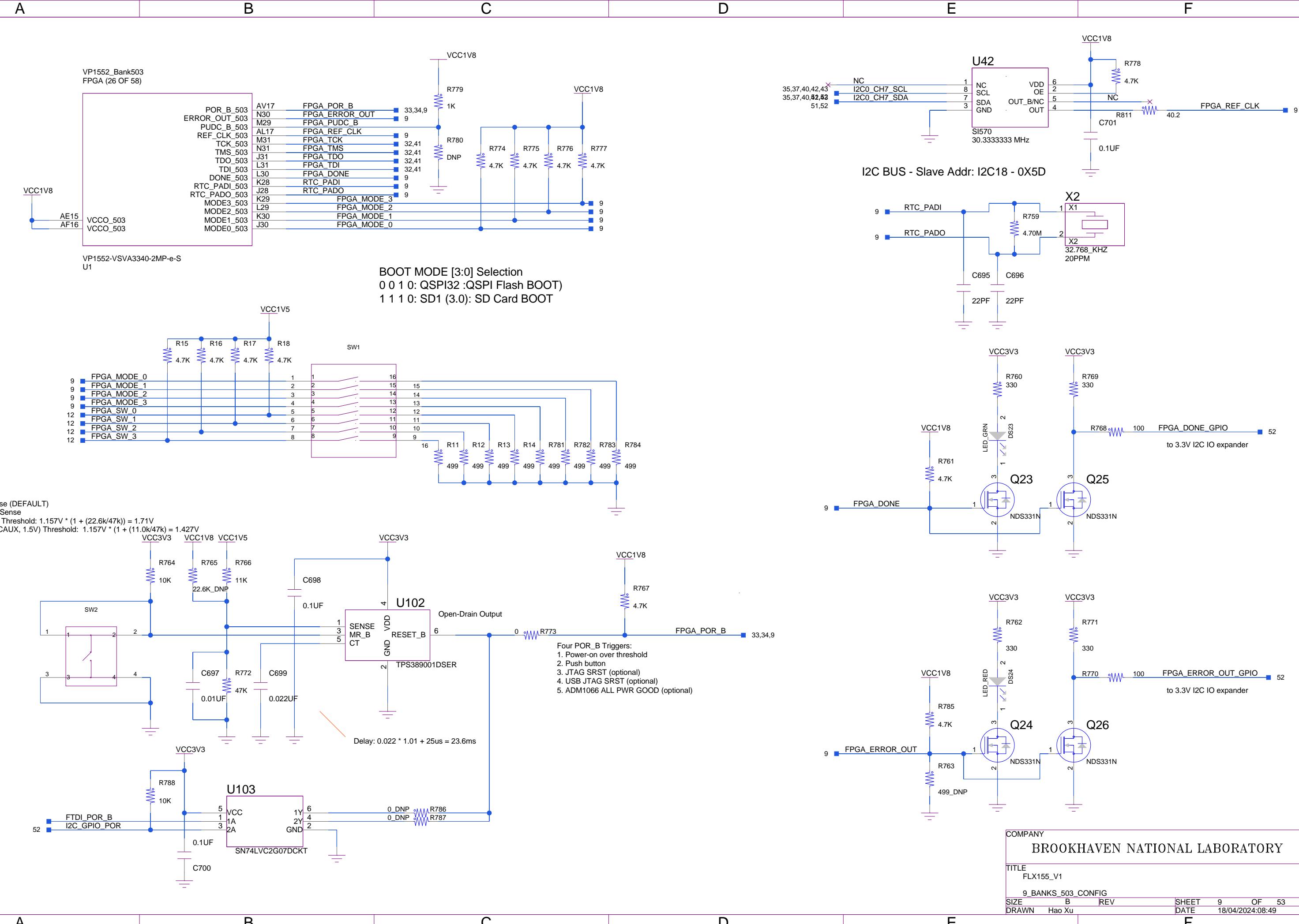
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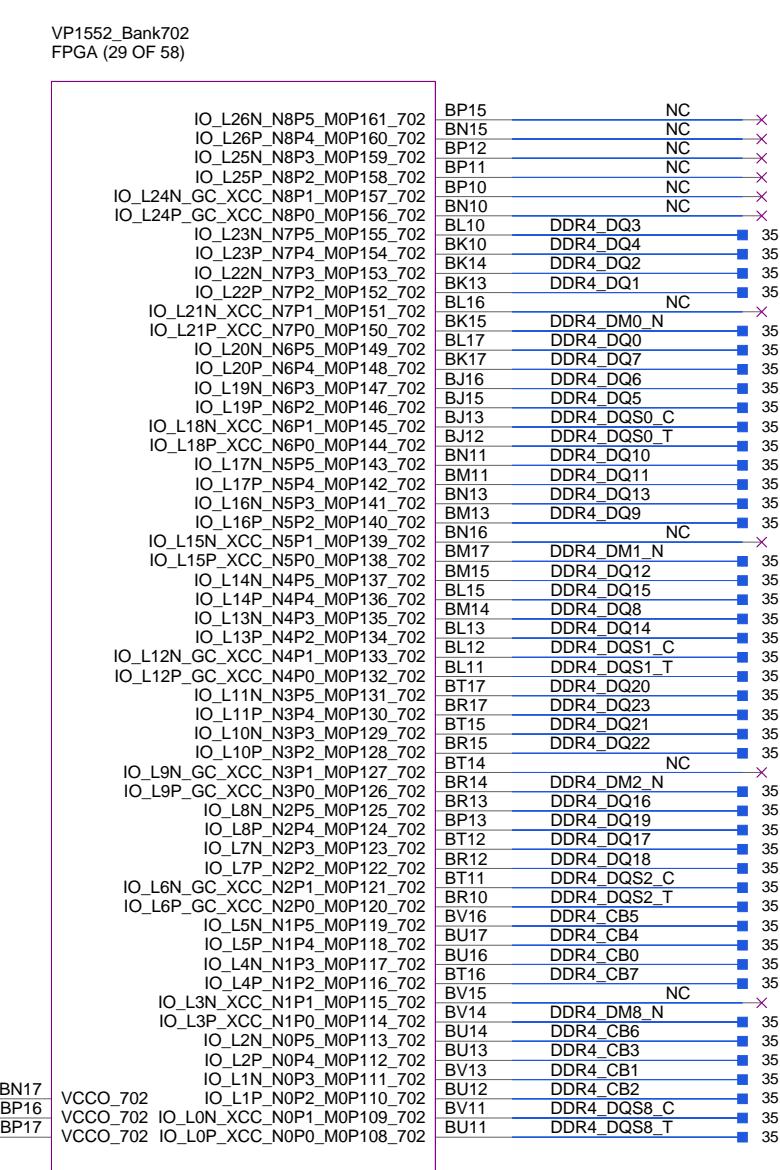
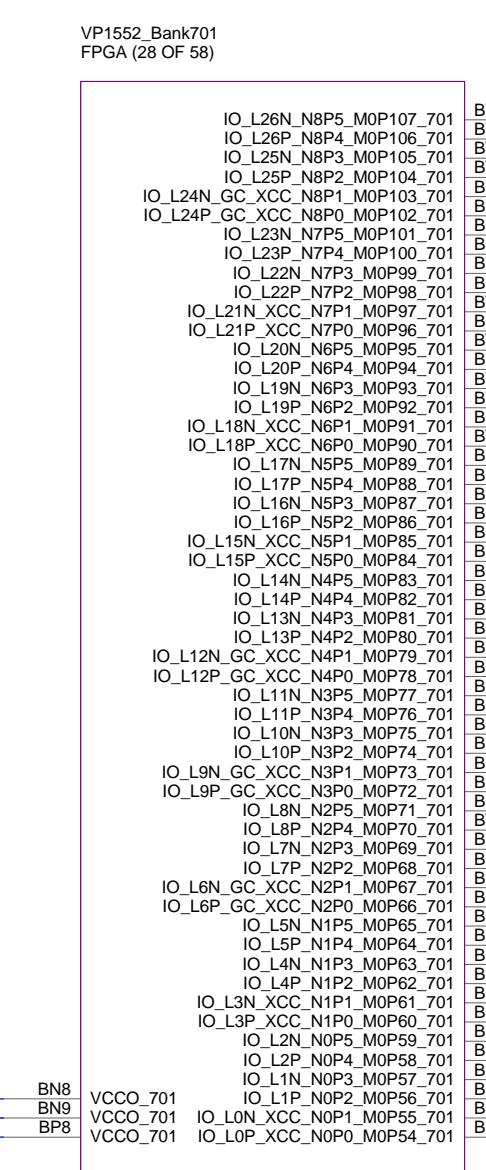
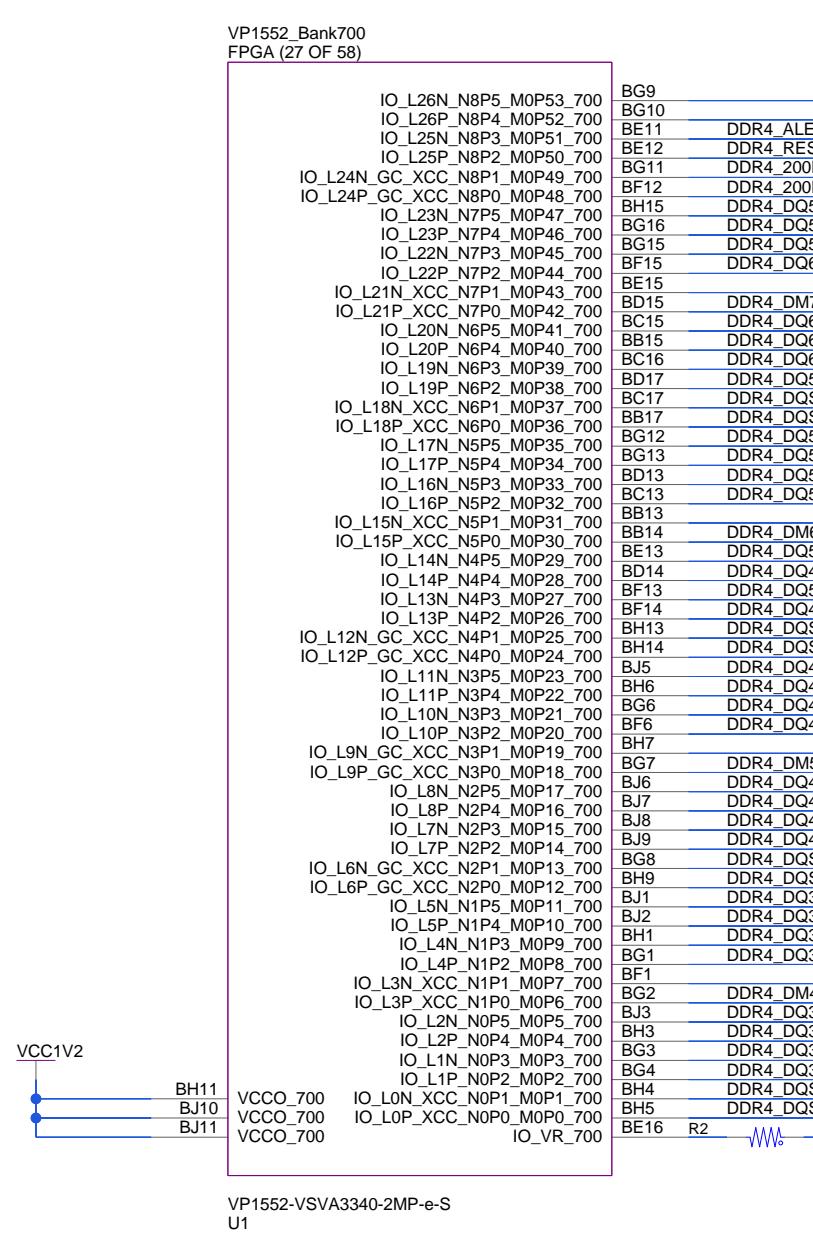


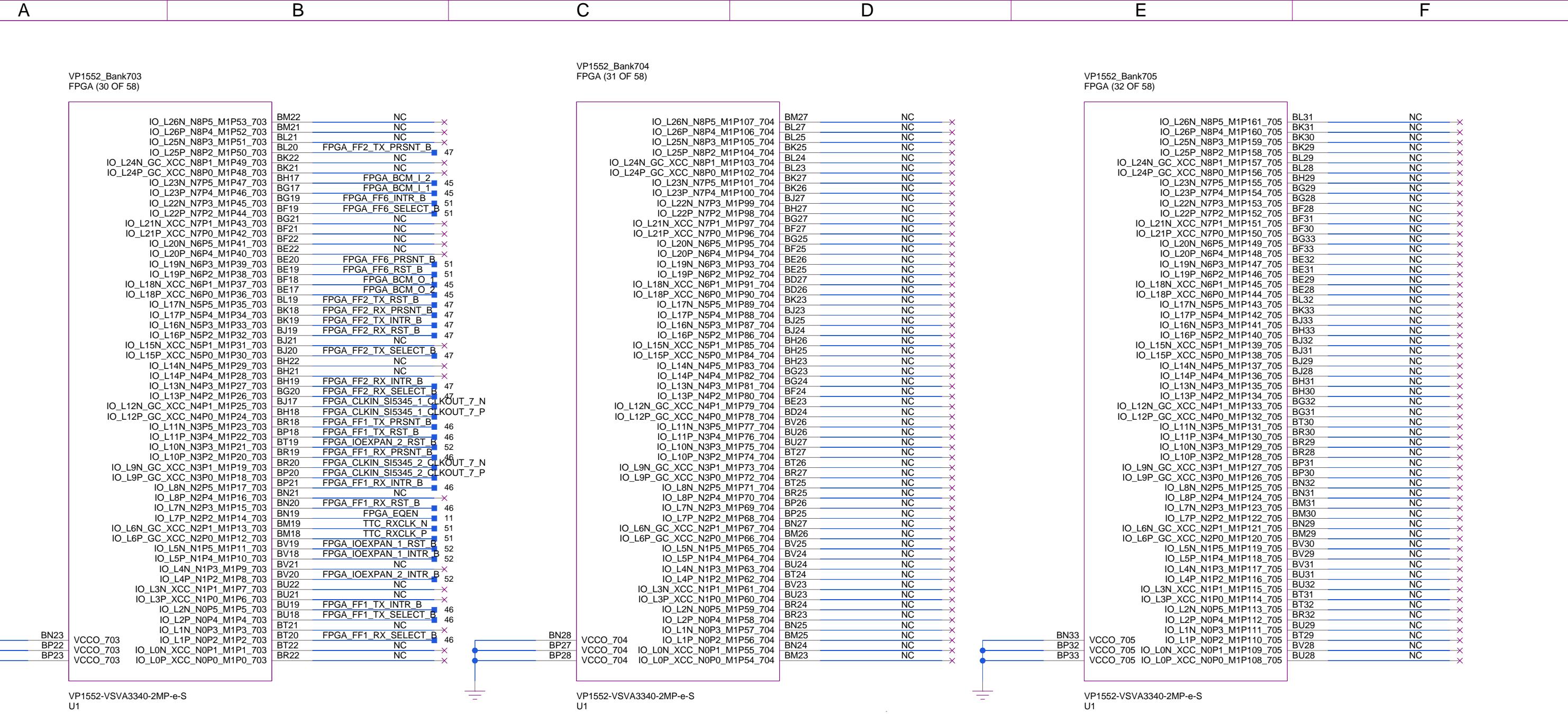


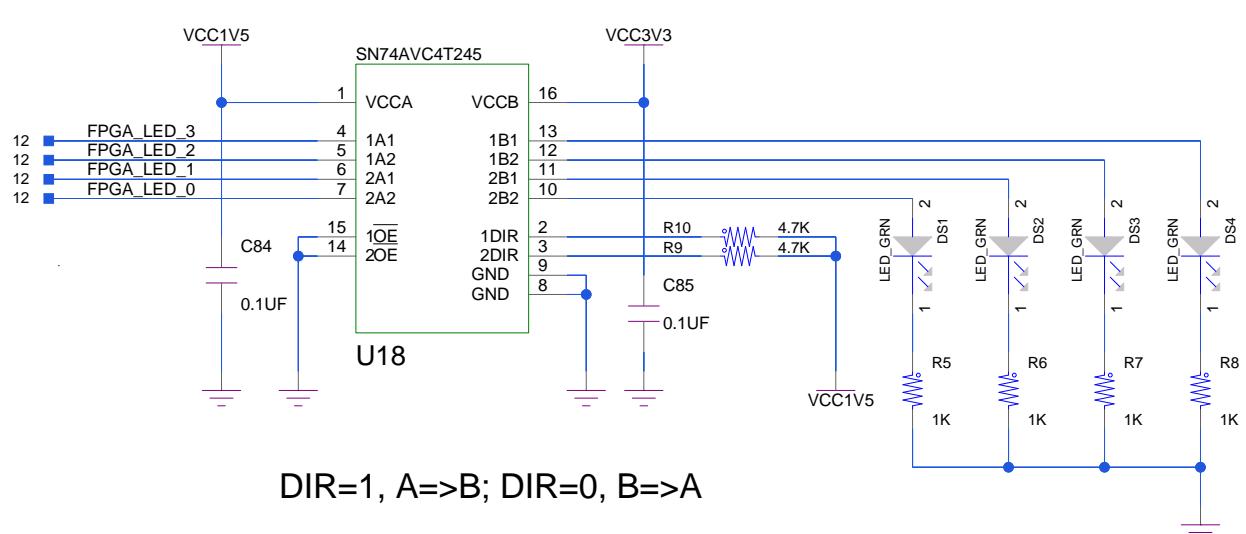
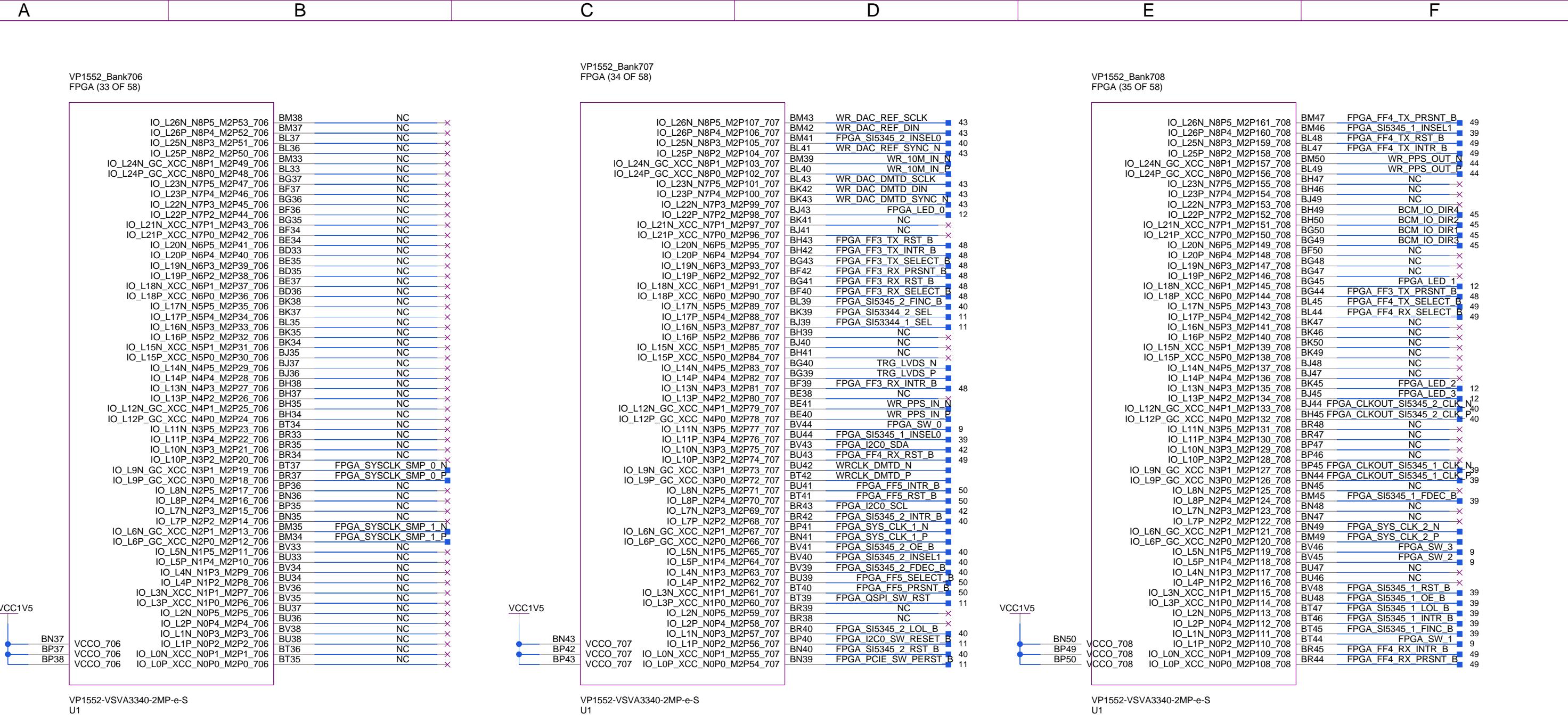


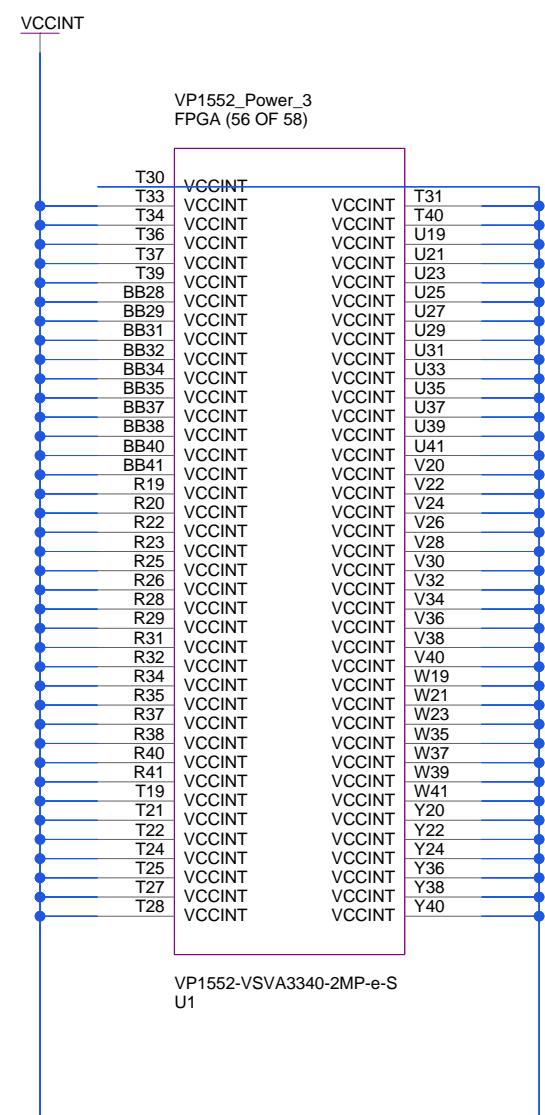
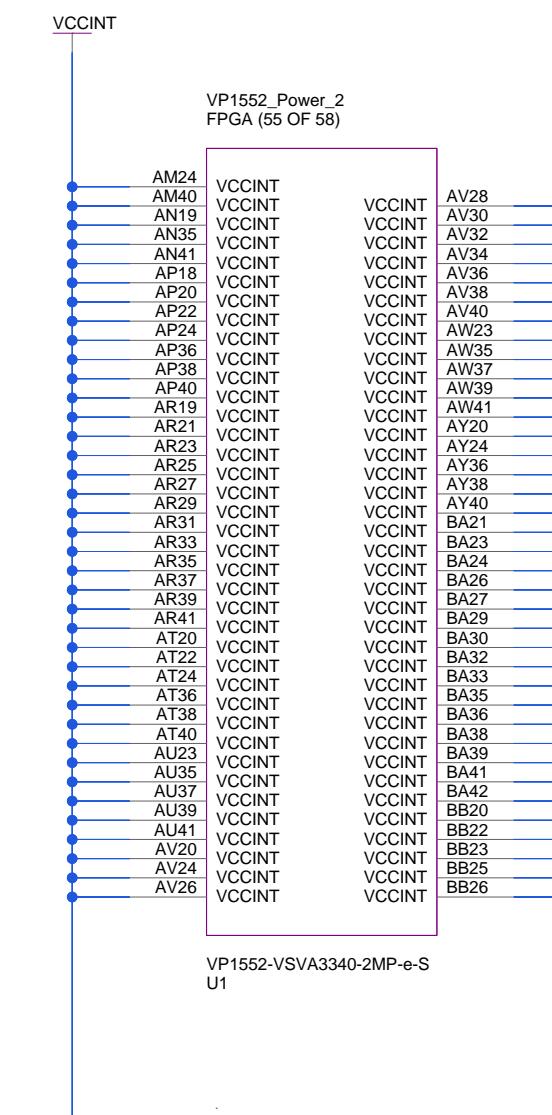
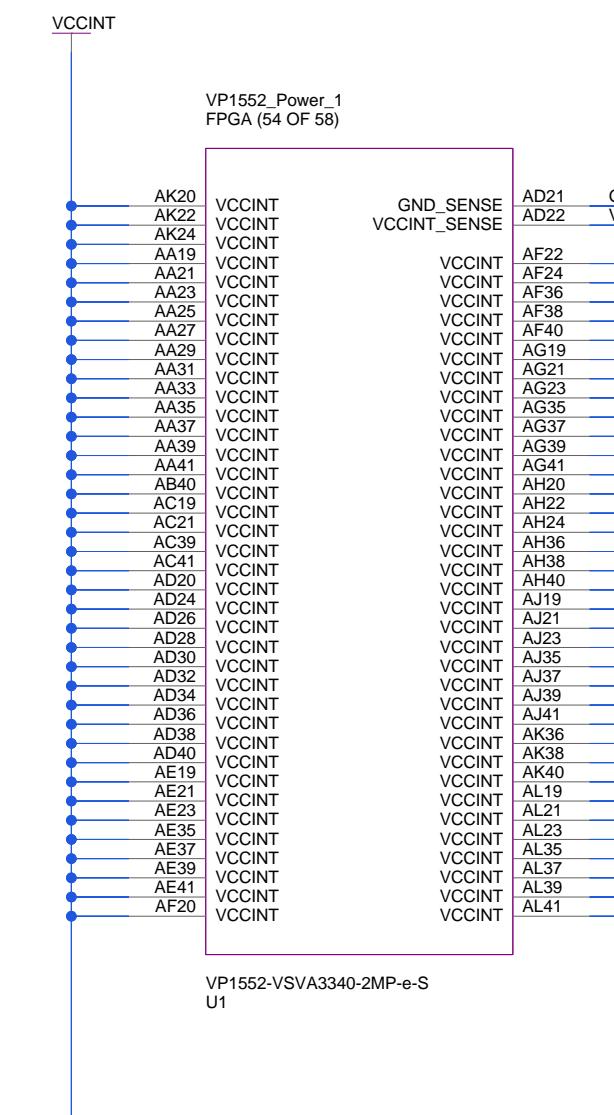
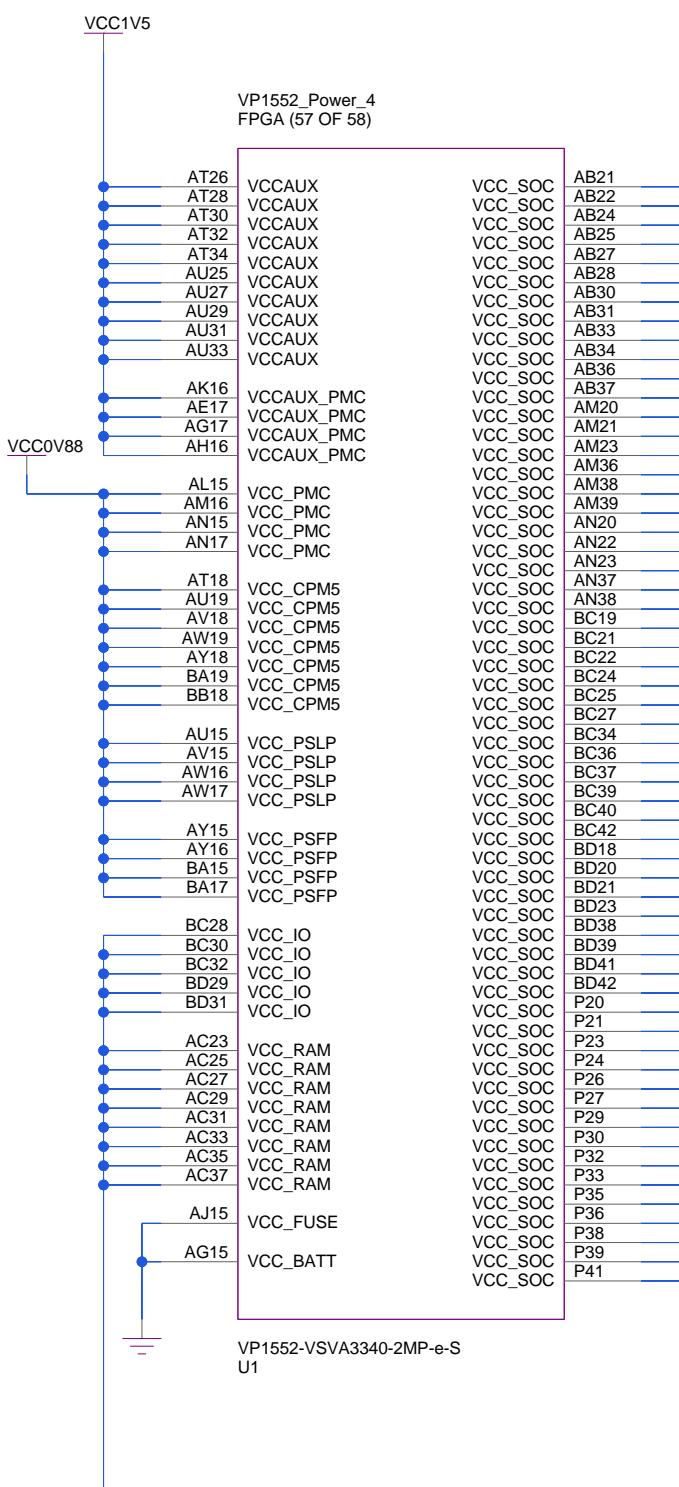


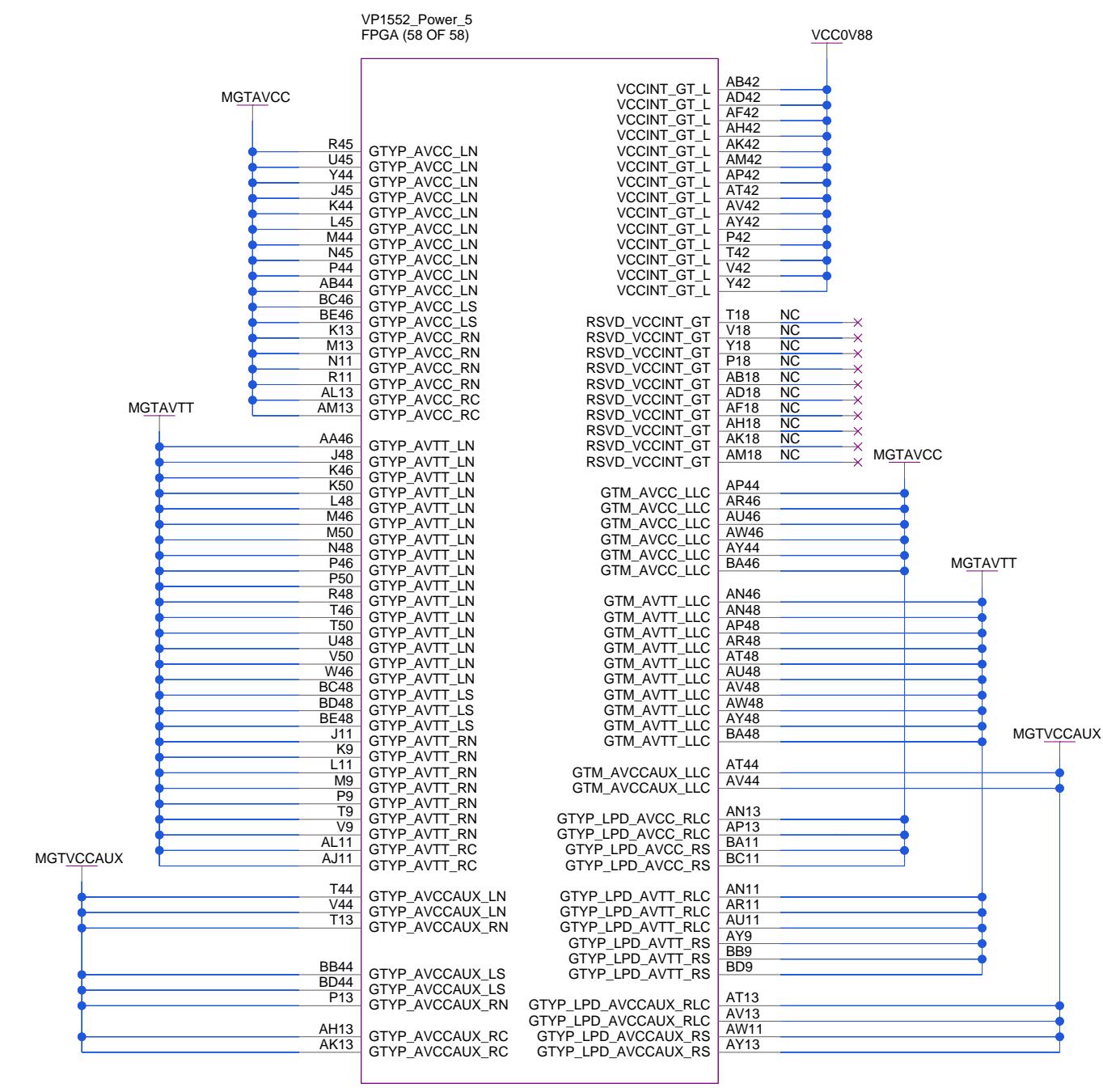






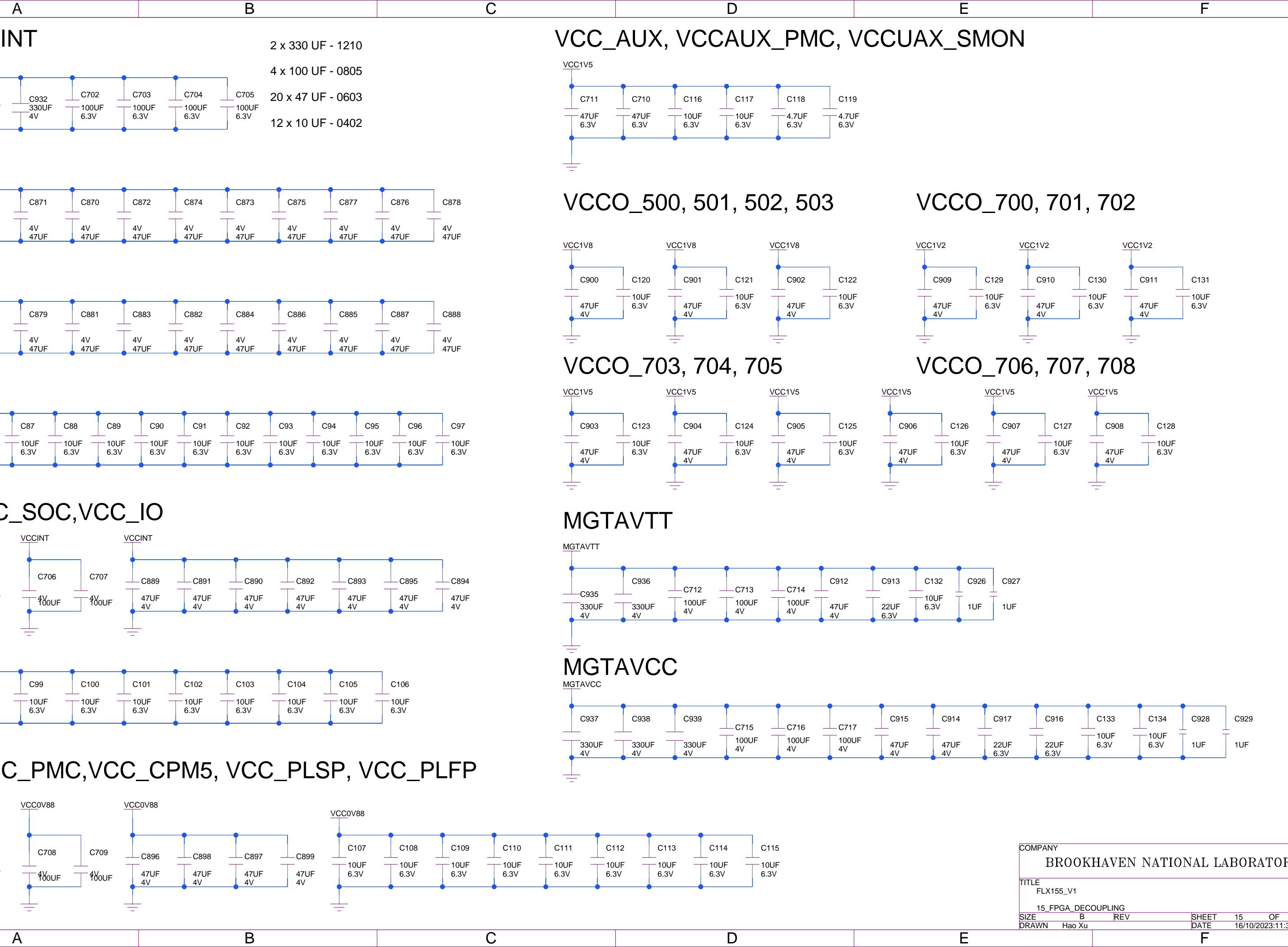


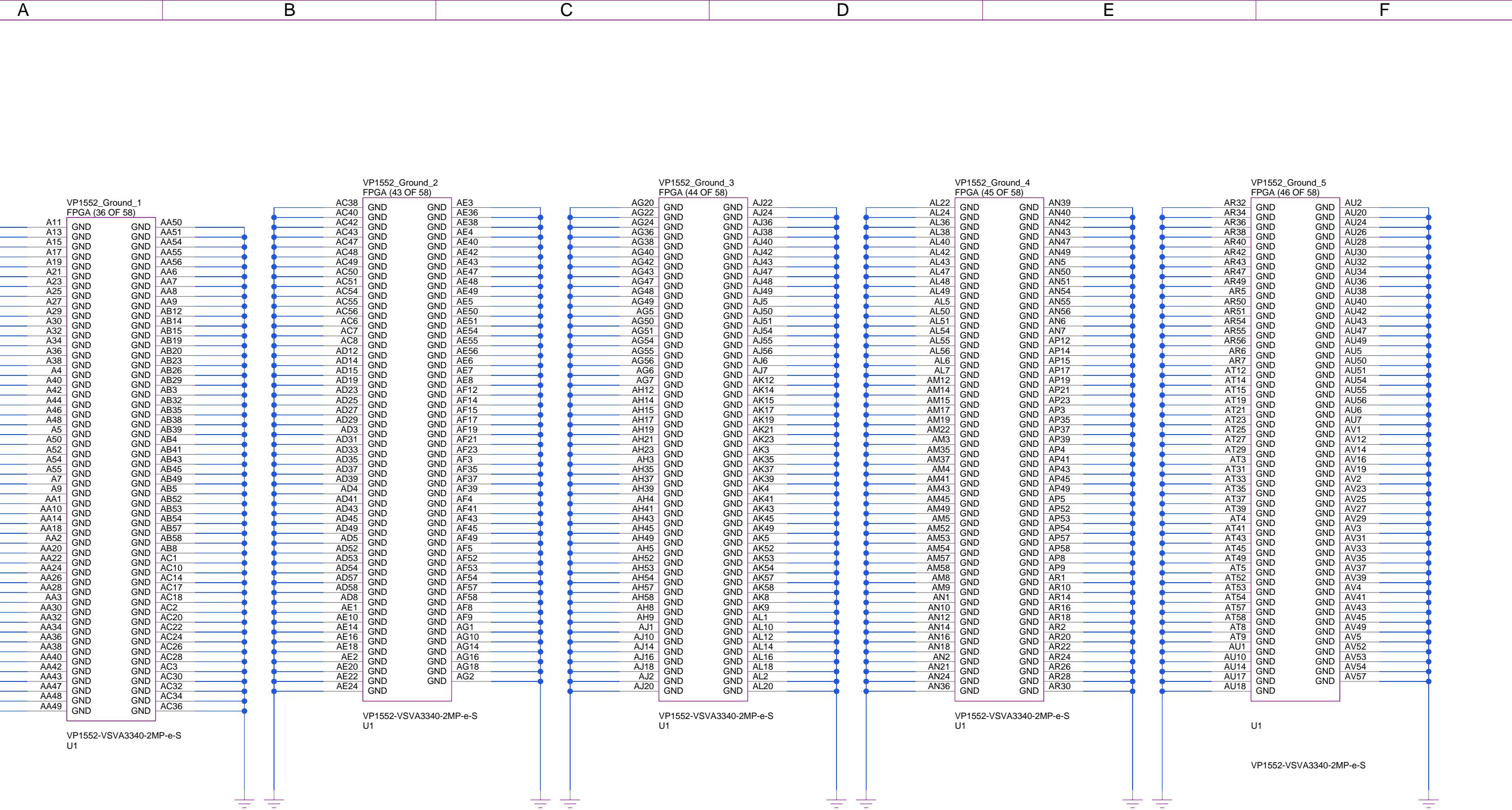


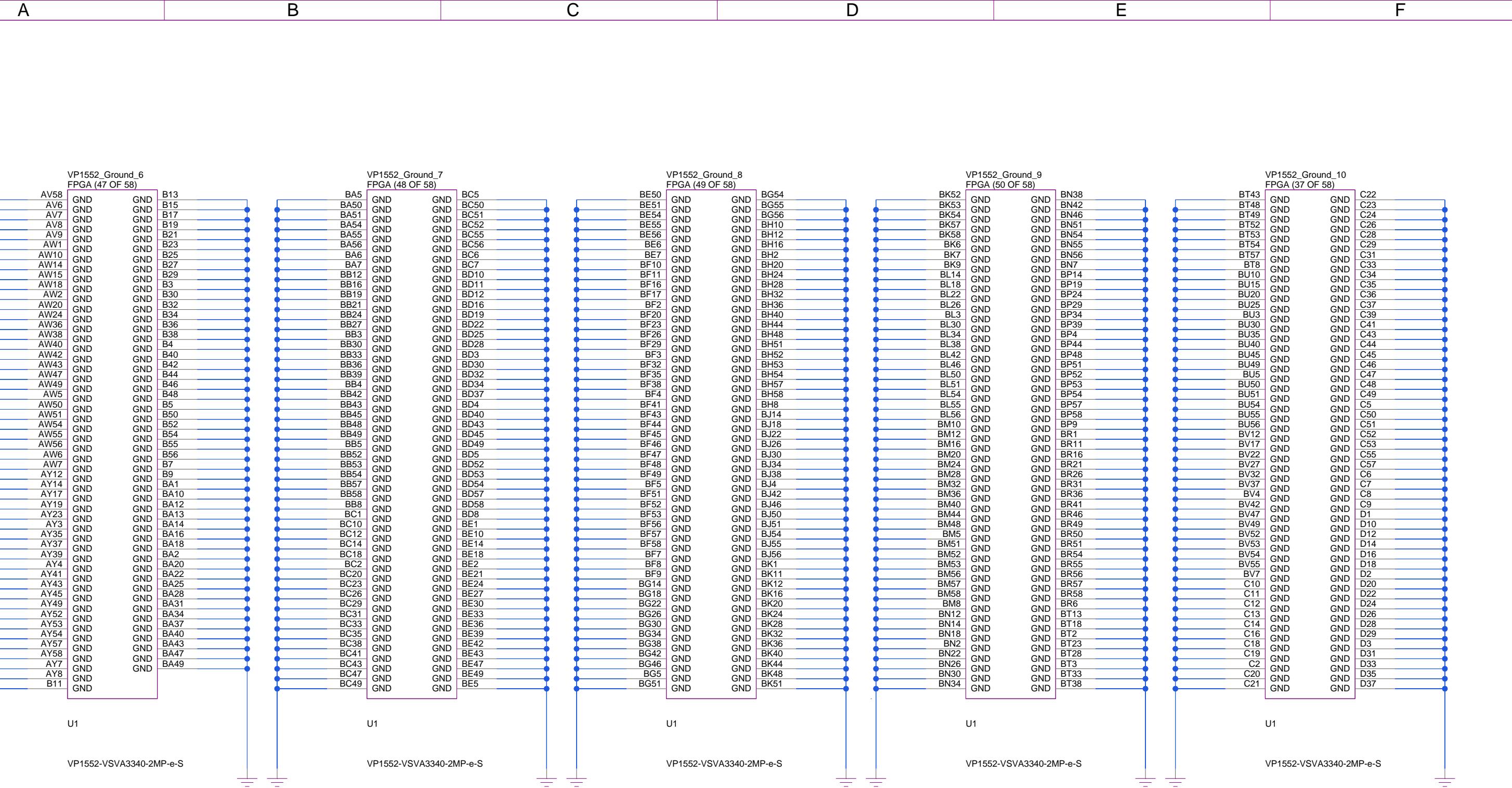


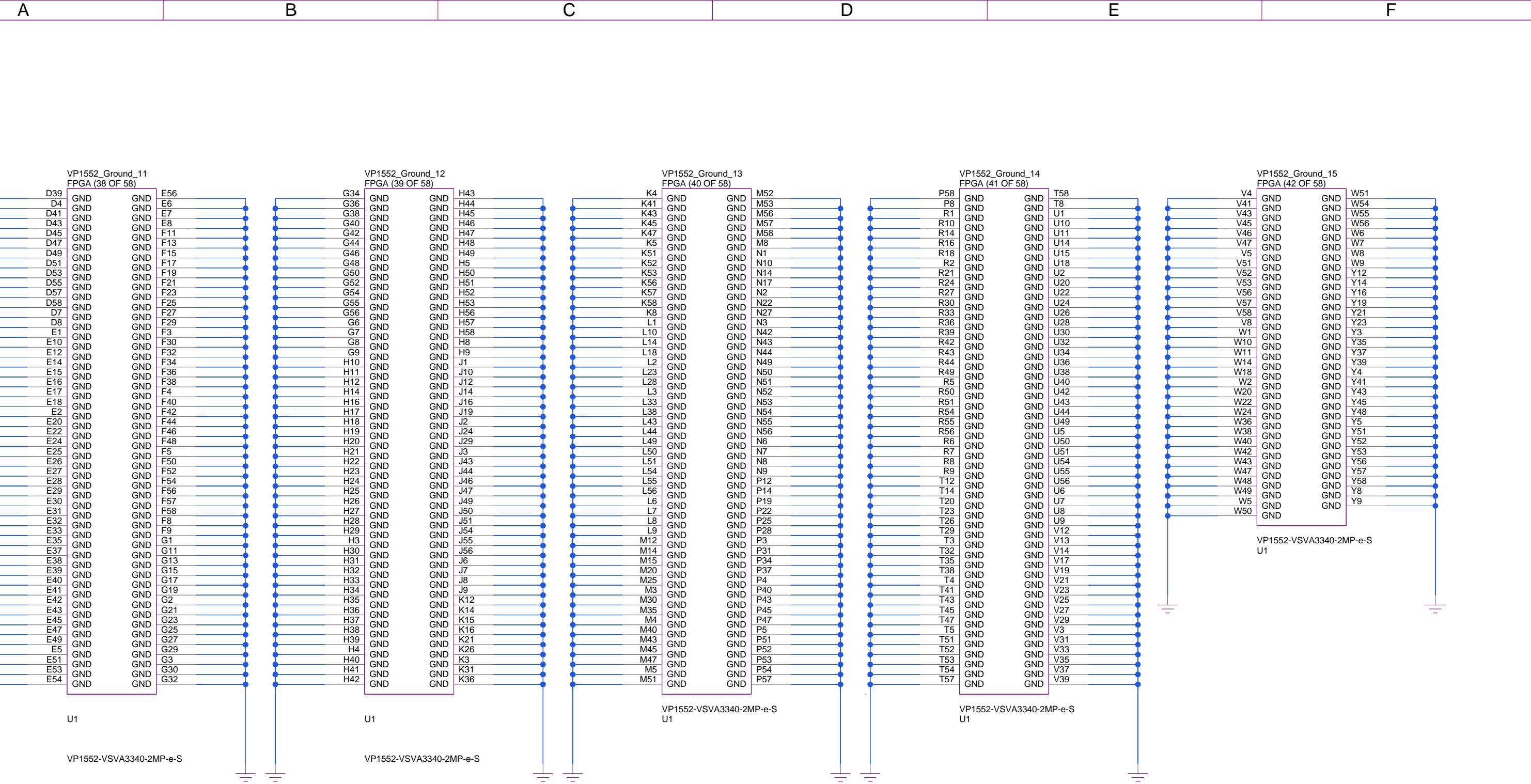
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U1

COMPANY	BROOKHAVEN NATIONAL LABORATORY					
TITLE	FLX155_V1					
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SIZE	B	REV	SHEET	14	OF	53
DRAWN	Hao Xu		DATE	13/03/2024:10:16		

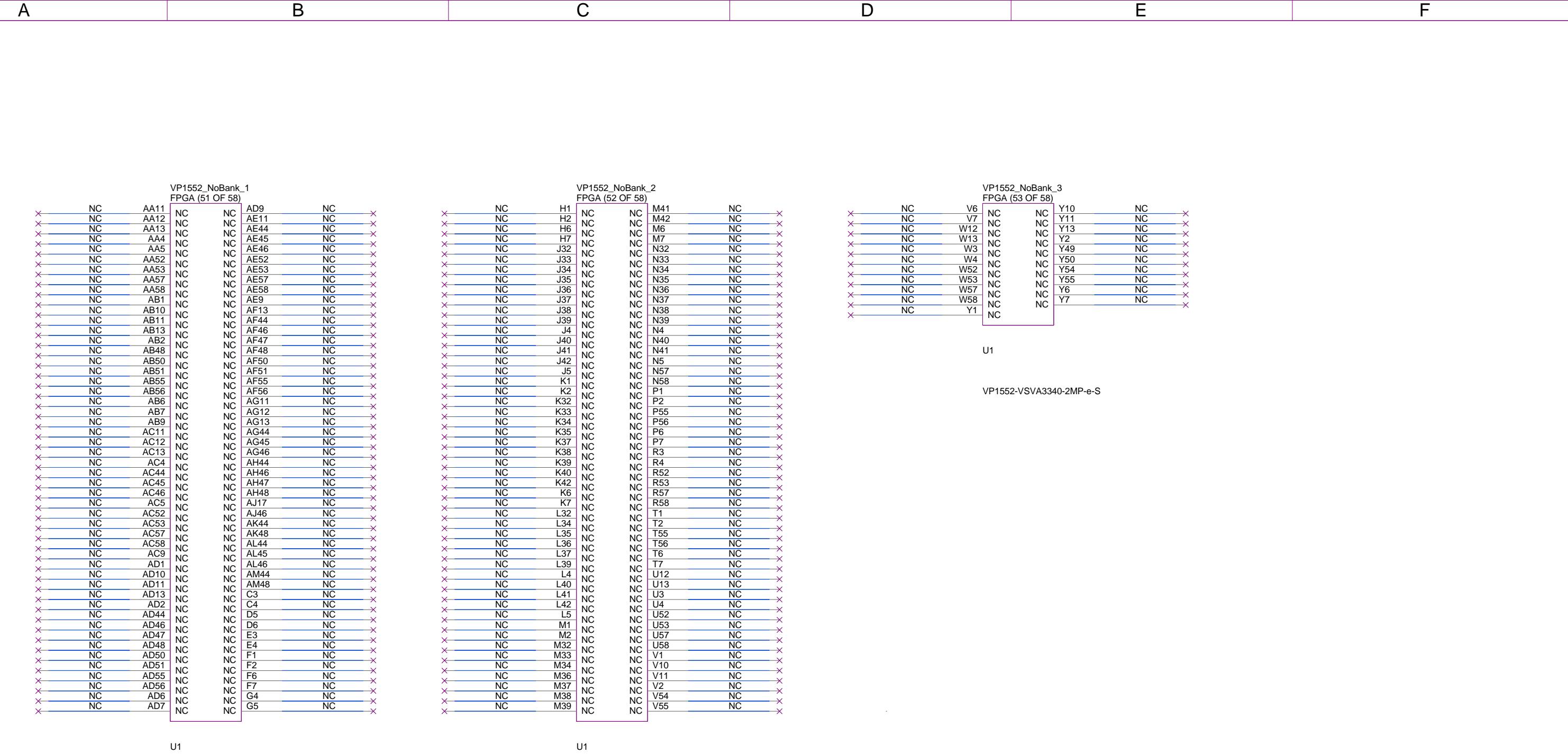




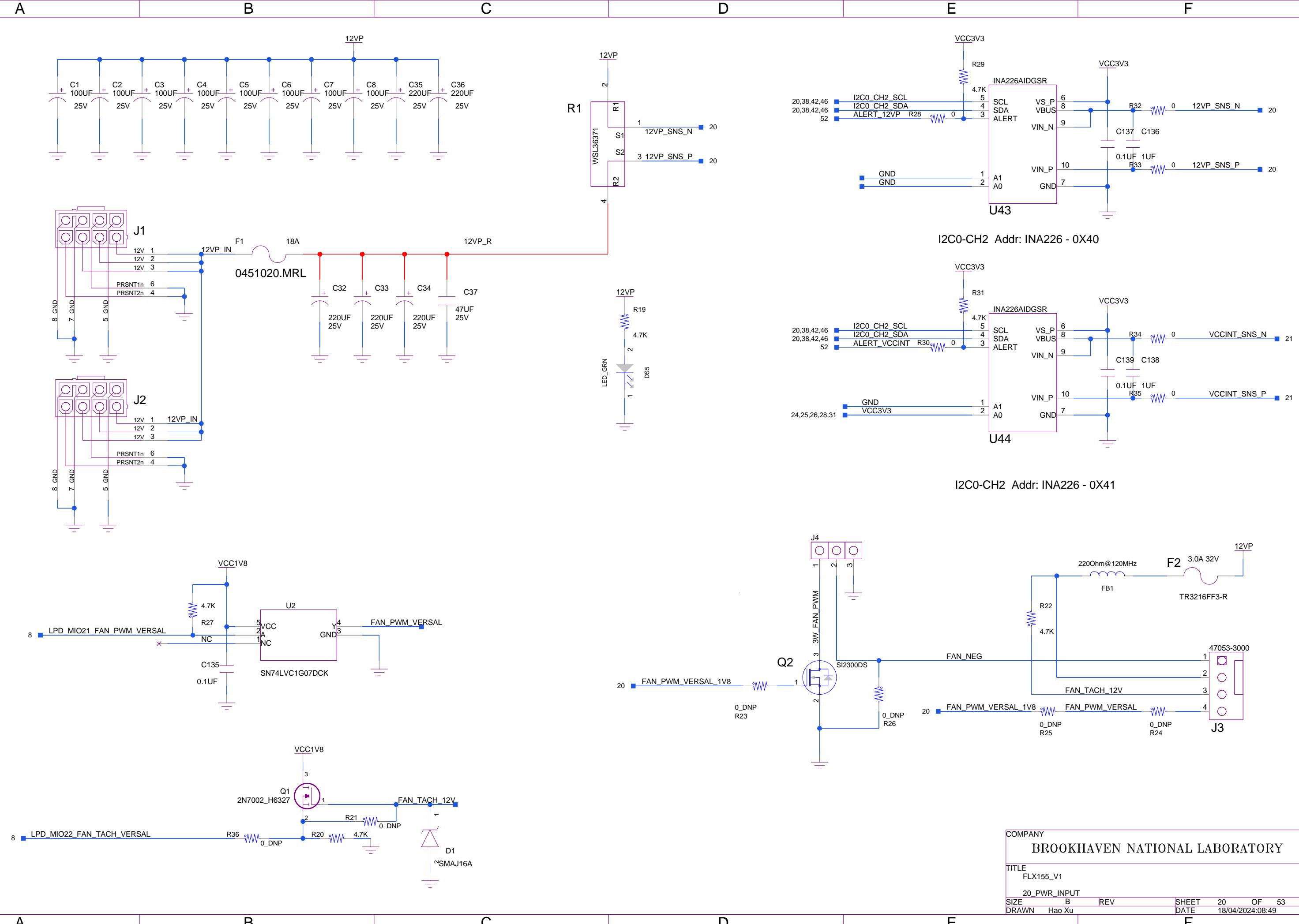


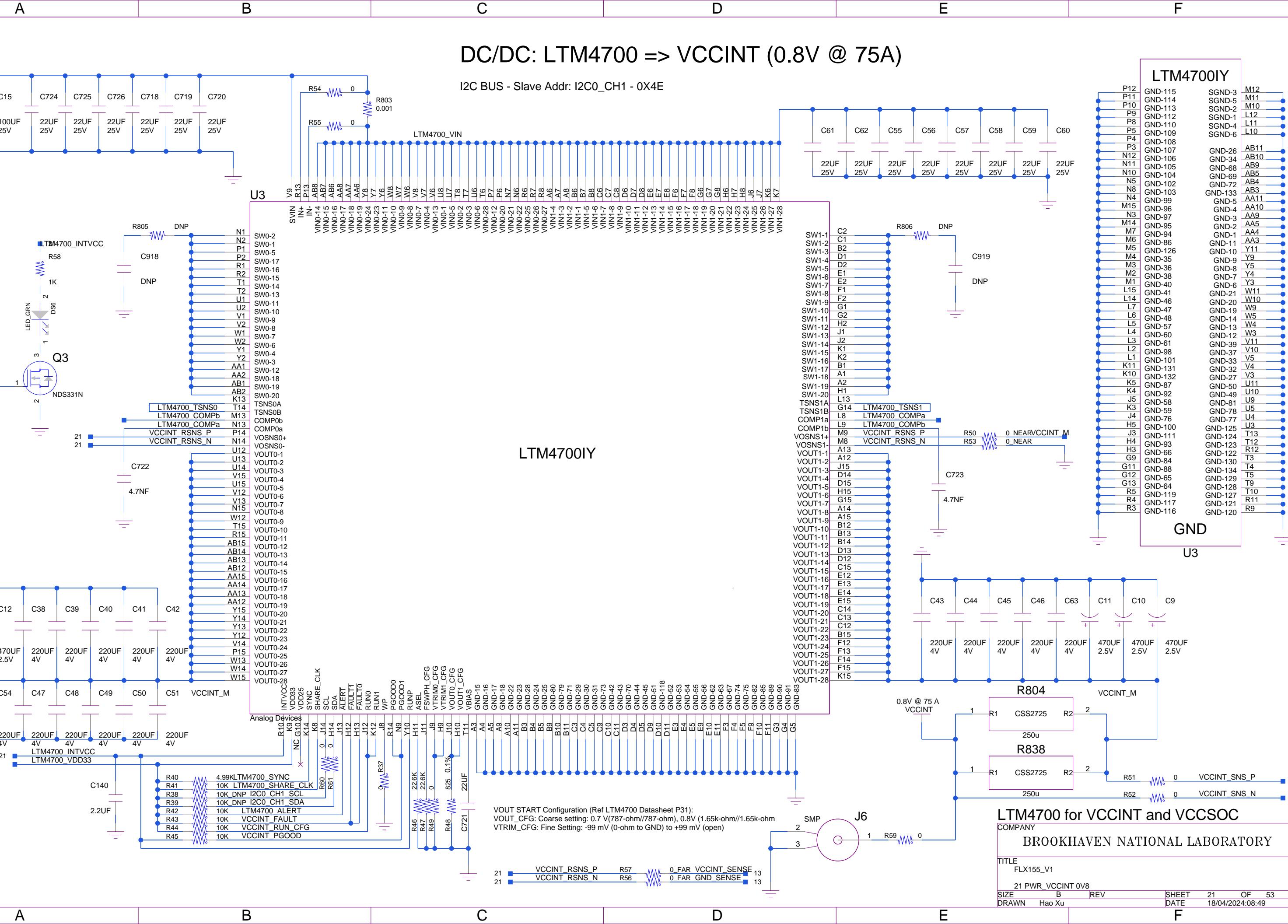


COMPANY
BROOKHAVEN NATIONAL LABORATORY
TITLE
FLX155_V1
18_FPGA_GND3
SIZE B REV
DRAWN Hao Xu SHEET 18 OF 53
DATE 20/03/2024:15:27



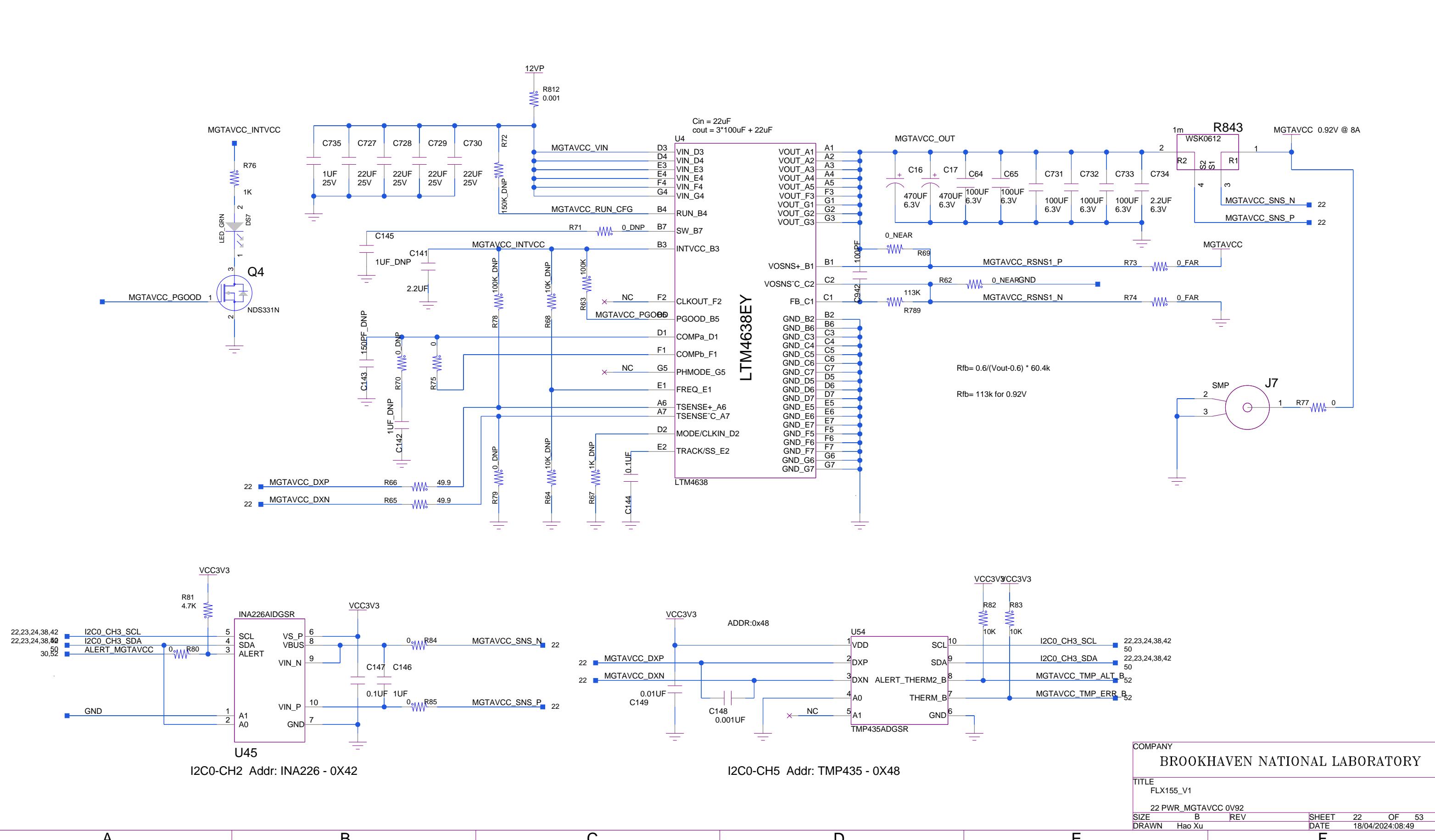
COMPANY	BROOKHAVEN NATIONAL LABORATORY		
TITLE	FLX155_V1		
19_FPGA_NC			
SIZE	B	REV	SHEET
DRAWN	Hao Xu		19 OF 53
		DATE	20/03/2024:15:28





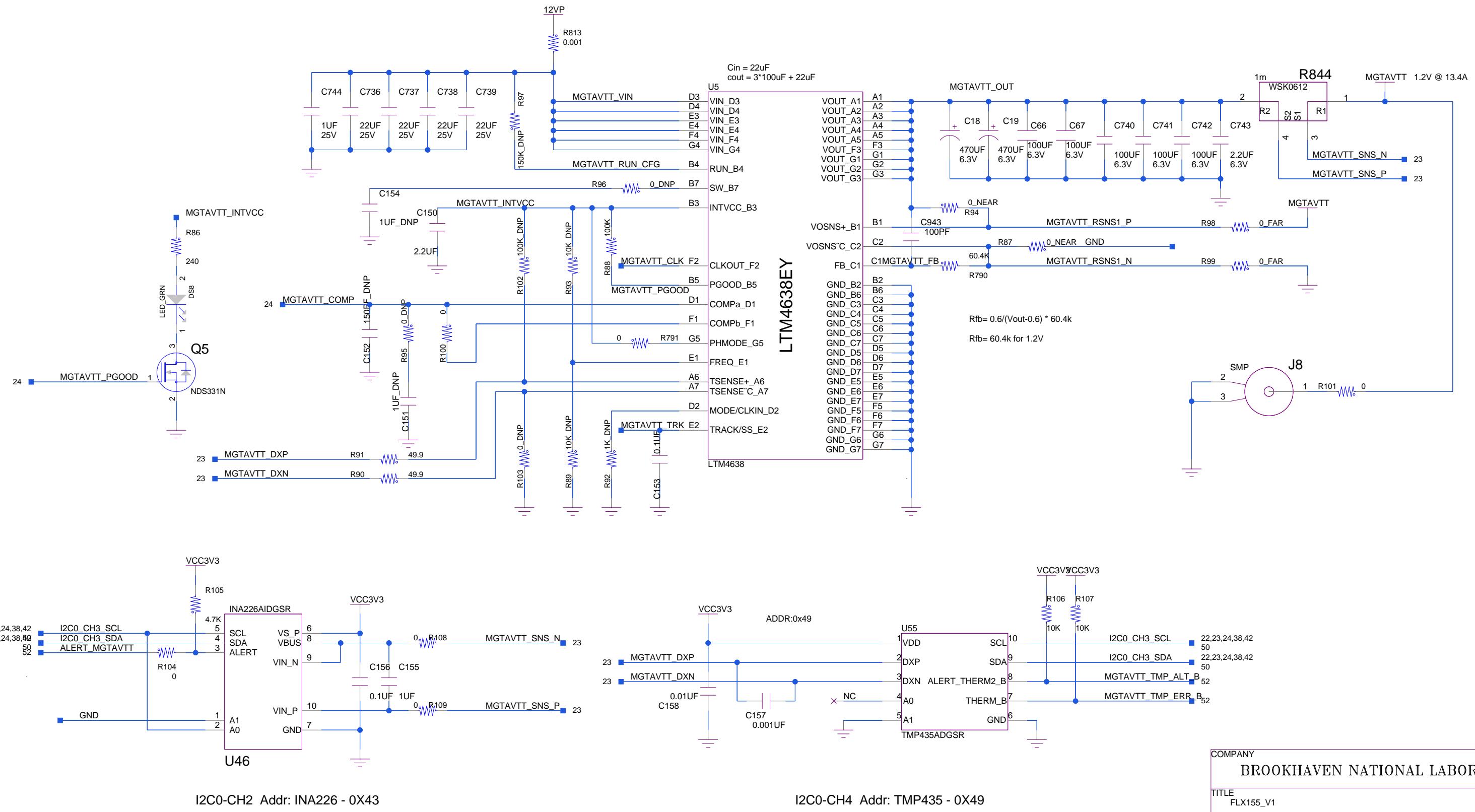
A B C D E F

DC/DC : LTM4638 => MGTAVCC (0.92V @ 8A)



A B C D E F

DC/DC: LTM4638 => MGTAVTT 1 of 2 (Two for 1.20V @ 13.4A)



A

B

C

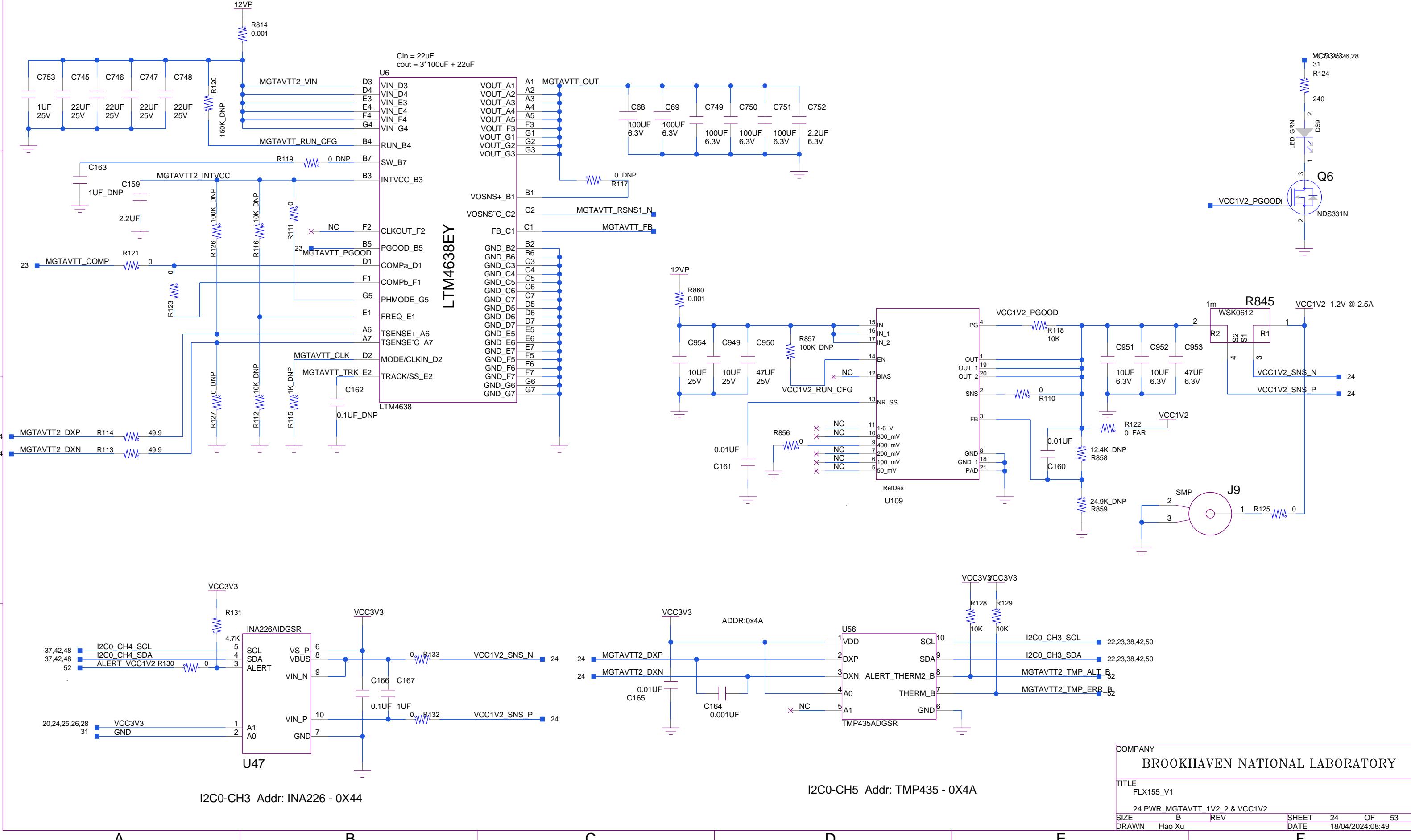
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E

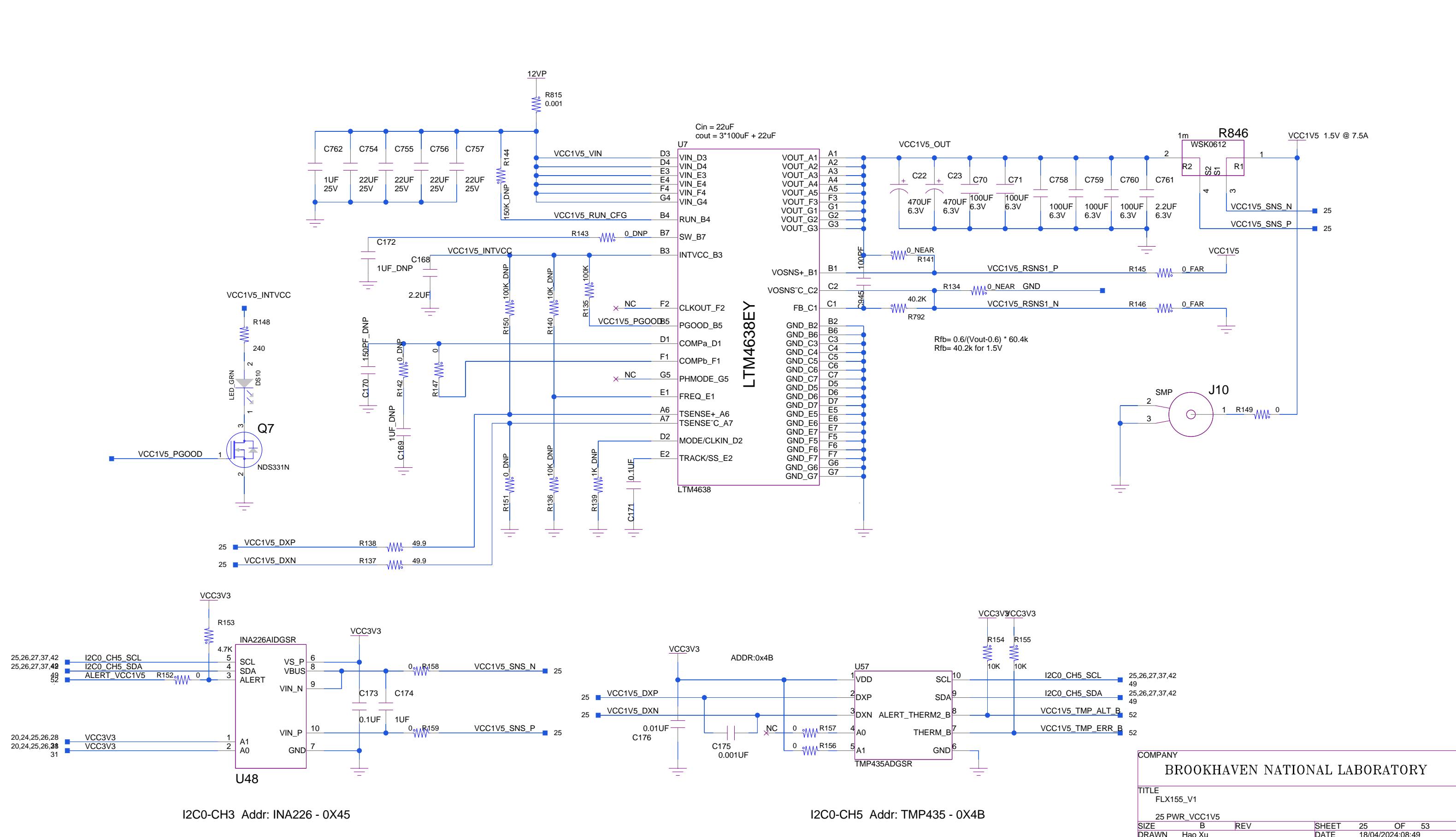
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DC/DC: LTM4638 => MGTA VTT 2 of 2 (Two for 1.20V @ 13.4A)

LDO: TPS7A85A => VCC1V2 @2.5A

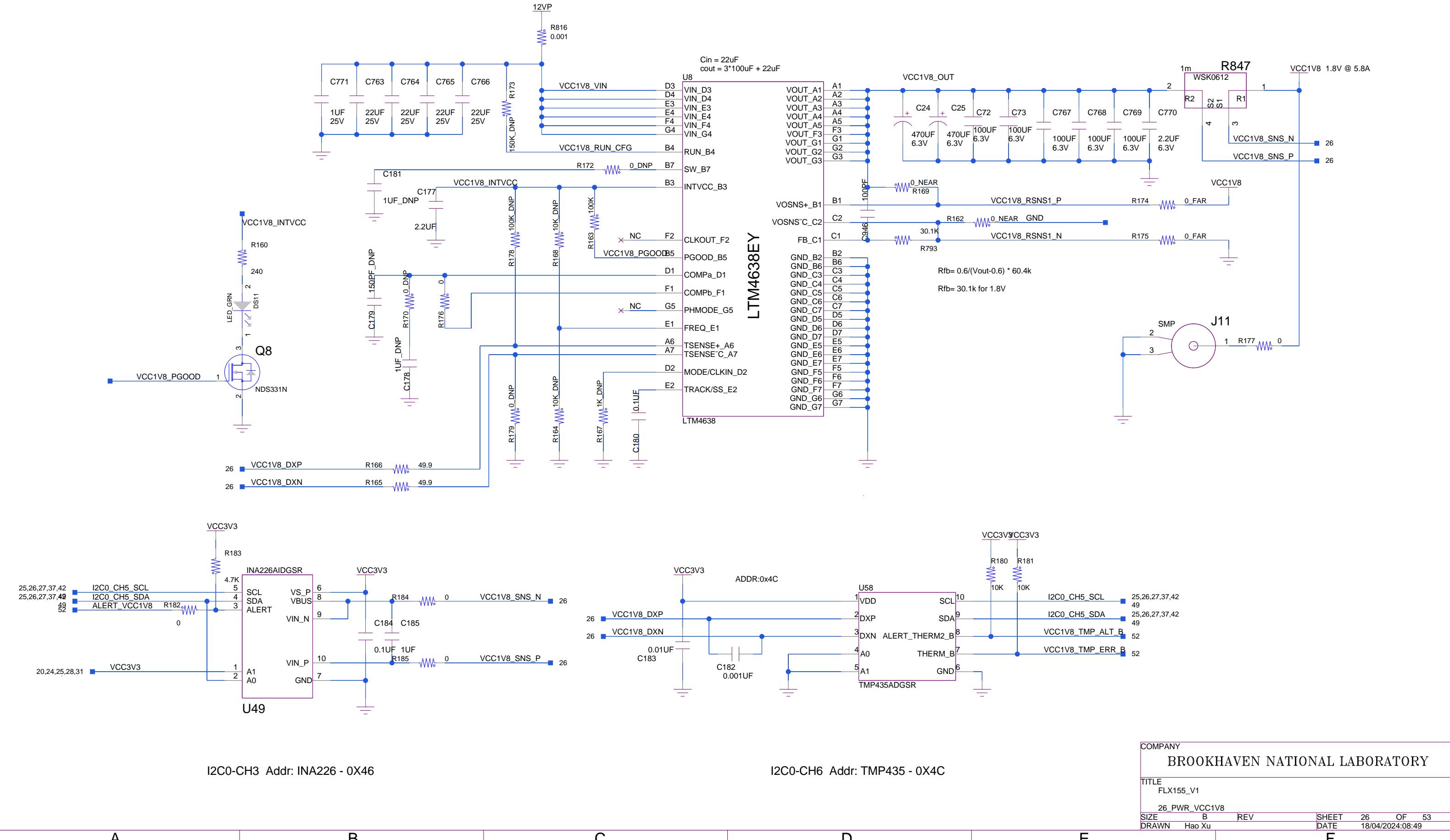


DC/DC: LTM4638 => VCC1V5 (1.50V @ 7.5A)



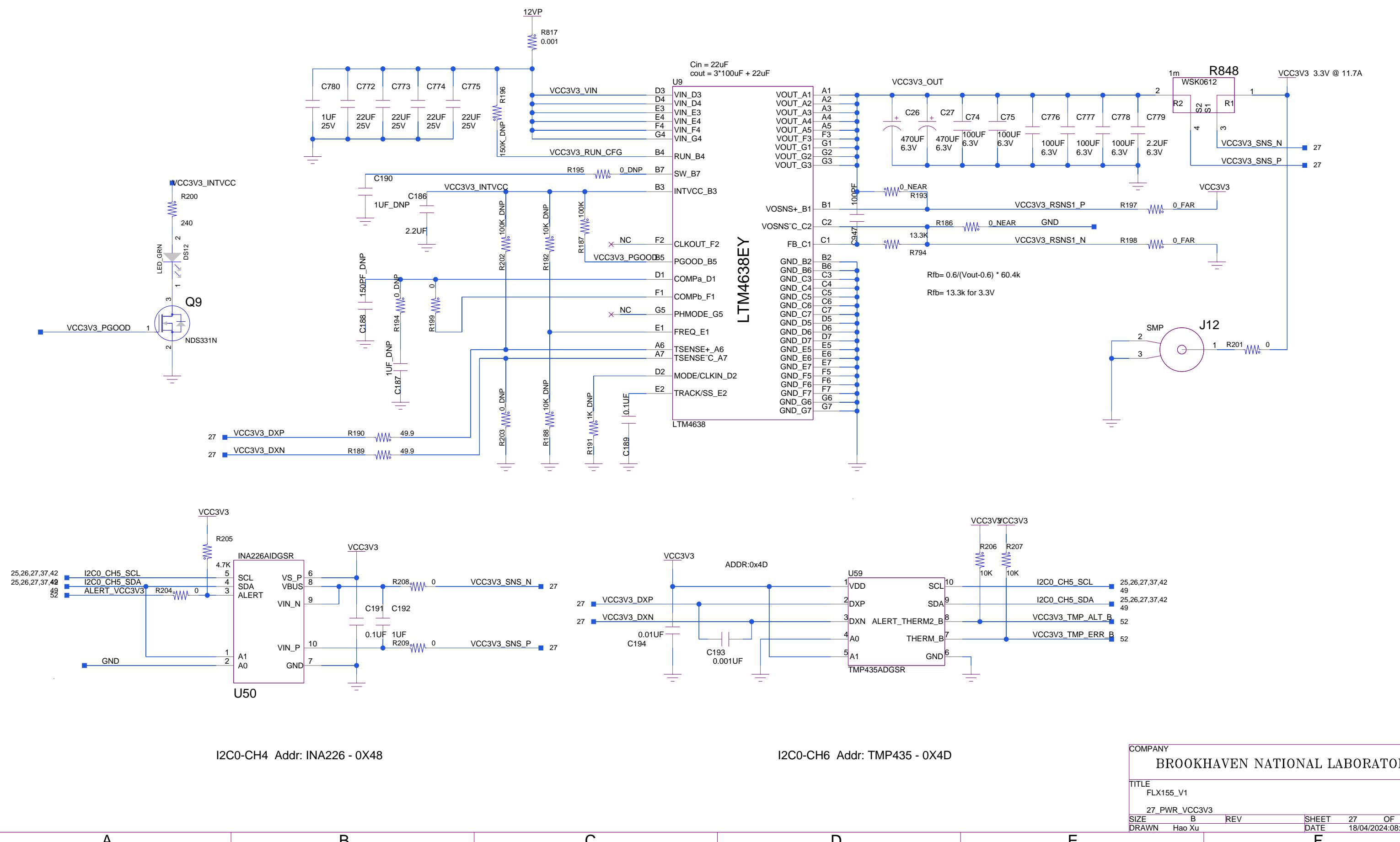
A B C D E F

DC/DC : LTM4638 => VCC1V8 (1.80V @ 5.8A)

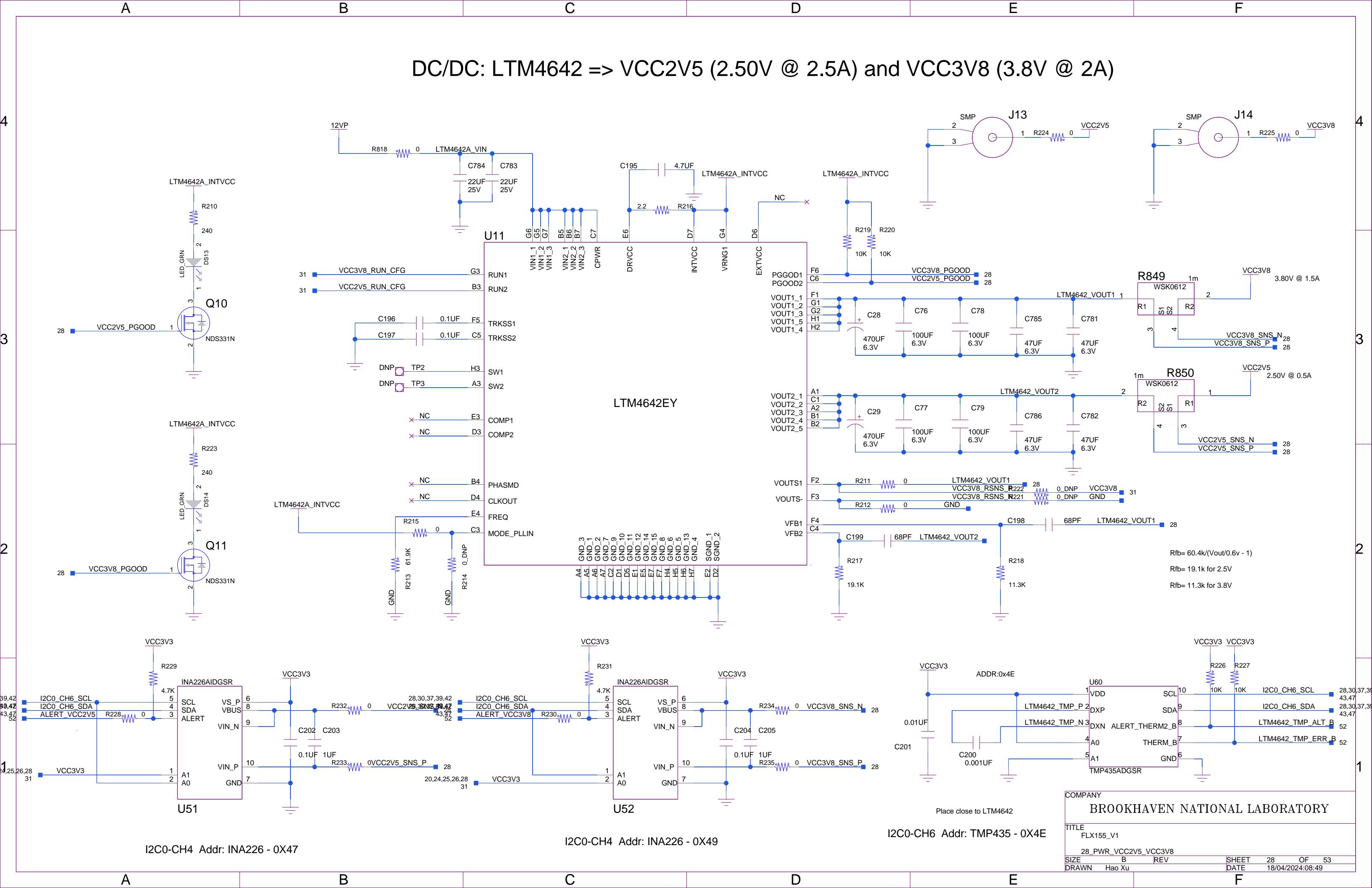


A B C D E F

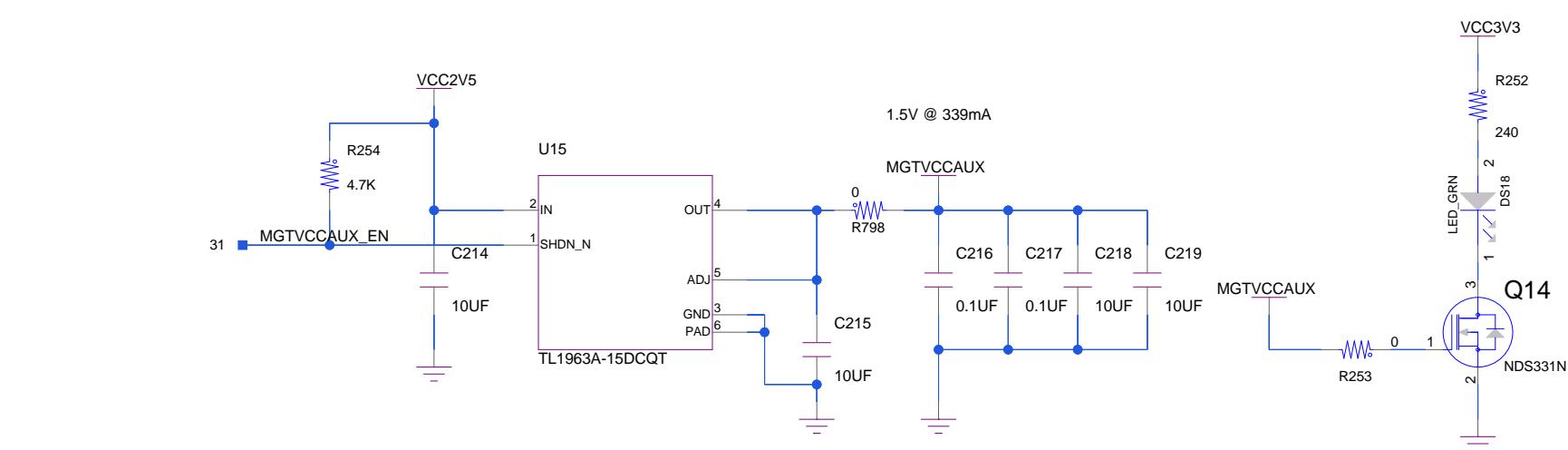
DC/DC: LTM4638 => VCC3V3 (3.30V @ 11.7A)



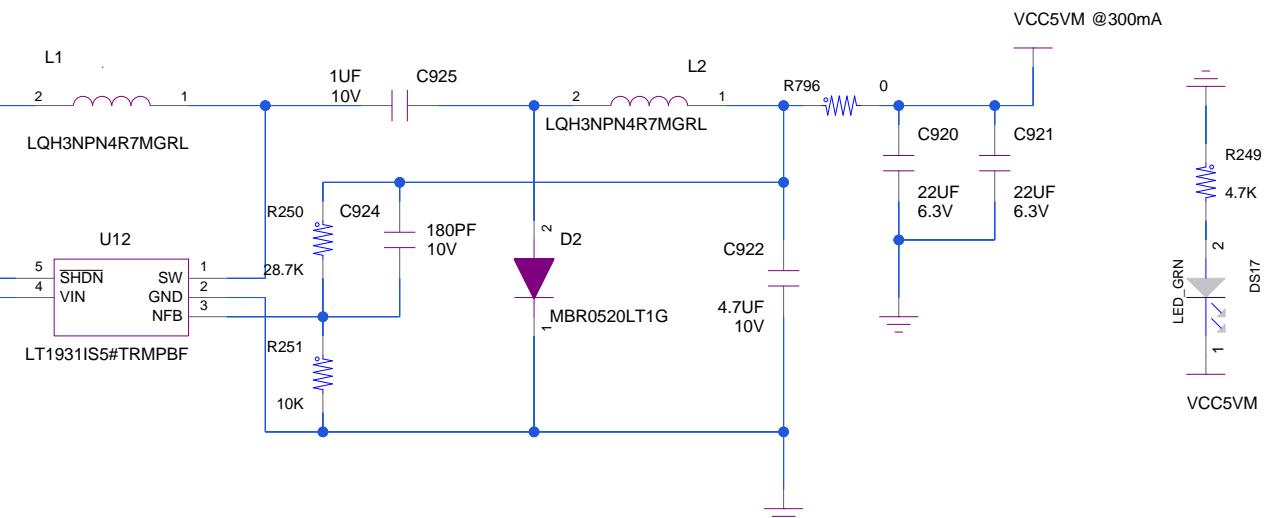
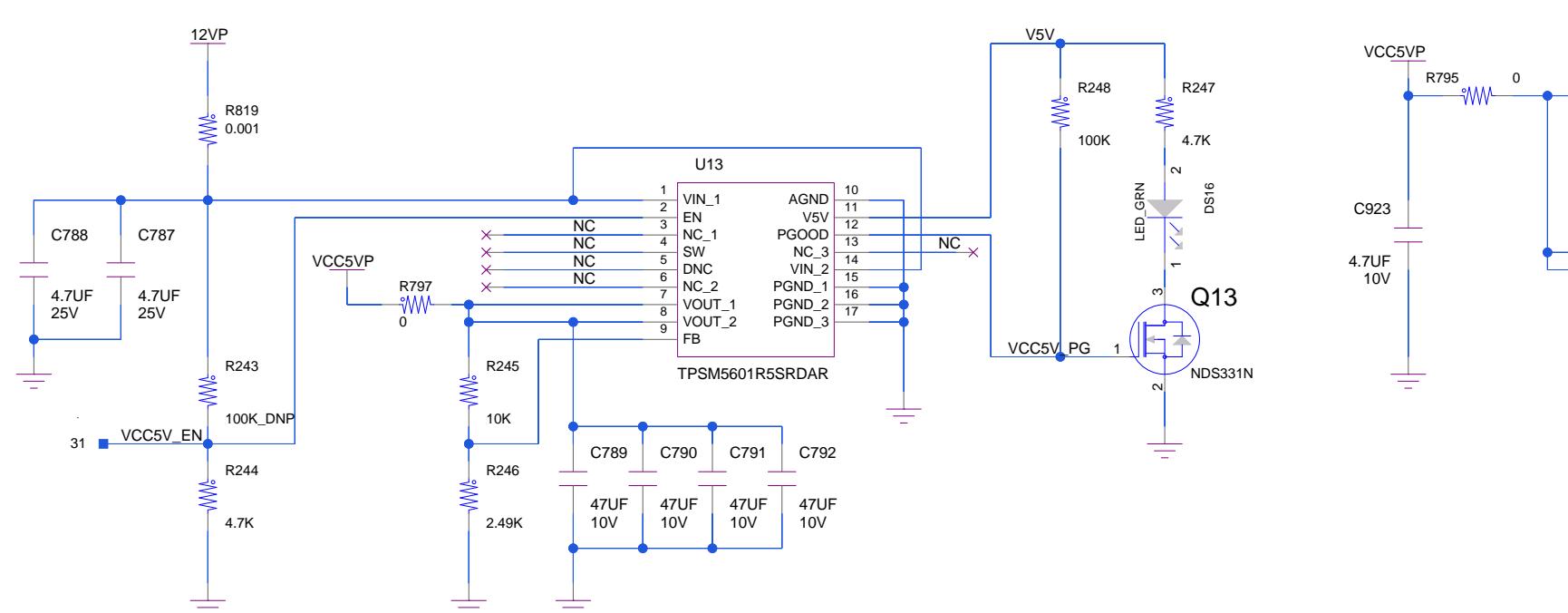
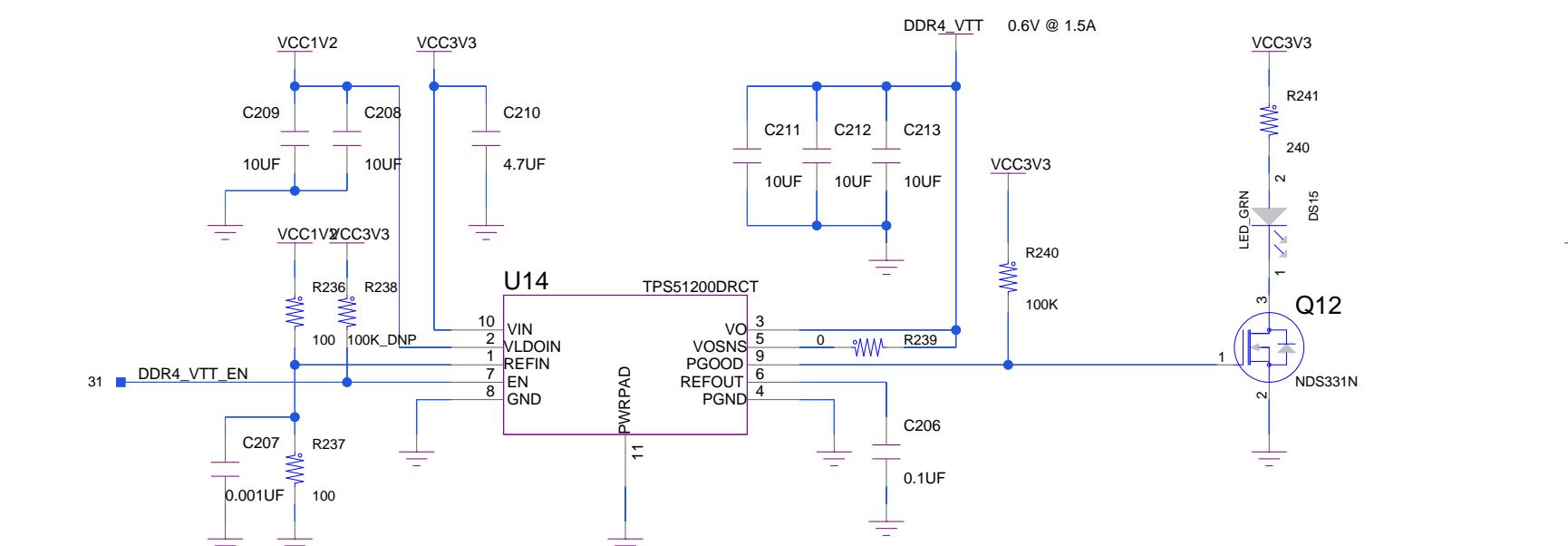
DC/DC: LTM4642 => VCC2V5 (2.50V @ 2.5A) and VCC3V8 (3.8V @ 2A)



A B C D E F



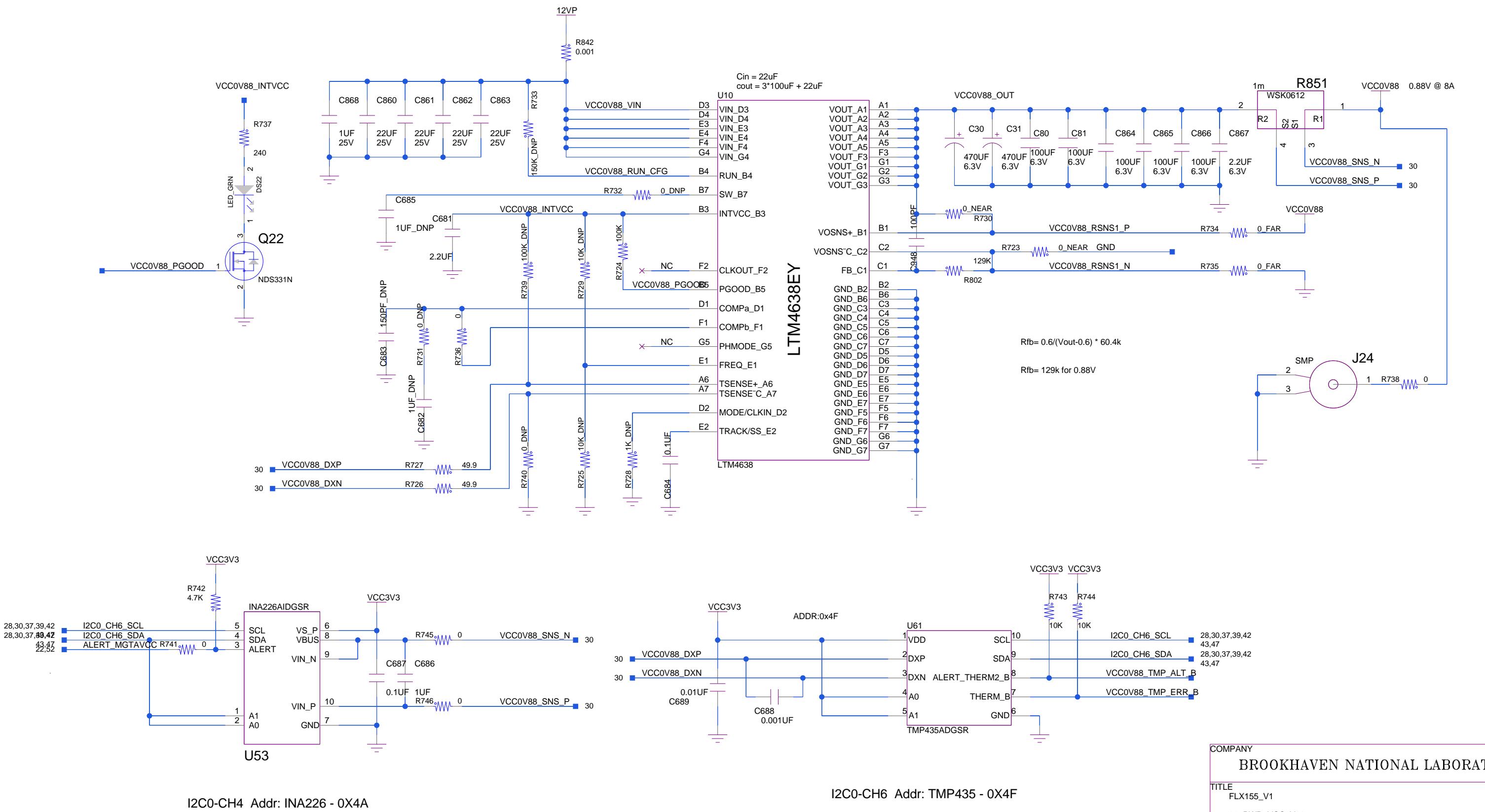
MGTVCVCAUX (1.50V @ 0.4A)
DDR4_VTT (0.60V @ 1.5A)
VCC5VP (5.0V @ 0.5A)
VCC5VM (-5.0V @ 0.1A)



COMPANY	BROOKHAVEN NATIONAL LABORATORY		
TITLE	FLX155_V1		
SIZE	B	REV	SHEET
DRAWN	Hao Xu		29 OF 53
DATE	18/04/2024:08:49		

A B C D E F

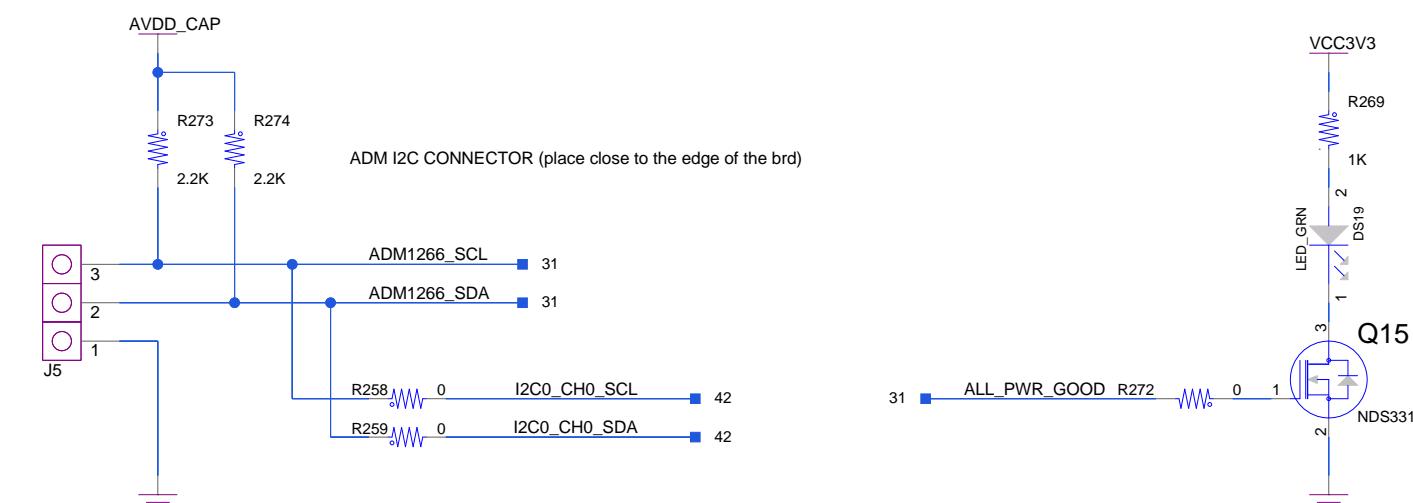
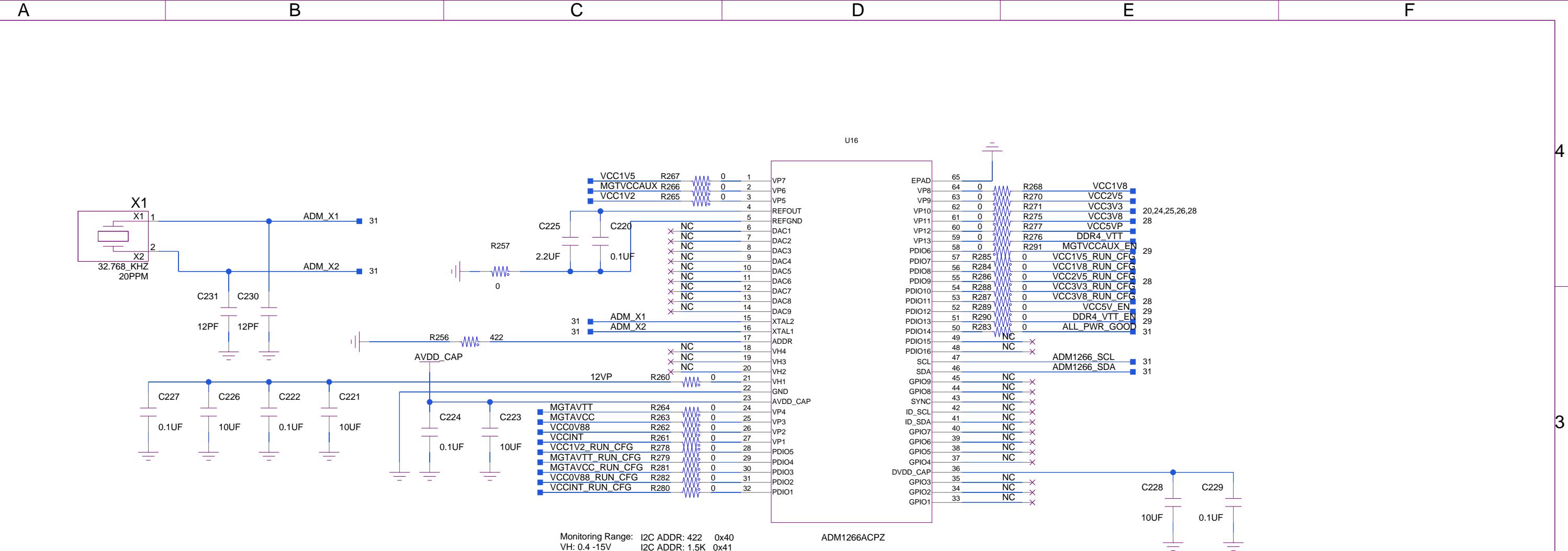
DC/DC : LTM4638 => VCC0V88 (0.88V @ 8A)



I2C0-CH4 Addr: INA226 - 0X4

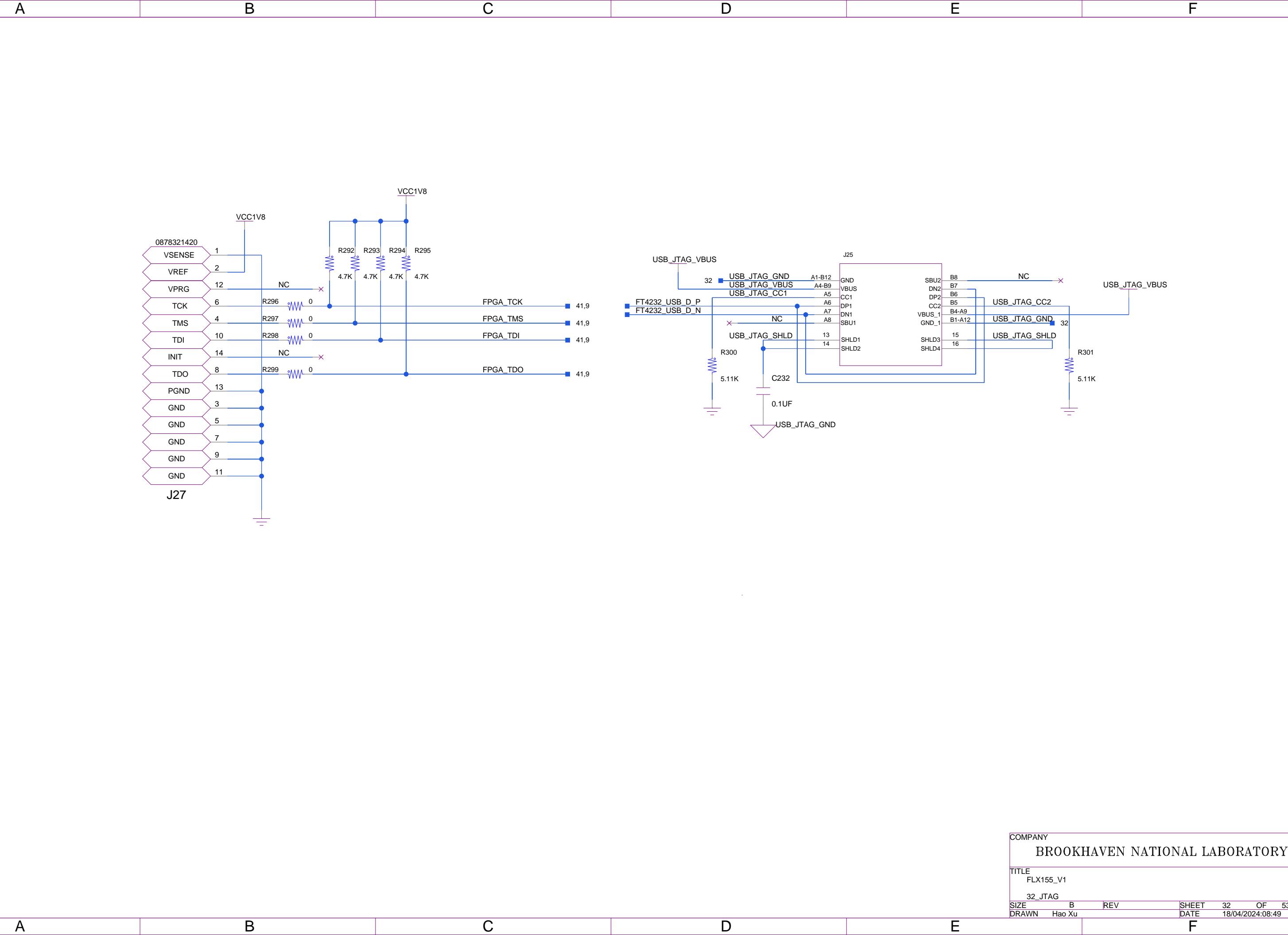
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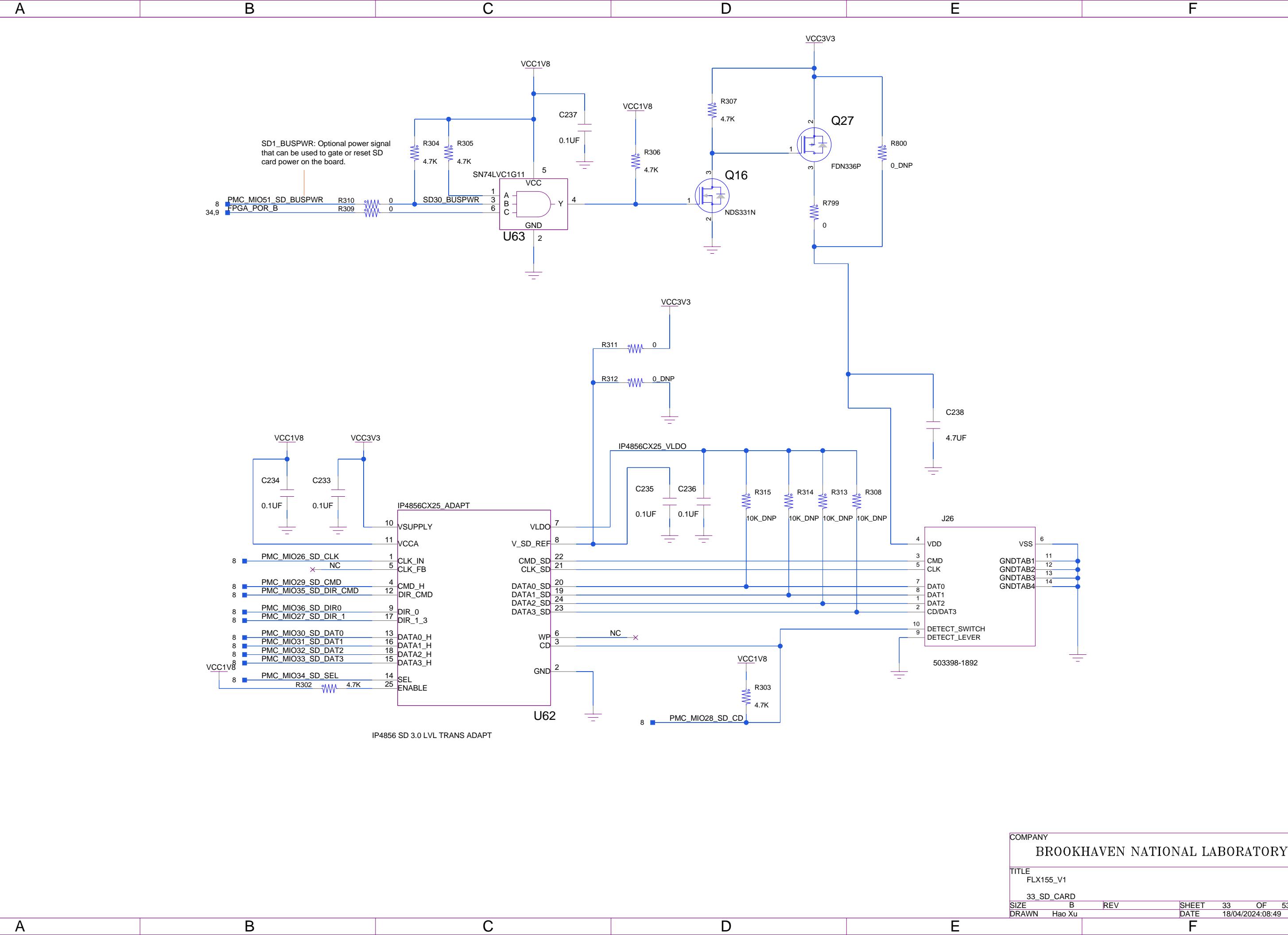
COMPANY	BROOKHAVEN NATIONAL LABORATORY					
TITLE	FLX155_V1					
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SIZE	B	REV	SHEET	30	OF	53
DRAWN	Hao Xu		DATE	18/04/2024:08:49		

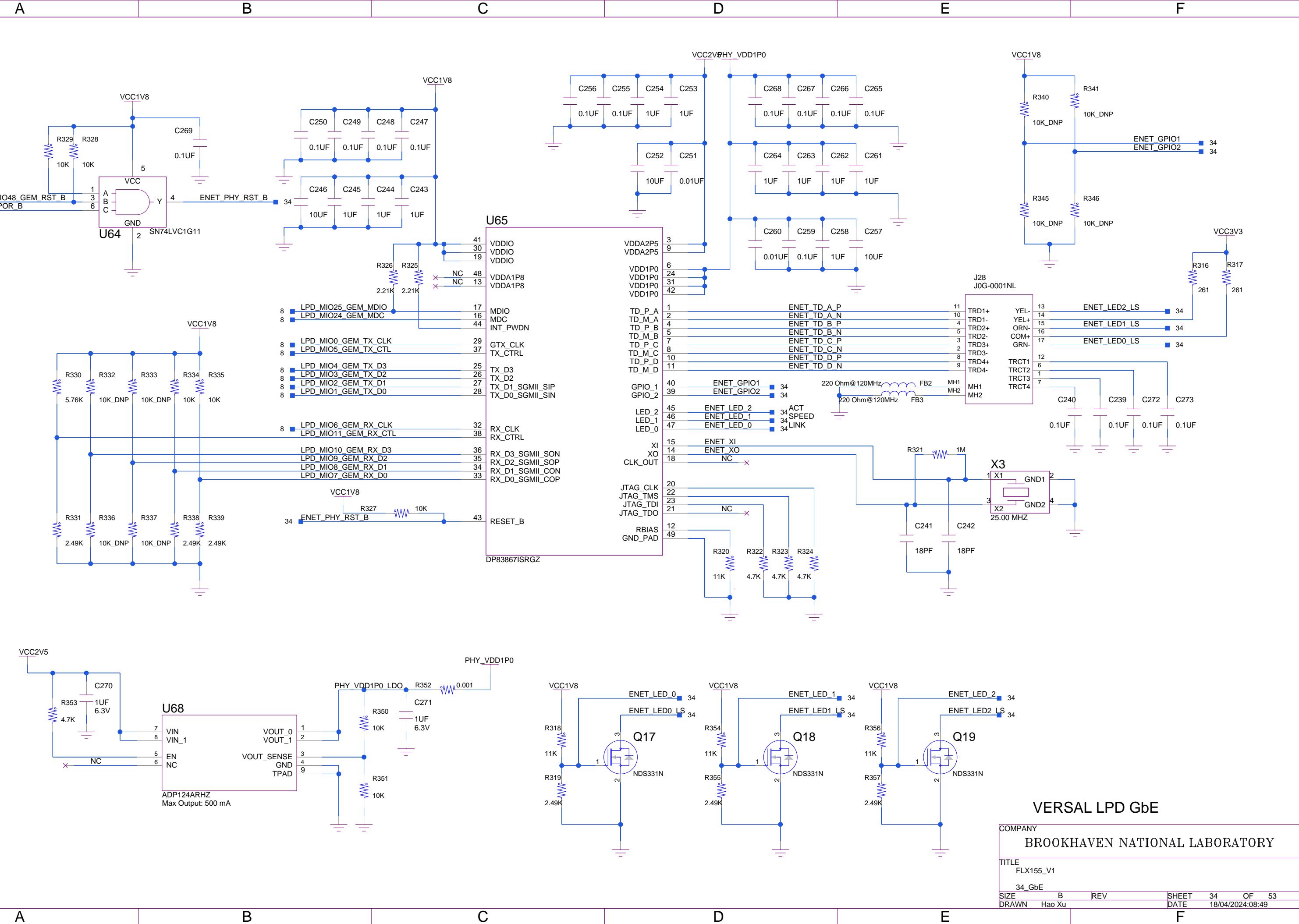


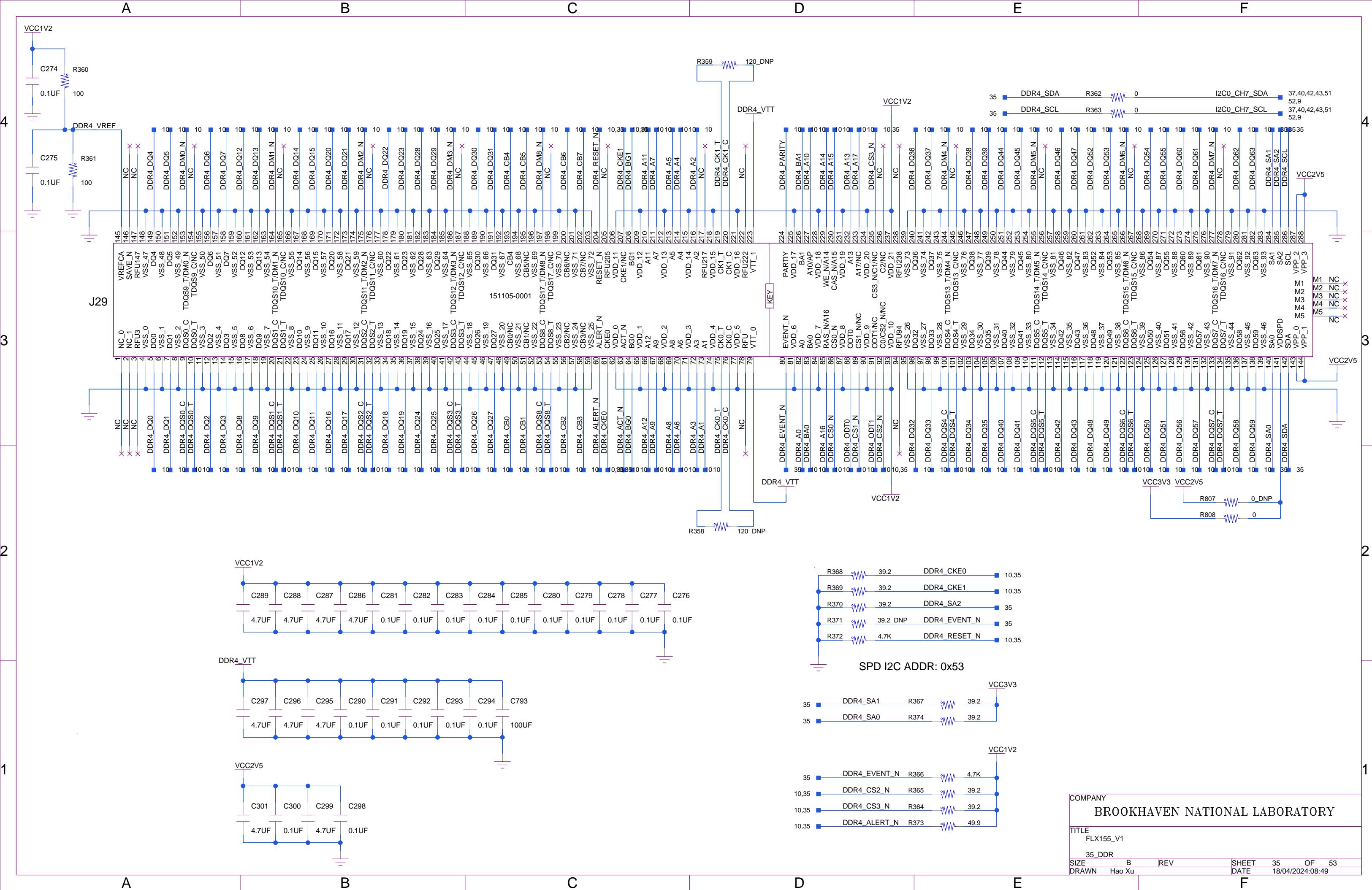
ADM1266 for Power Sequence and Monitoring

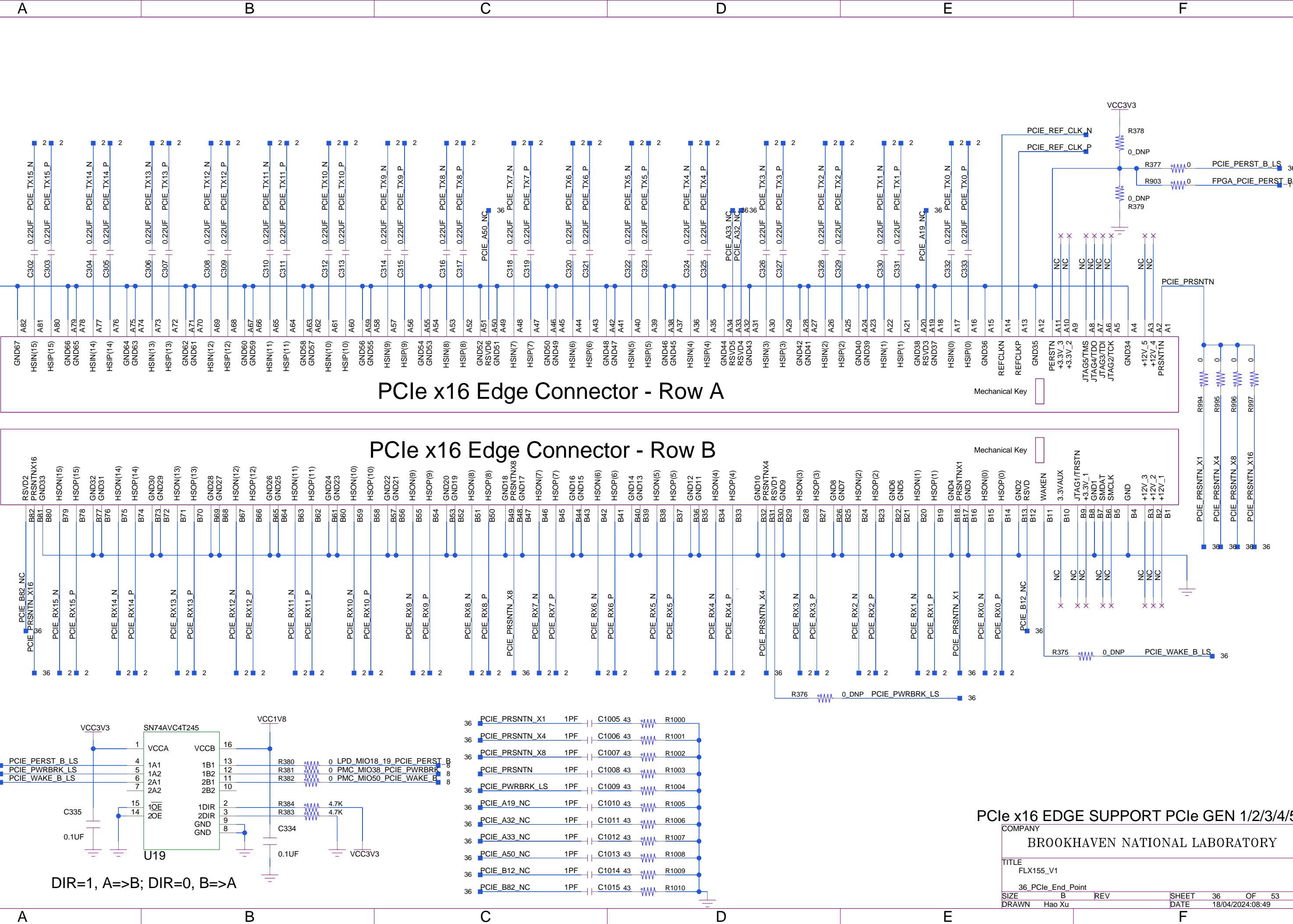
COMPANY	BROOKHAVEN NATIONAL LABORATORY		
TITLE	FLX155_V1		
31_PWR_MANAGEMENT			
SIZE	B	REV	SHEET
DRAWN	Hao Xu	31	OF 53
DATE	18/04/2024:08:49		

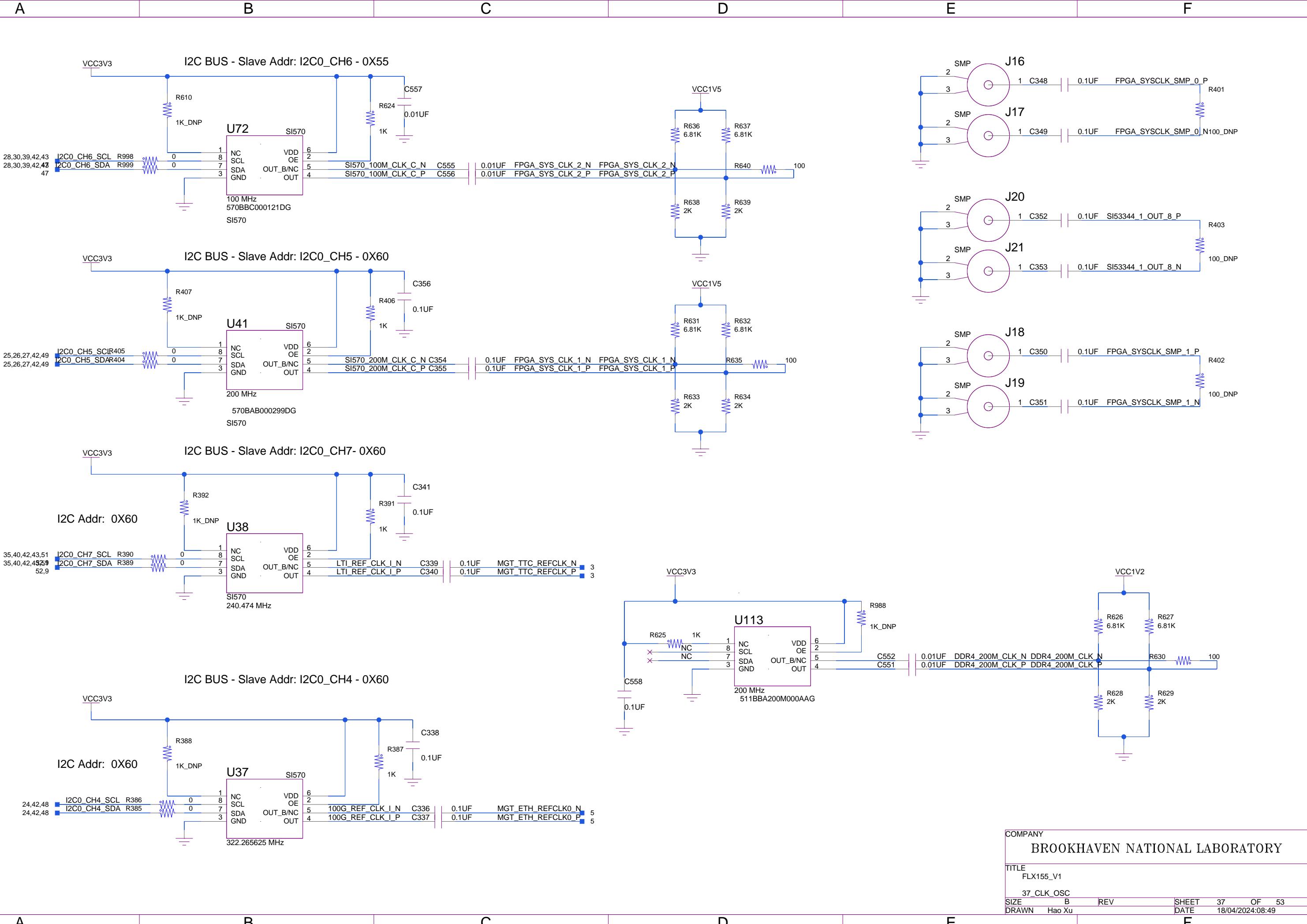












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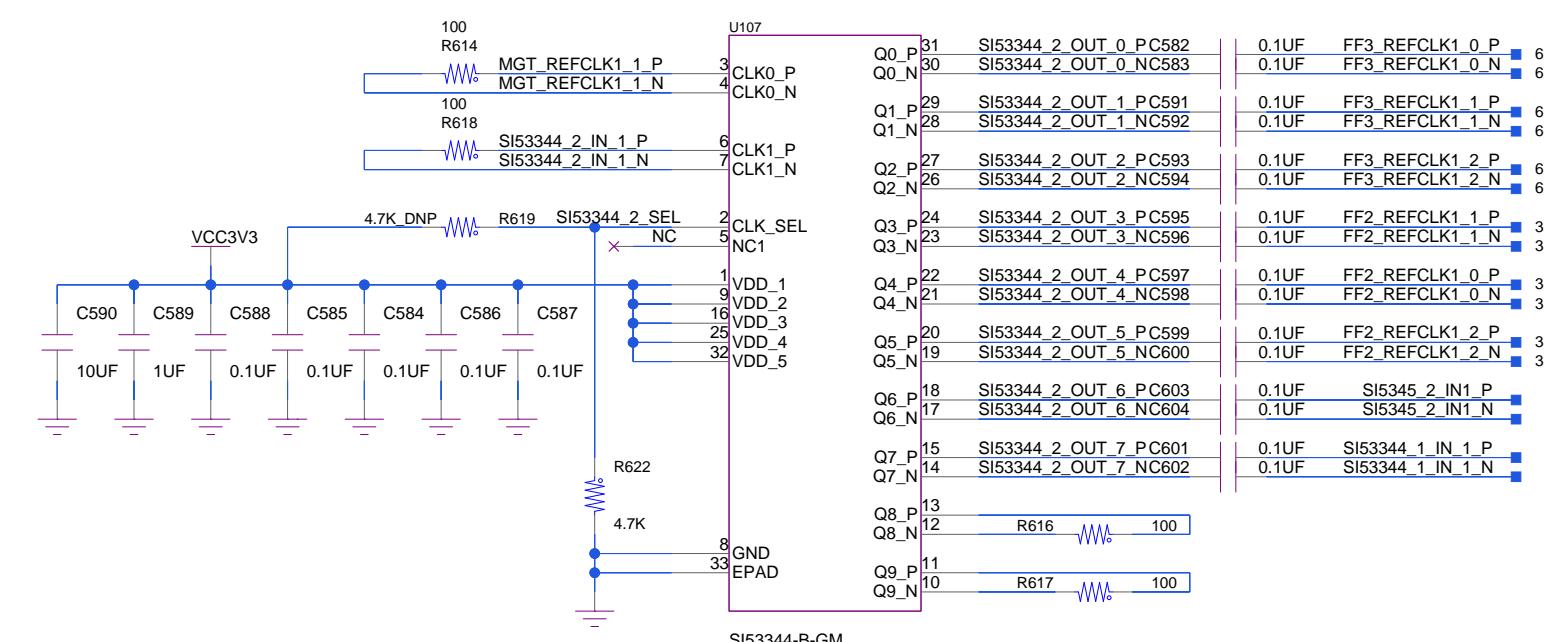
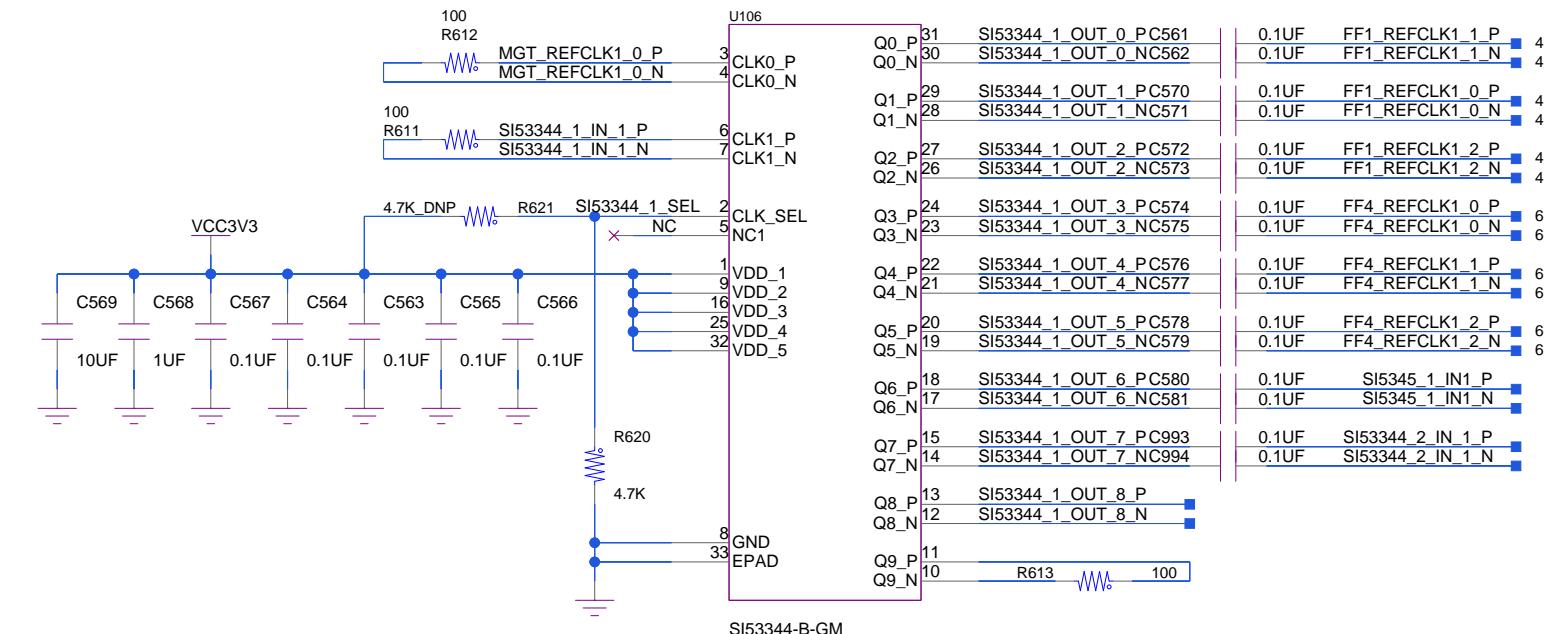
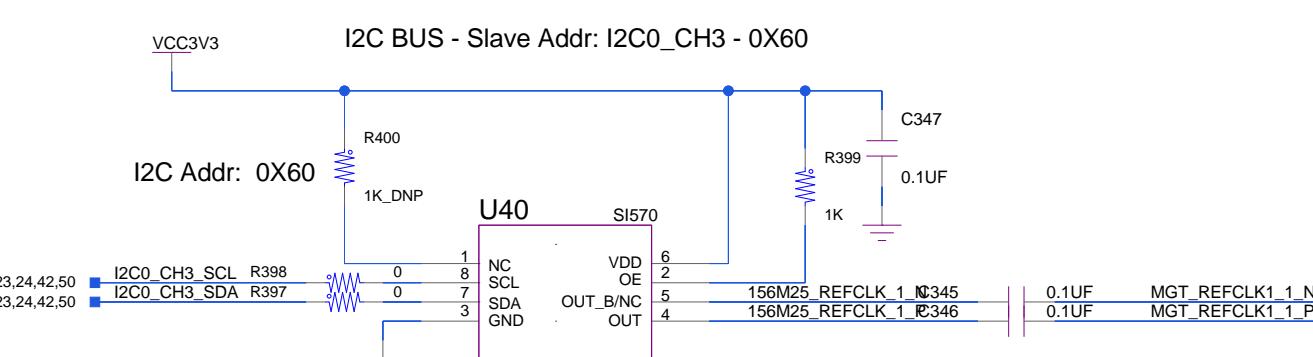
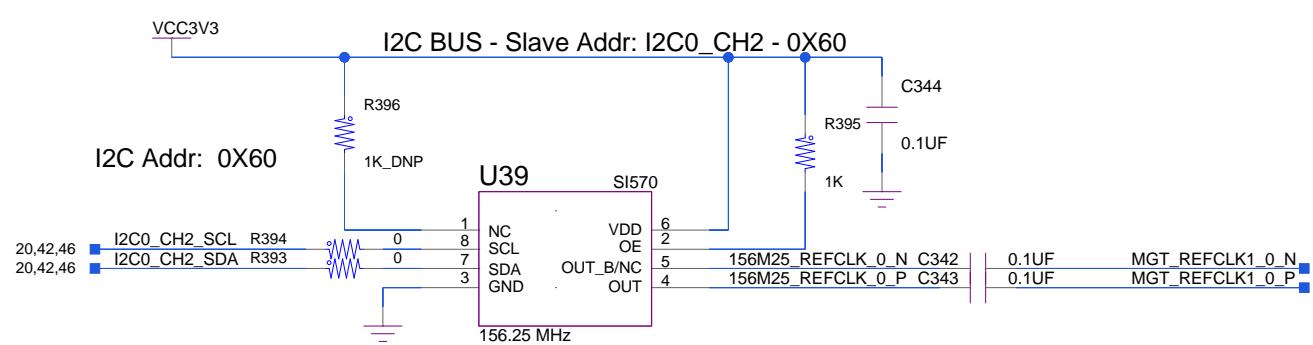
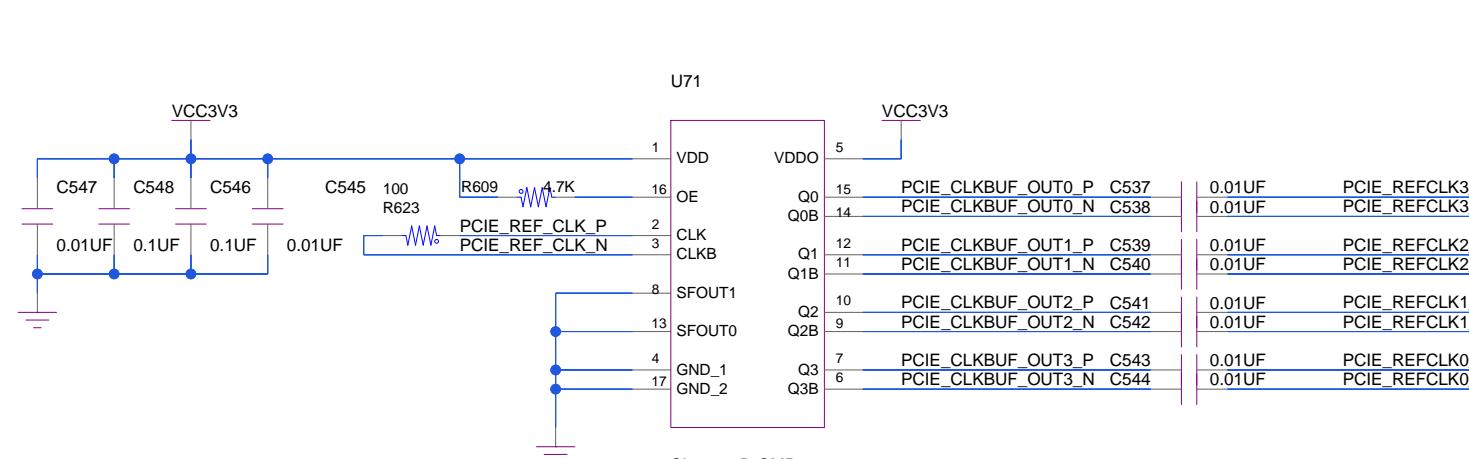
B

C

D

E

F



A

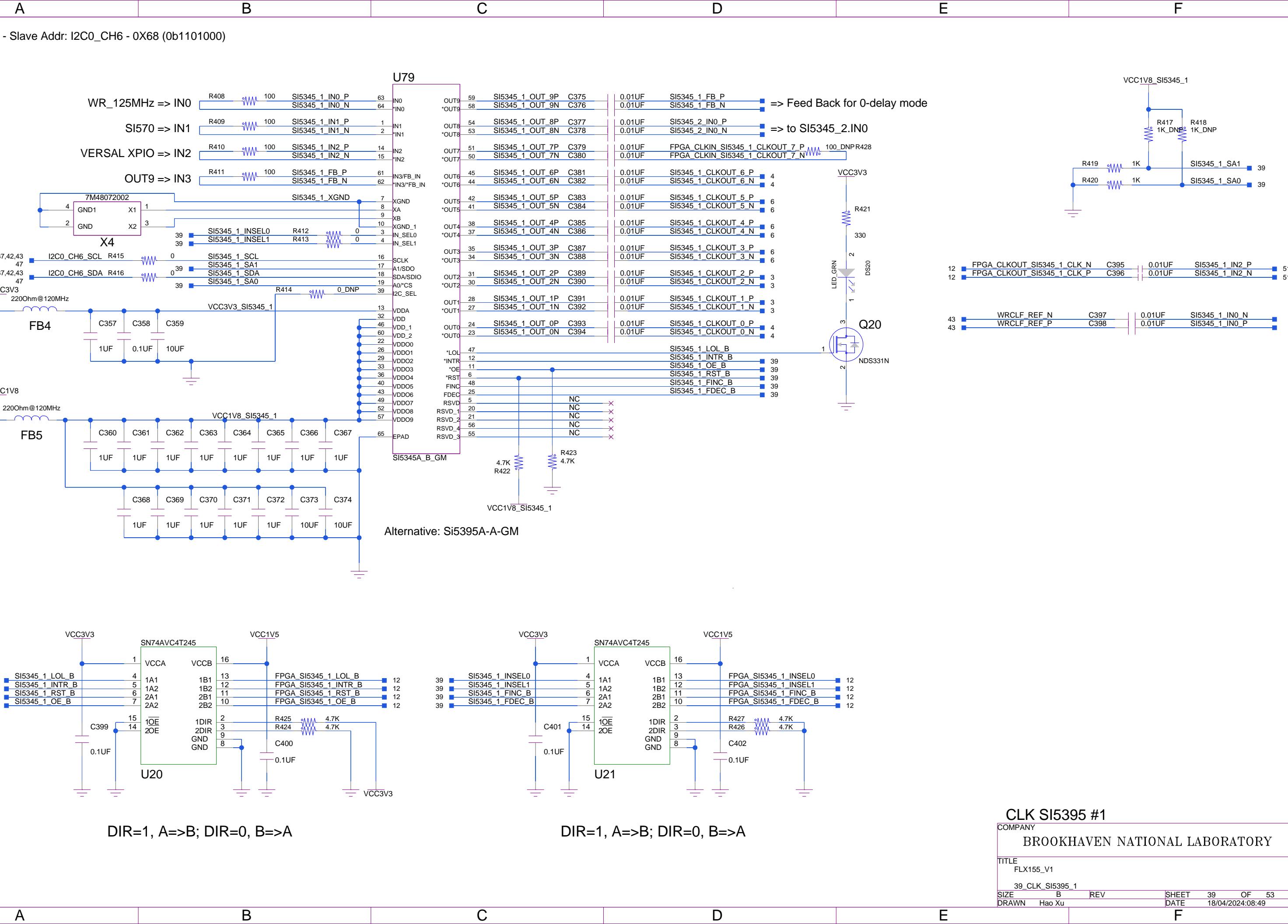
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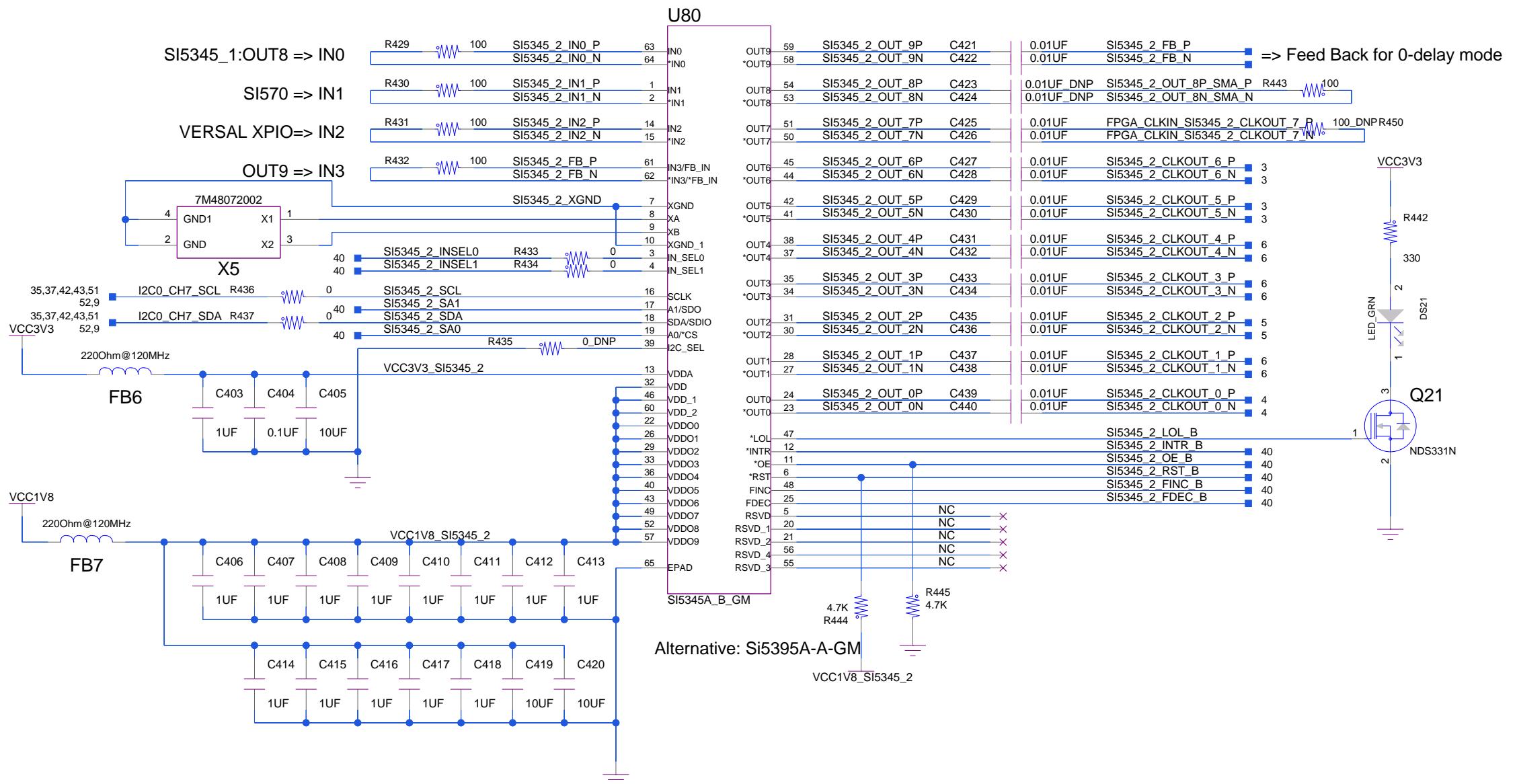
D

E

F

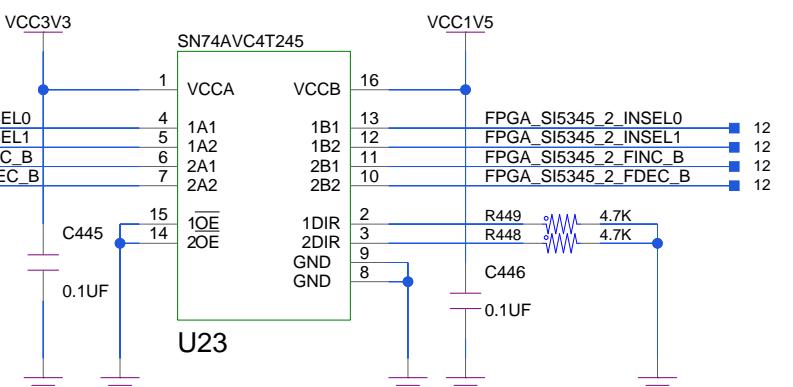
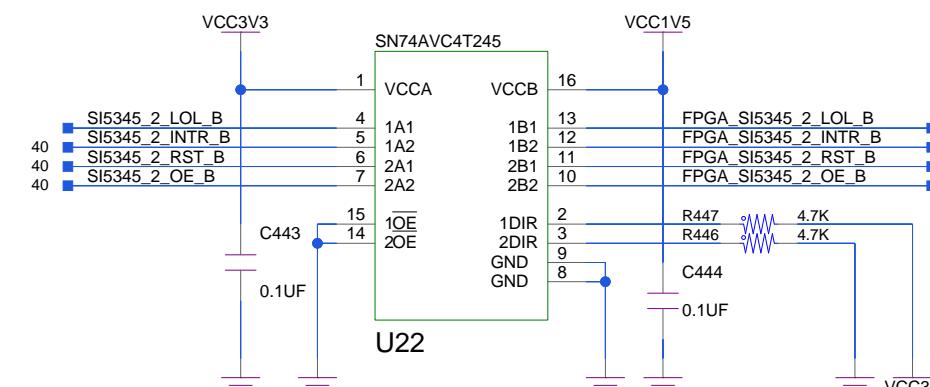


I2C BUS - Slave Addr: I2C0_CH7 - 0X69 (0b110100)



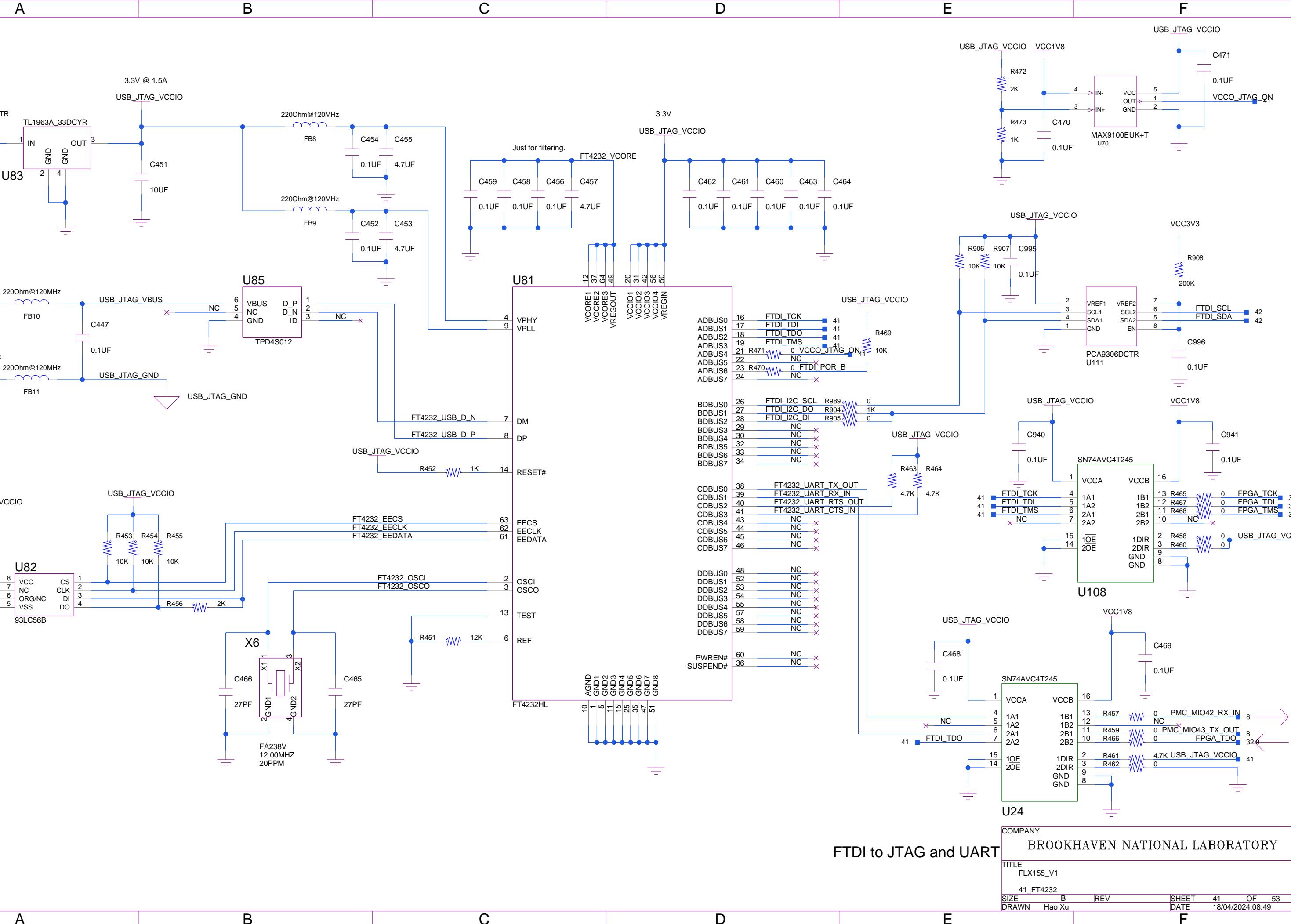
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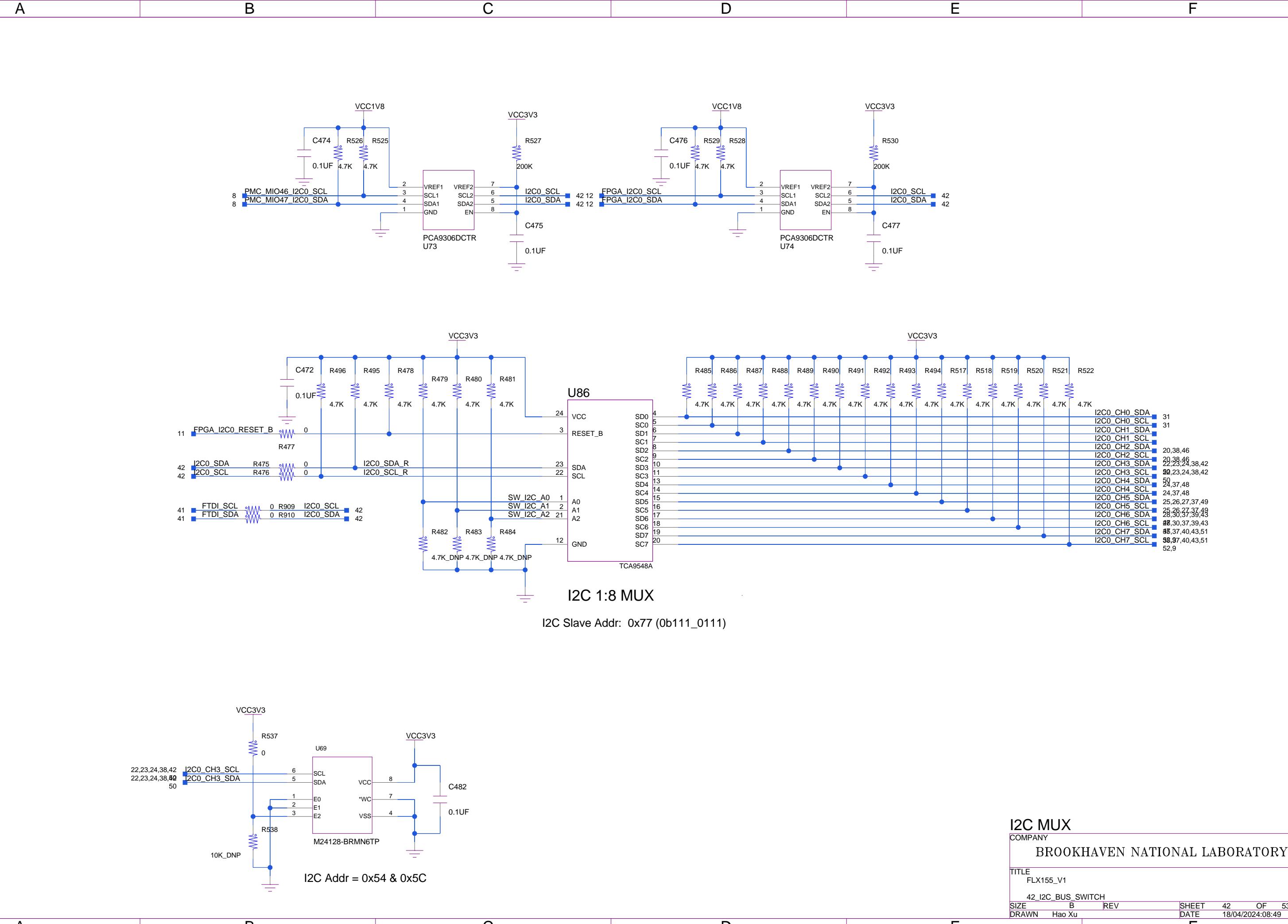
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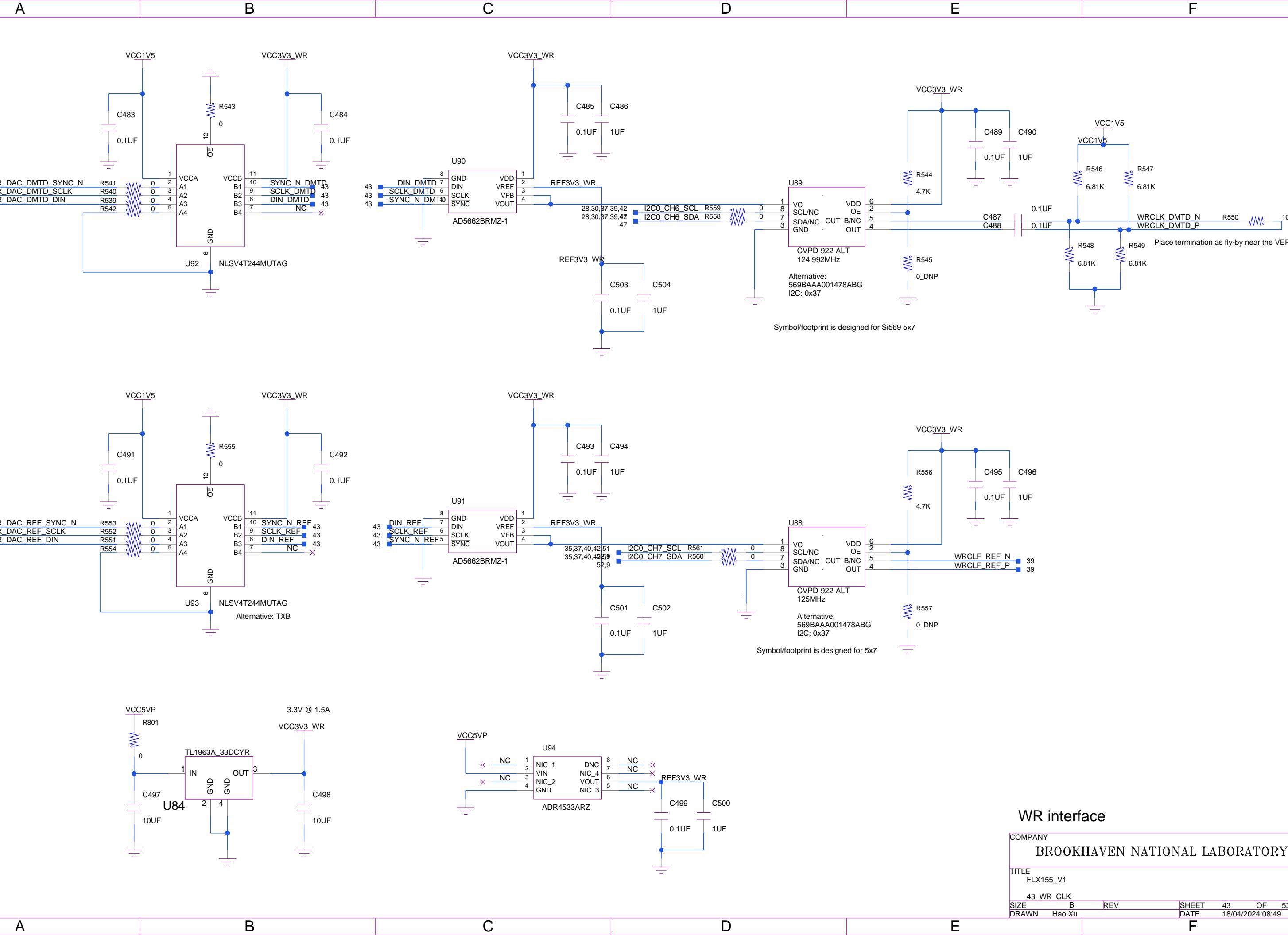


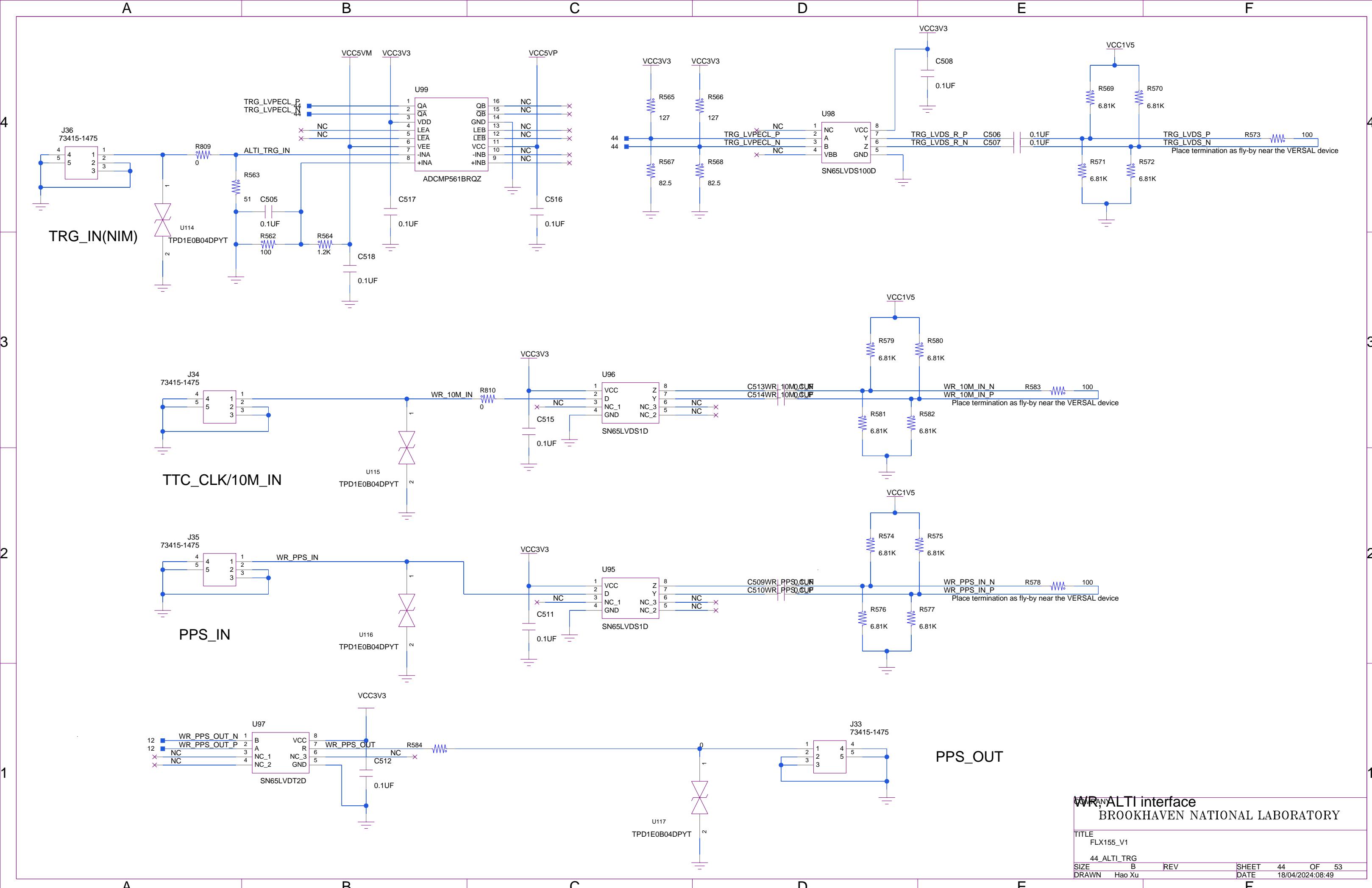
CLK SI5395 #2

COMPANY	BROOKHAVEN NATIONAL LABORATORY					
TITLE	FLX155_V1					
SIZE	B	REV	SHEET	40	OF	53
DRAWN	Hao Xu		DATE	18/04/2024 08:49		
40_CLK_SI5395_2						

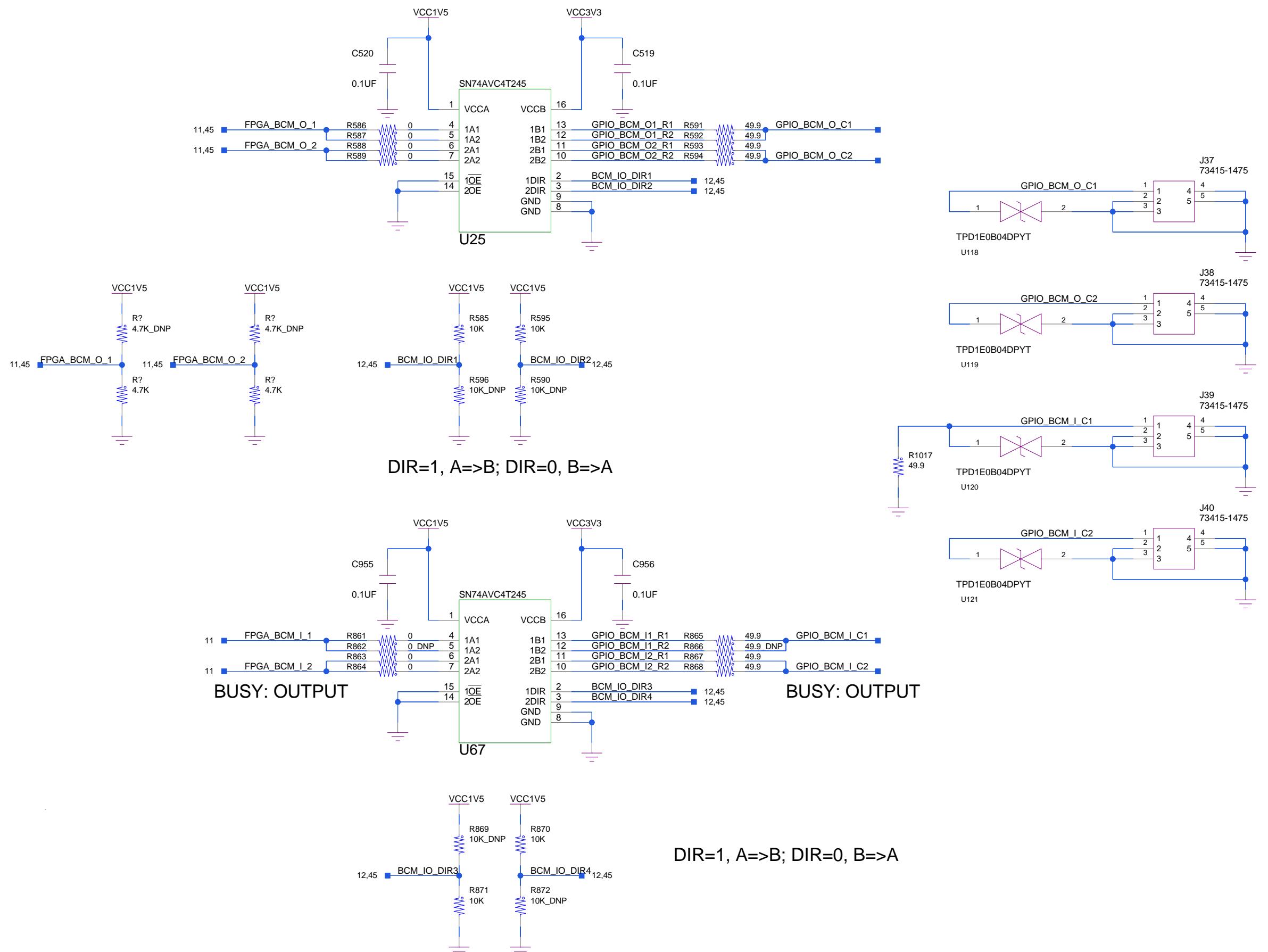


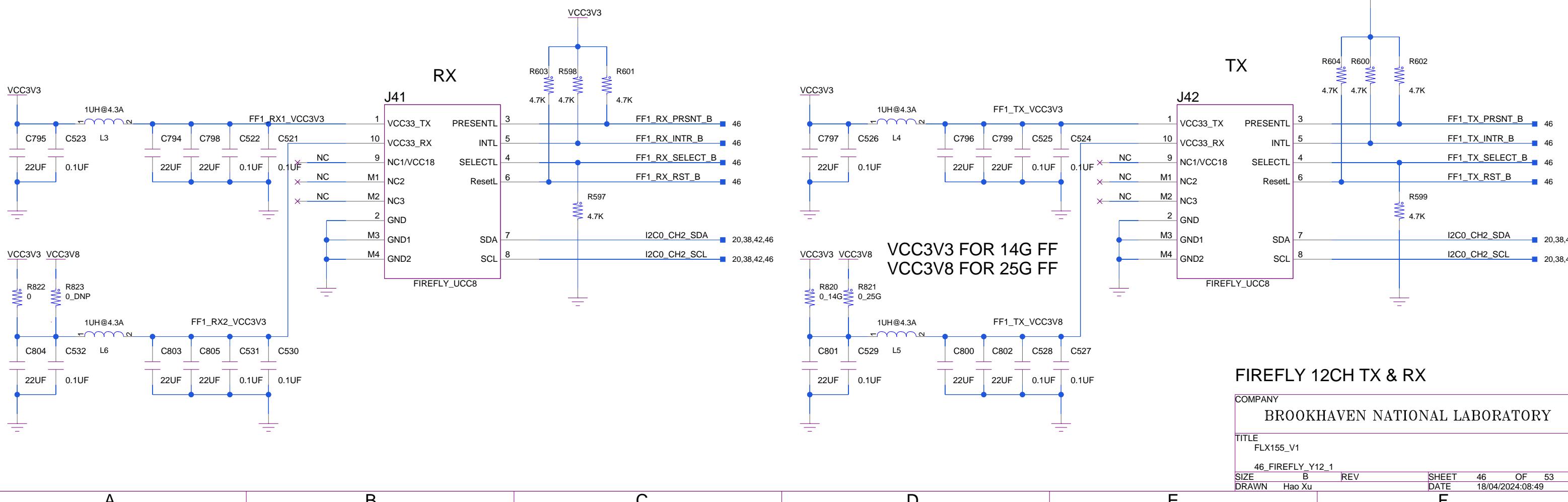
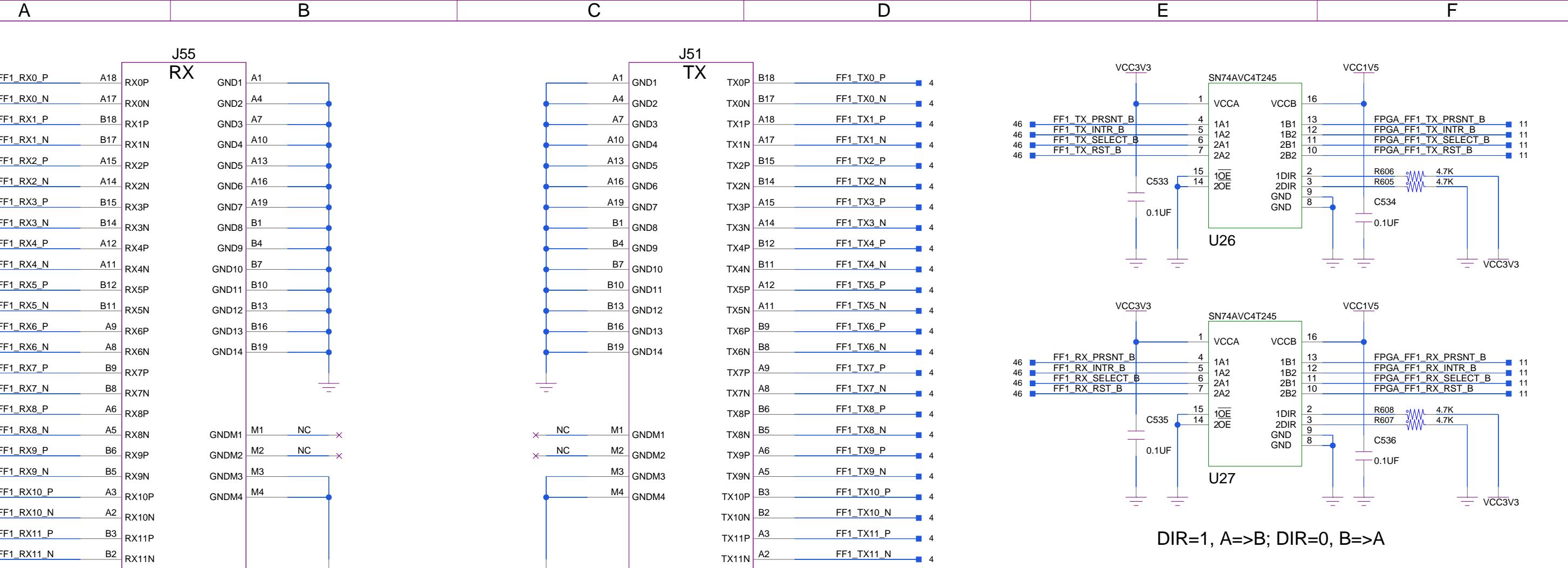


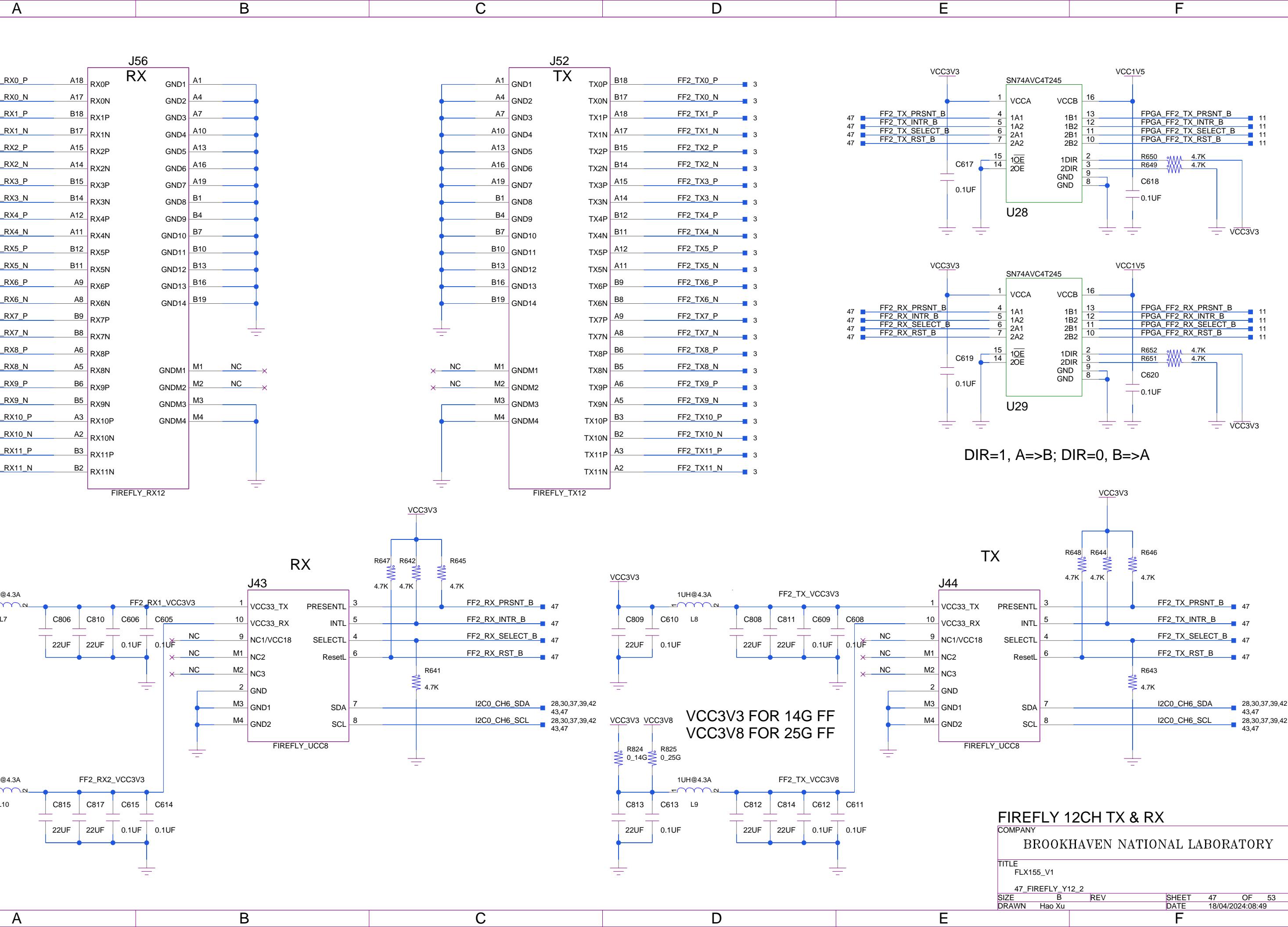


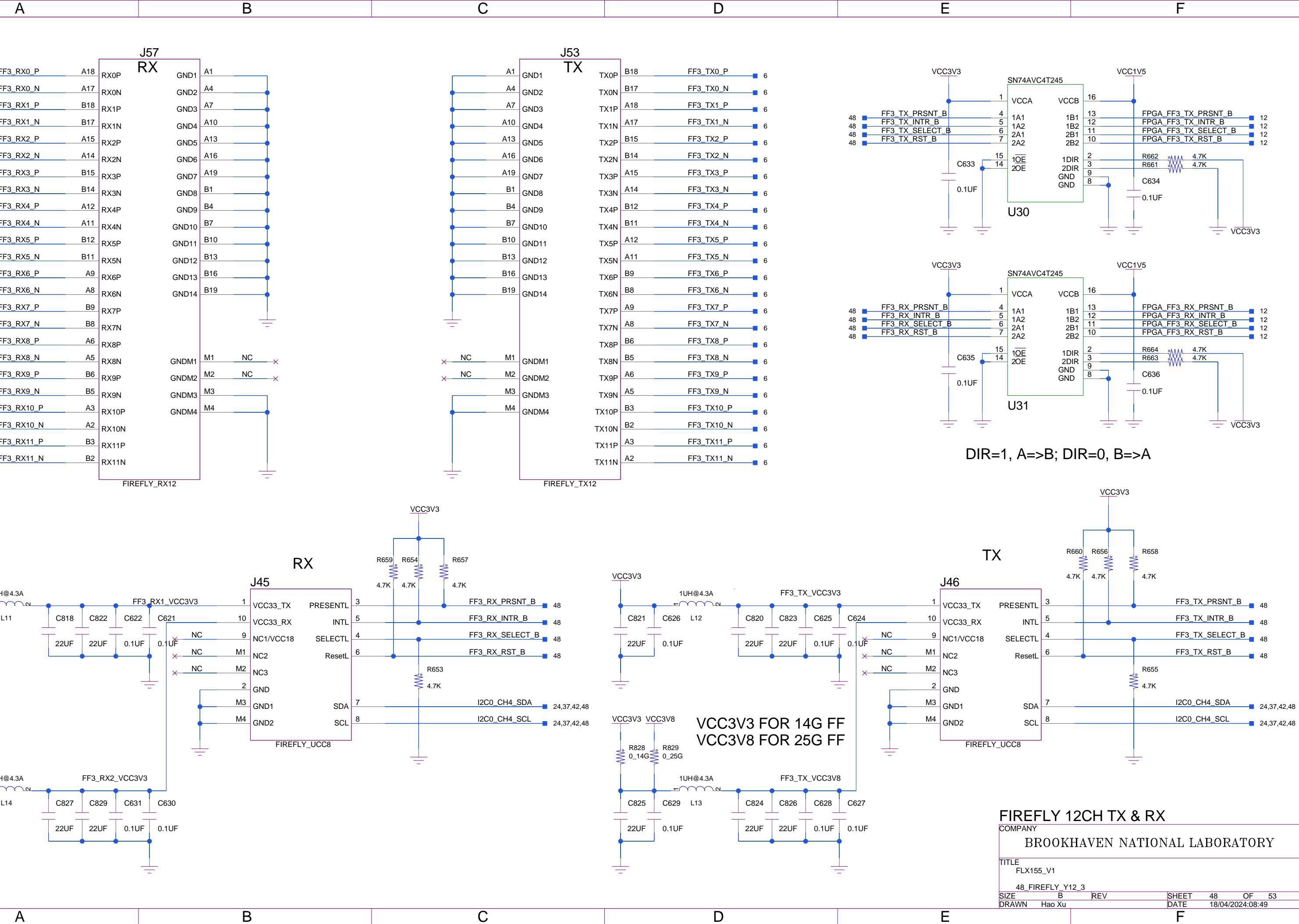


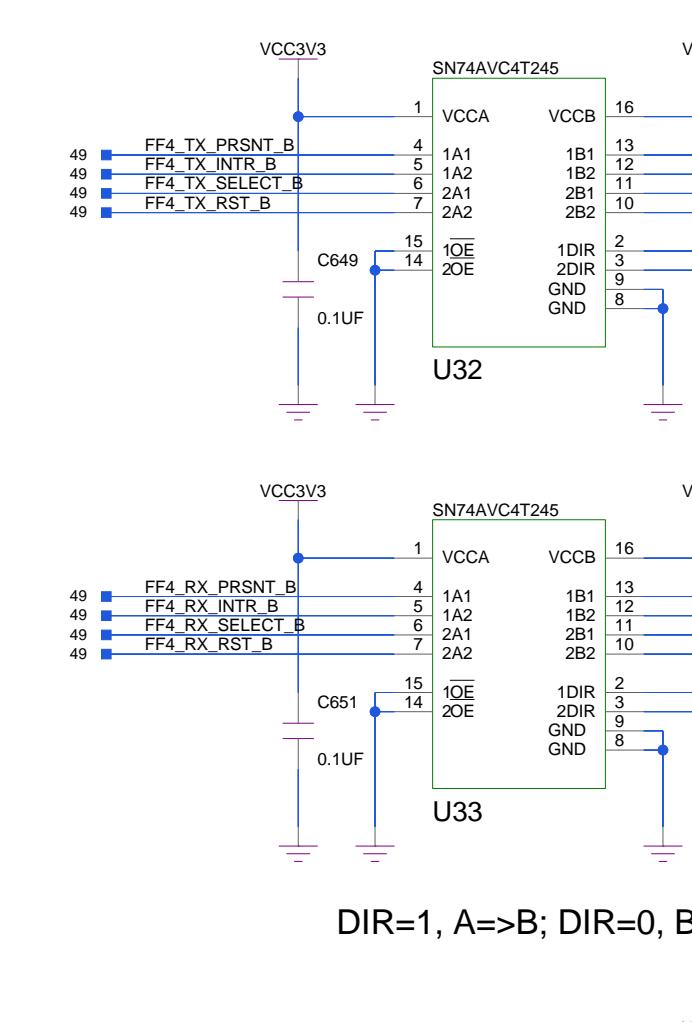
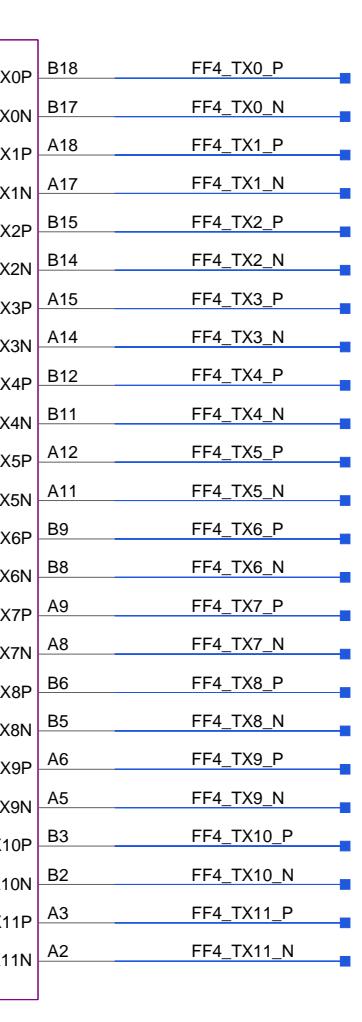
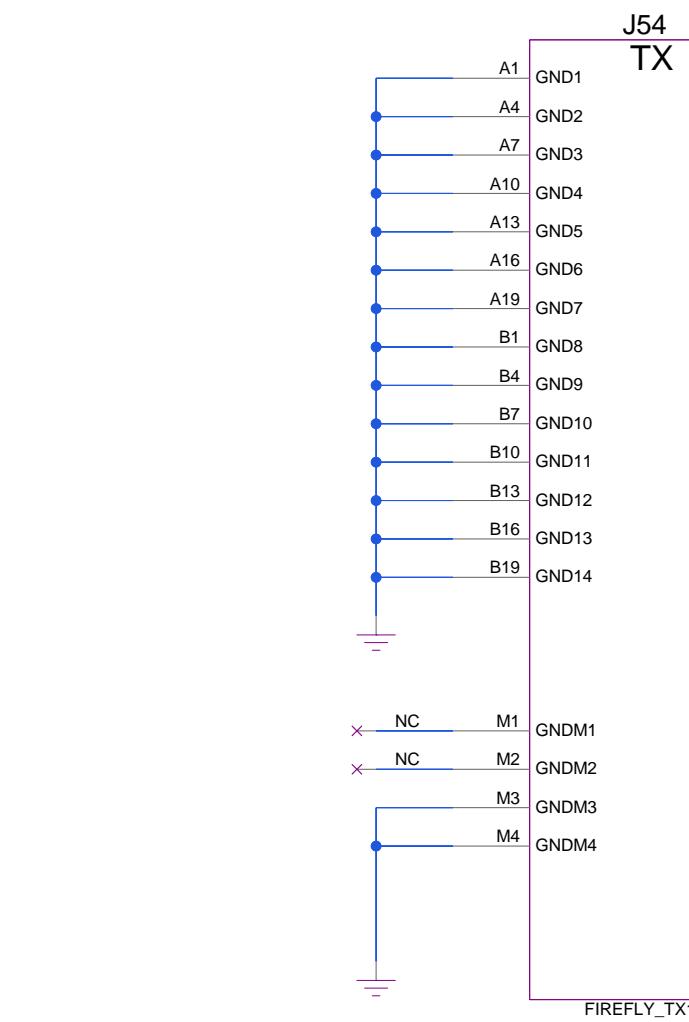
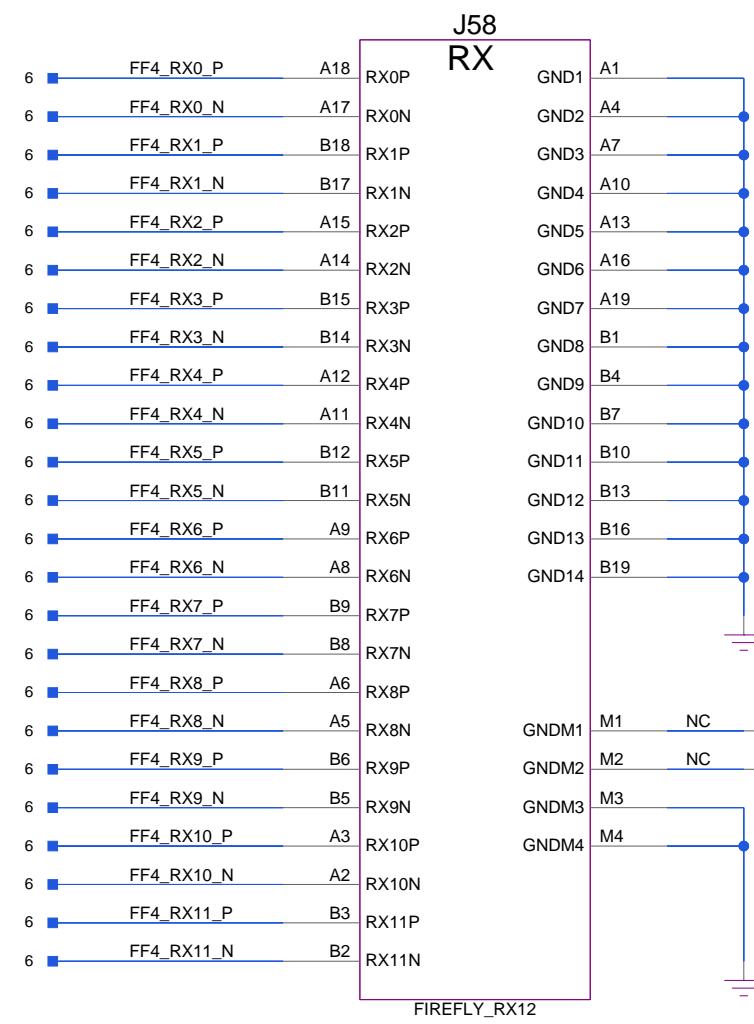
A B C D E F



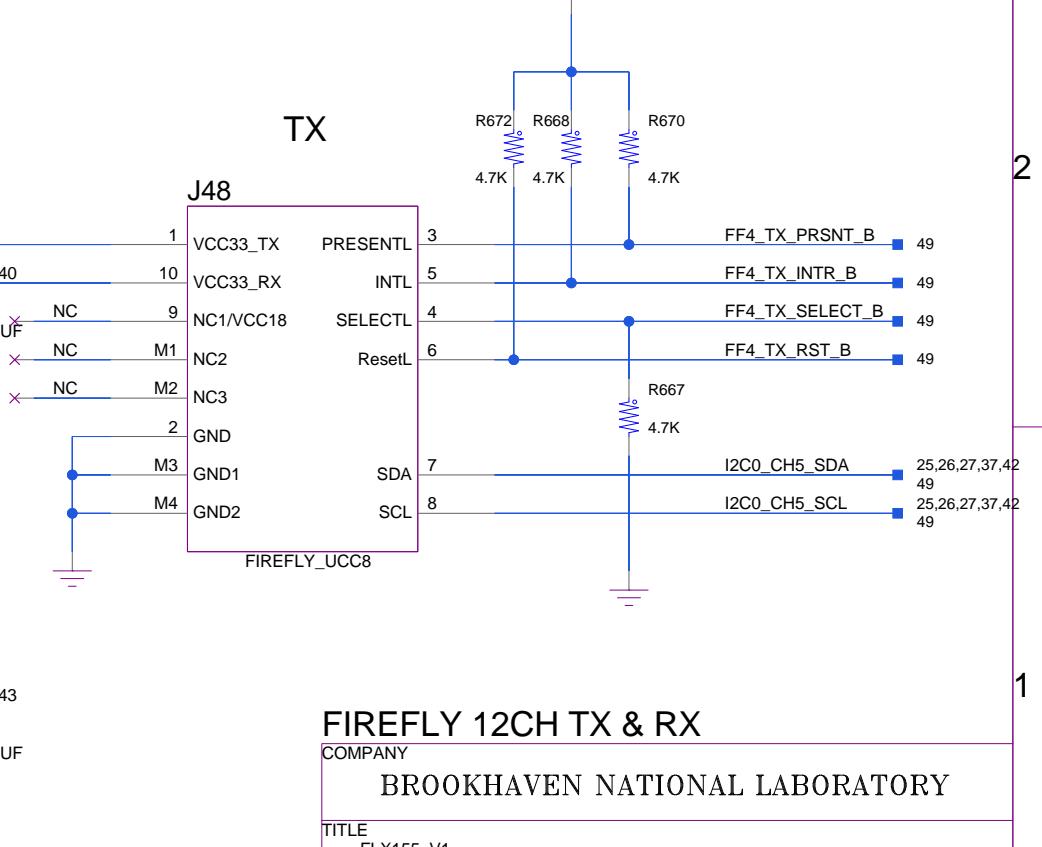
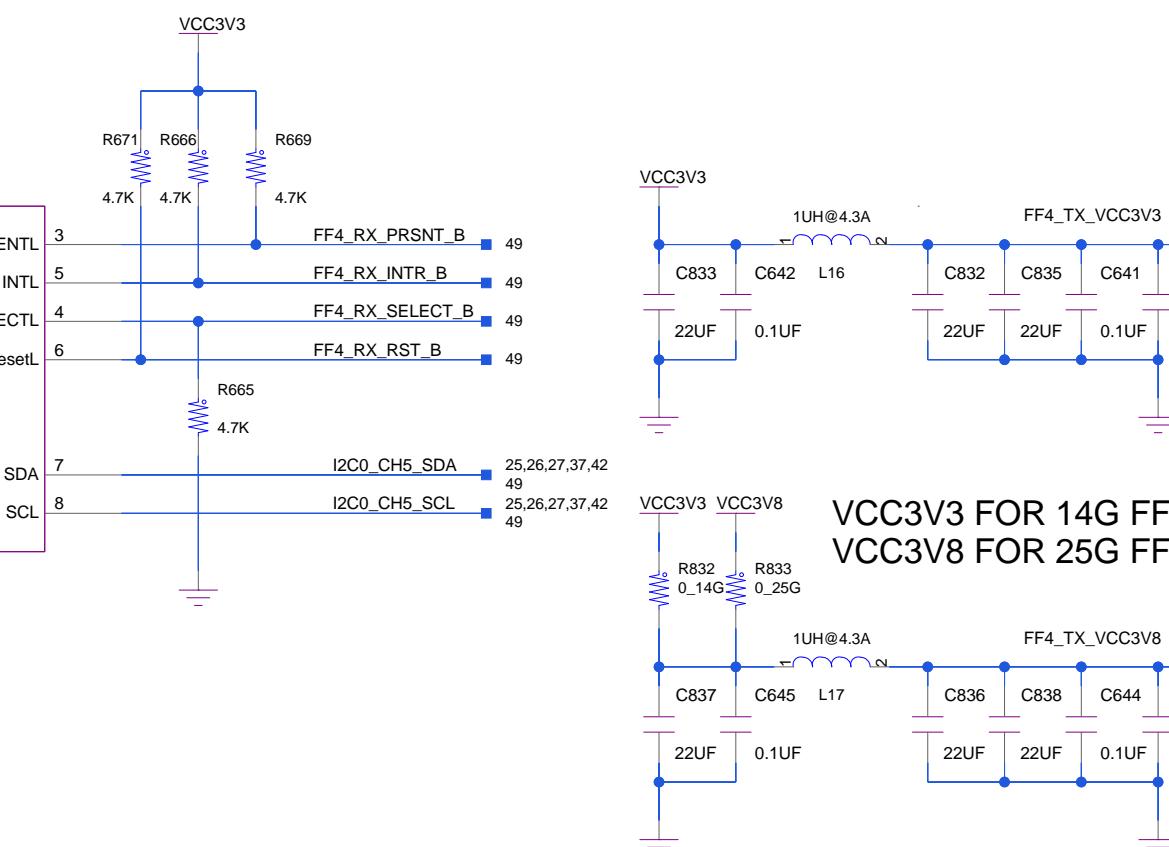
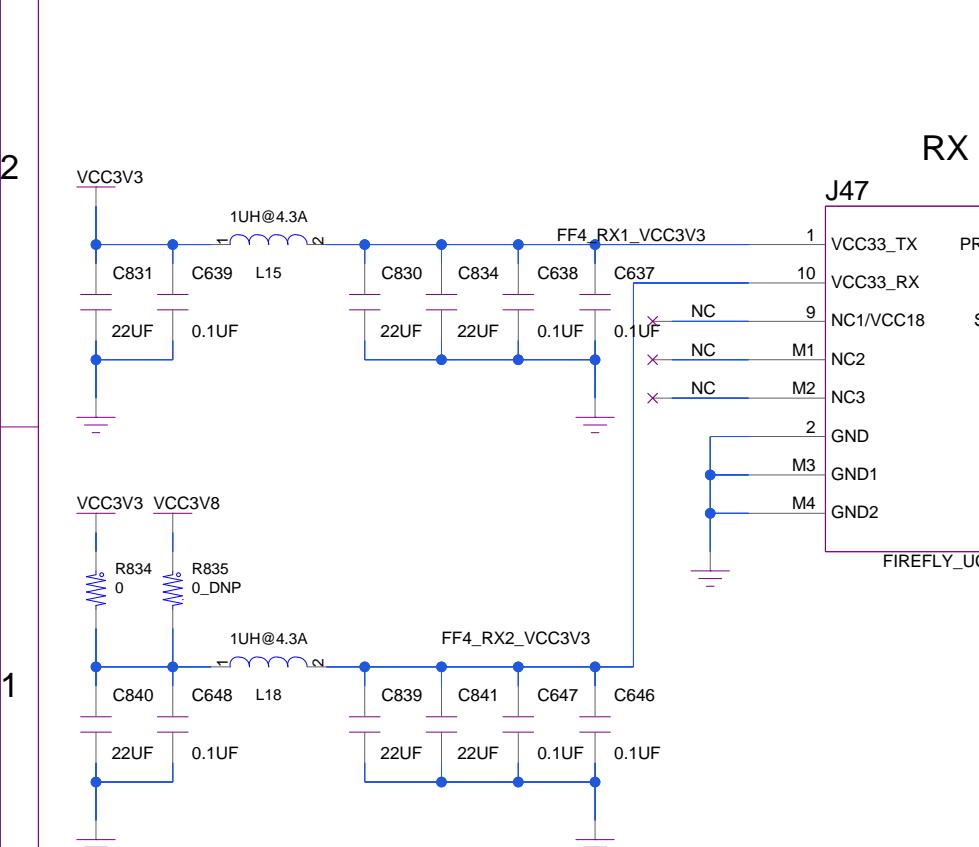








DIR=1, A=>B; DIR=0, B=>A



EIPPEI V 12CH TX & RX

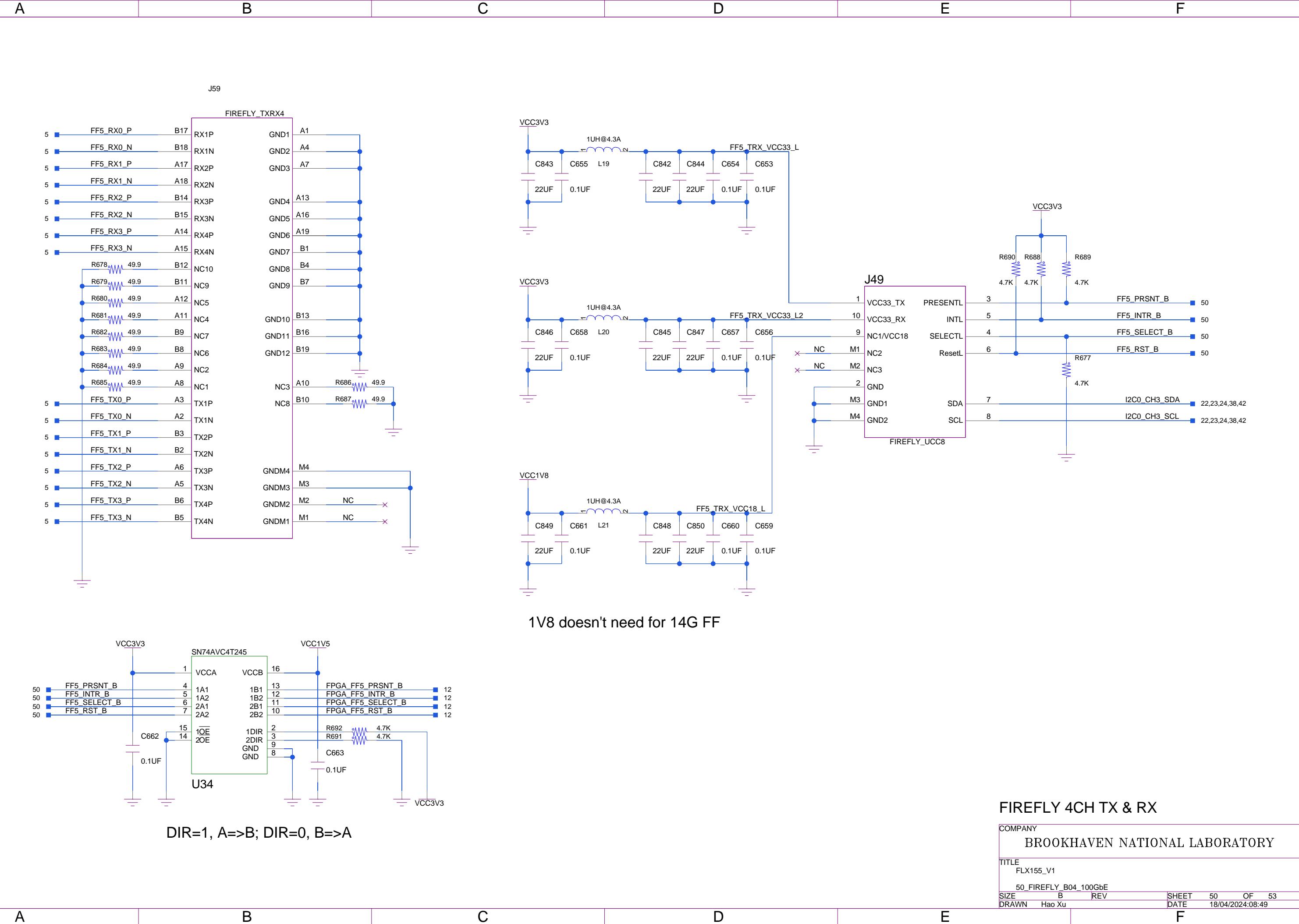
BROOKHAVEN NATIONAL LABORATORY

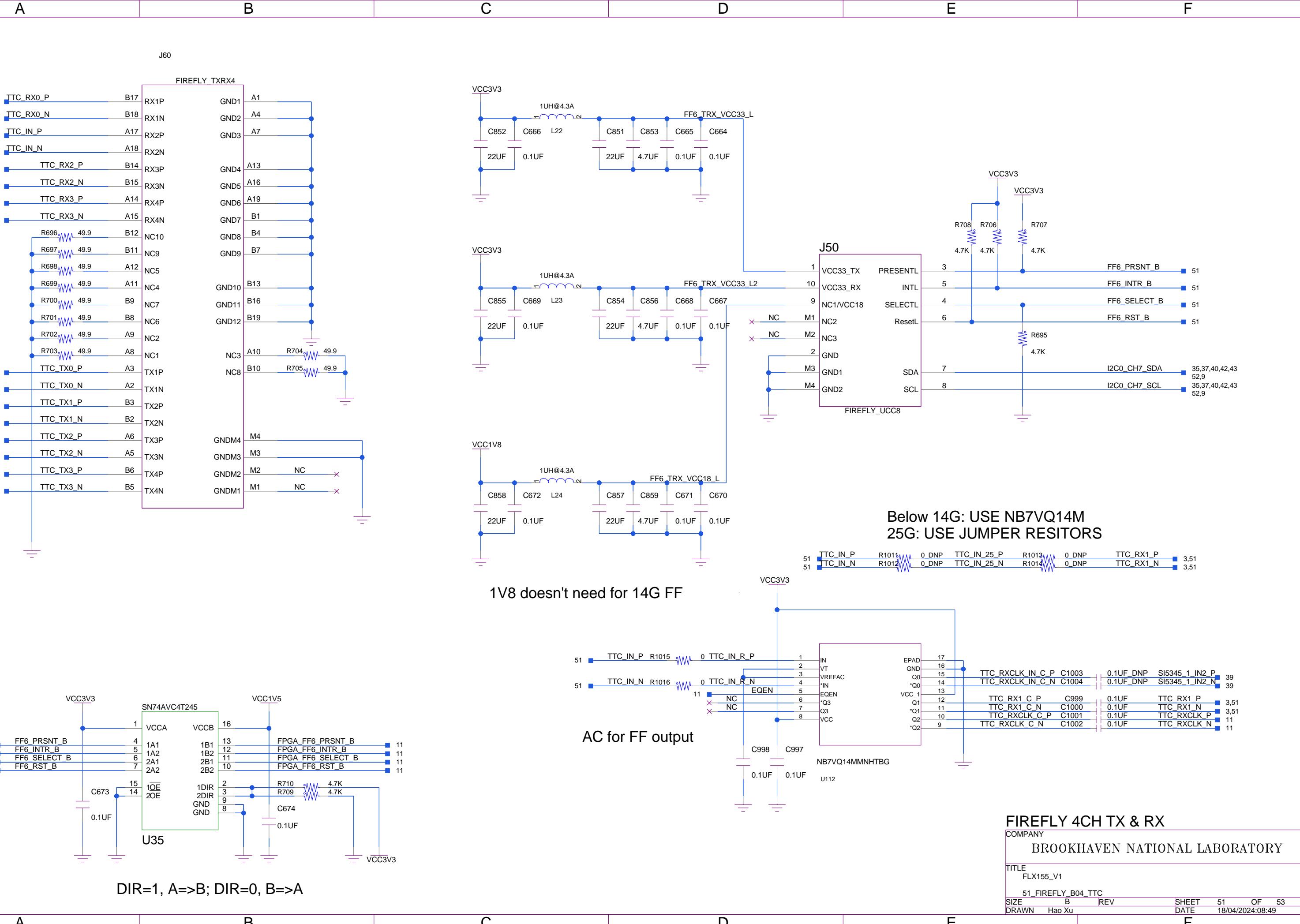
TITLE

FLX155_V1

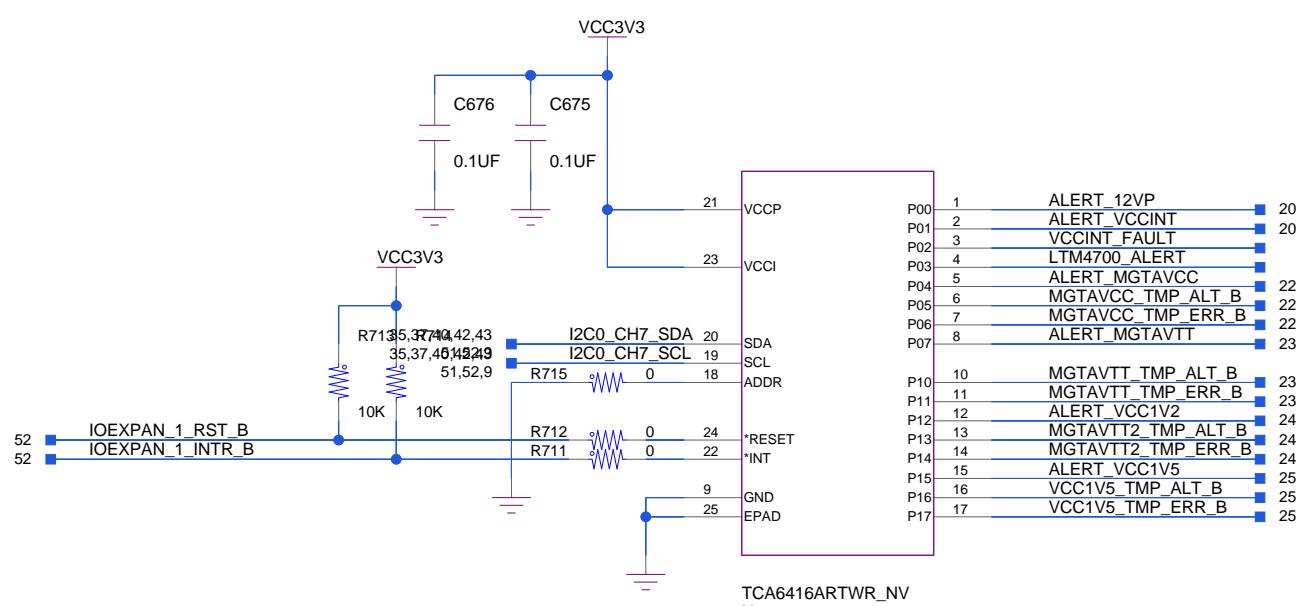
49_FIREFLY_112_4

DRAWN: Hao Xu DATE: 18/04/2024.00.49

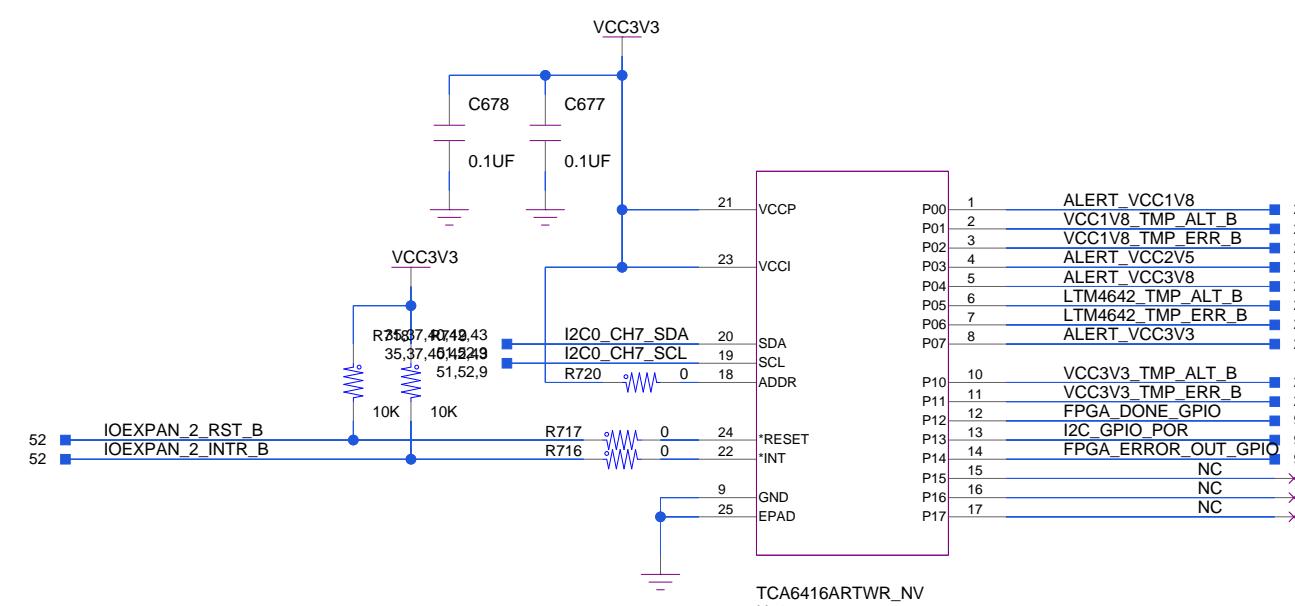




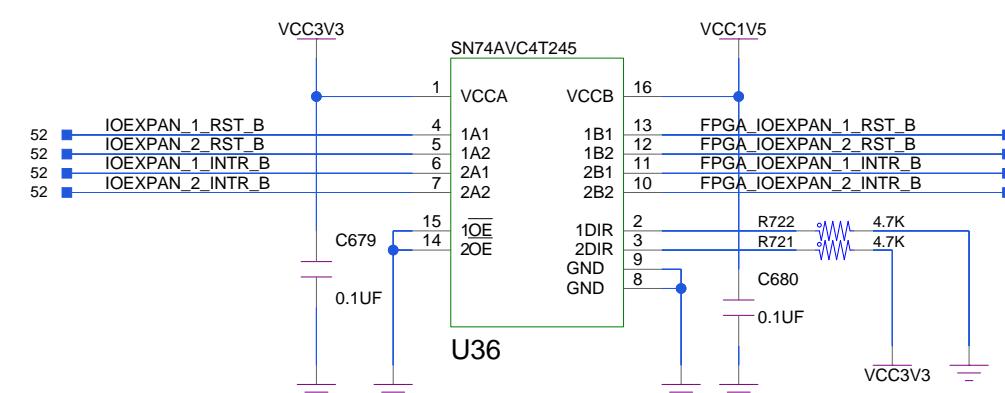
A B C D E F



I2C BUS - Slave Addr: I2C0_CH7 - 0X20 (0b010_0000)



I2C BUS - Slave Addr: I2C0_CH7 - 0X21 (0b010_0001)



DIR=1, A=>B; DIR=0, B=>A

IO EXPANDERS
 COMPANY
 BROOKHAVEN NATIONAL LABORATORY
 TITLE
 FLX155_V1
 52_IO_EXPANDER
 SIZE B REV
 DRAWN Hao Xu SHEET 52 OF 53
 DATE 18/04/2024:08:49

A

B

C

D

E

F

StandOff Components



STANDOFF_0P375



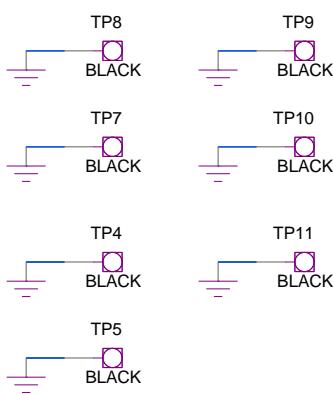
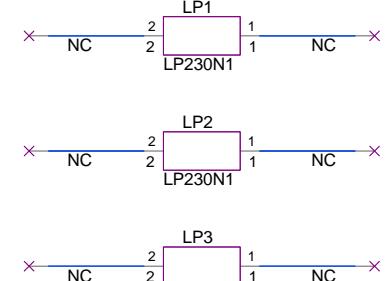
WASHER_FLAT_4



RUBBER_BUMPER



MACHINE_SCREW_4-40

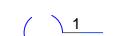


U110



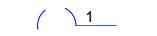
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U111



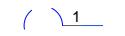
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U113



C300H156

U114



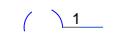
C300H156

U115



C300H156

U116



C300H156

COMPANY	BROOKHAVEN NATIONAL LABORATORY		
TITLE	FLX155_V1		
53_MECHANICAL			
SIZE	B	REV	SHEET
DRAWN	Hao Xu		53 OF 53
DATE	20/12/2023:10:42		

A

B

C

D

E

F