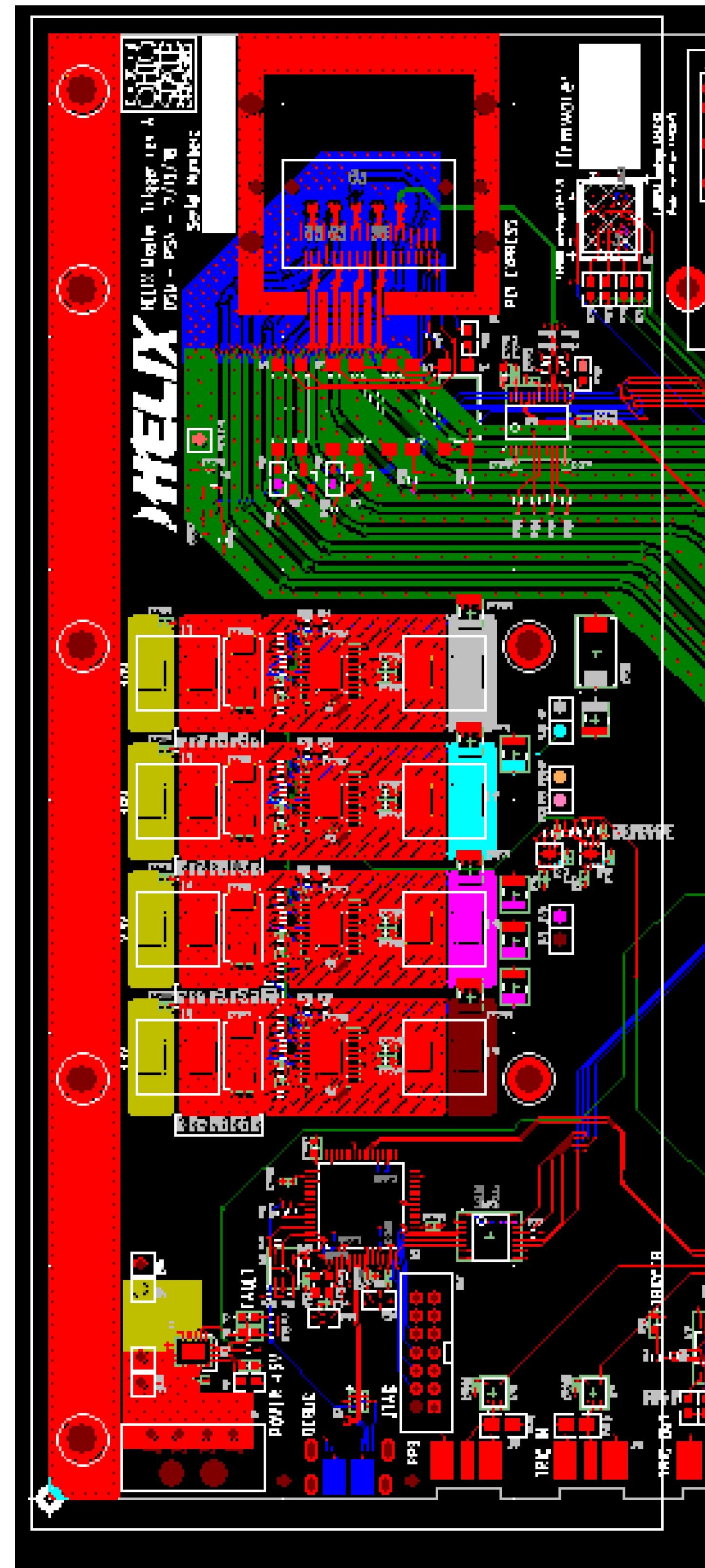
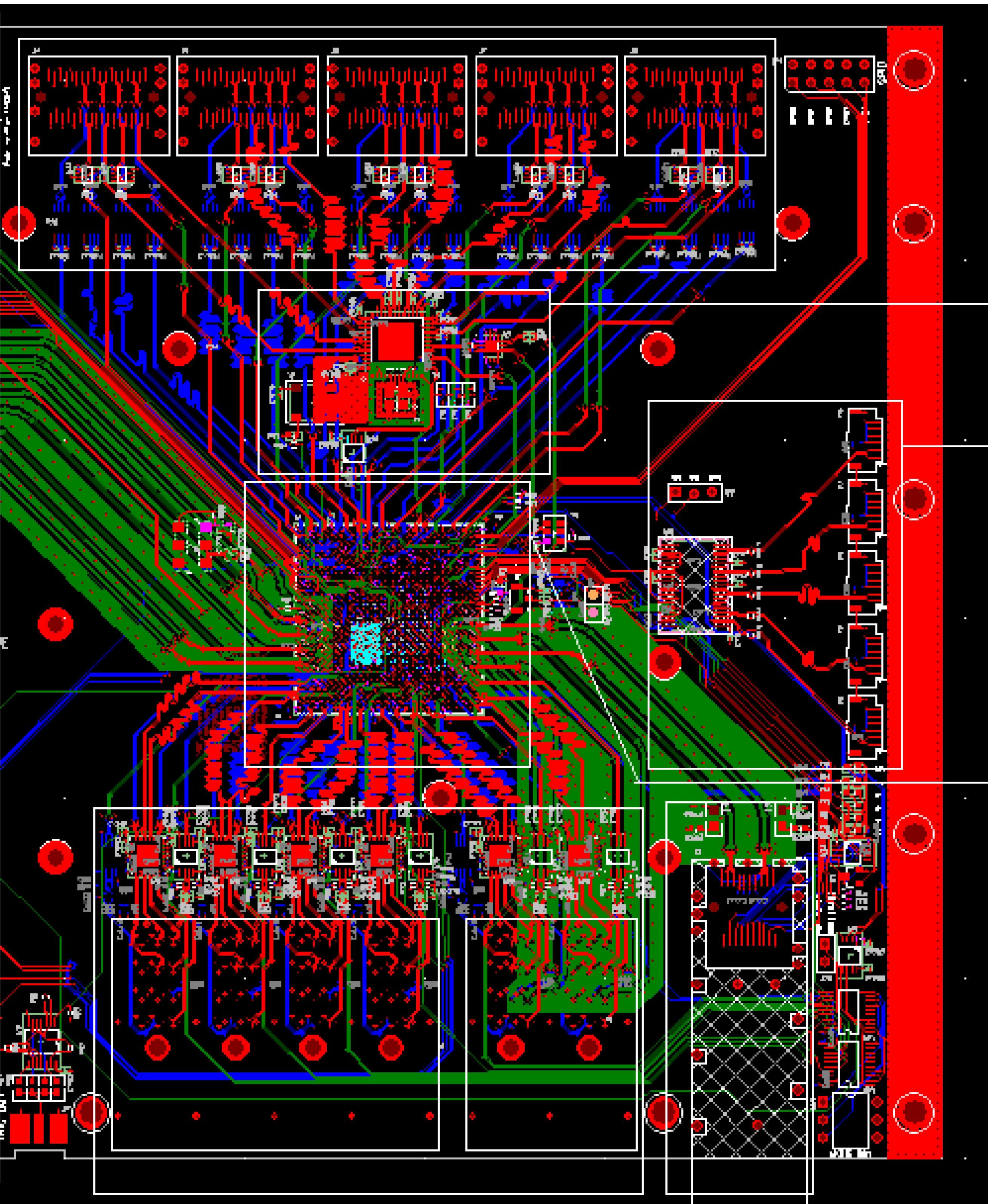


POWER_DEBUG (Sheet 8)



TRIGGER_IN (Sheet 7)



TRIGGER_OUT (Sheet 2) SFP (Sheet 4)

FPGA_IO (Sheet 6) ATRG (Sheet 5) Clock (Sheet 3)

Layer Stackup:

8 Layer Stack-up						
Layer Order	Layer Name	Material Type	Material Description	Dielectric Constant	Thickness	Copper Weight
1	Top	Copper	Signal	0.0014"	1 oz	
		1080 (2 sheets)	Prepreg	4.2	0.0059"	
2	Inner 1	Copper	Plane		0.0014"	1 oz
		Core	Core	4.2	0.009"	
3	Inner 2	Copper	Plane		0.0014"	1 oz
		7628	Prepreg	4.2	0.0073"	
4	Inner 3	Copper	Plane		0.0014"	1 oz
		Core	Core	4.2	0.0051"	
5	Inner 4	Copper	Plane		0.0014"	1 oz
		7628	Prepreg	4.2	0.0073"	
6	Inner 5	Copper	Plane		0.0014"	1 oz
		Core	Core	4.2	0.009"	
7	Inner 6	Copper	Plane		0.0014"	1 oz
		1080 (2 sheets)	Prepreg	4.2	0.0059"	
8	Bottom	Copper	Signal	0.0014"	1 oz	

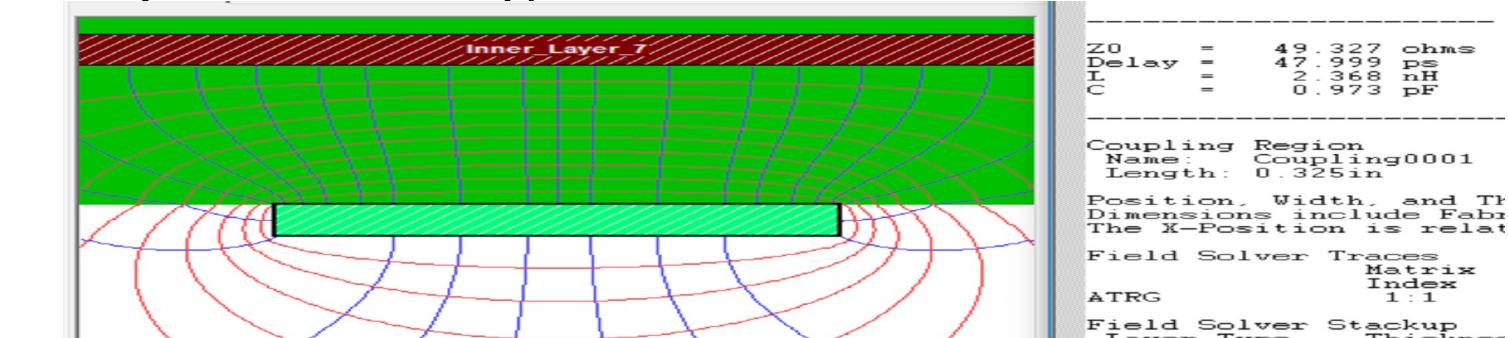
Final board thickness: 0.062" ± 10%

Top/Bottom 50 ohms: 10 mils

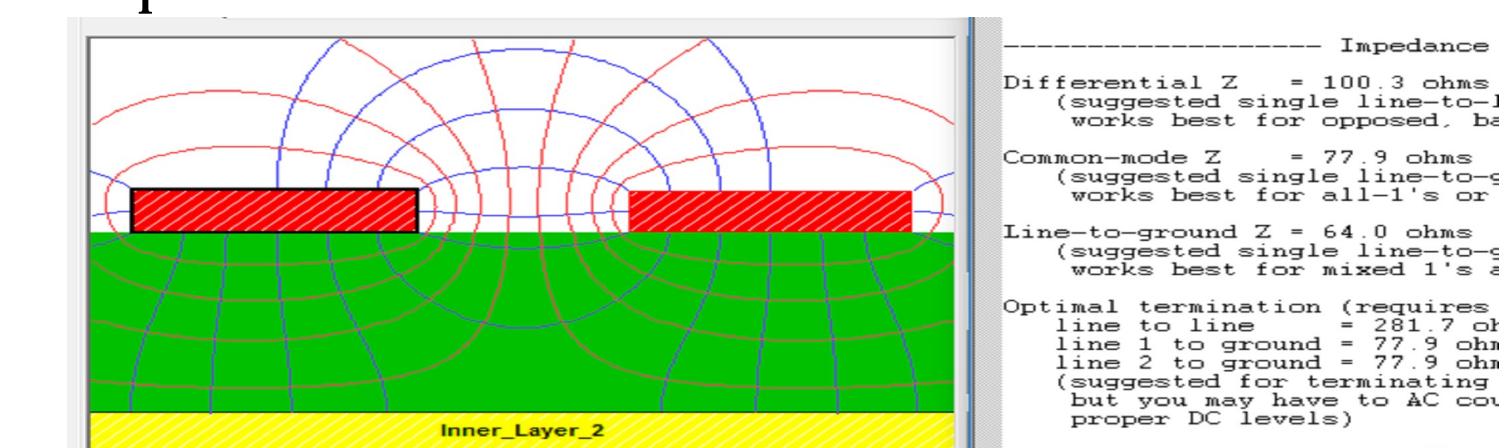
Top/Bottom 100 ohms differential: 6.3/4.7 trace/space

Layer 3 100 ohms differential: 4/7 trace/space

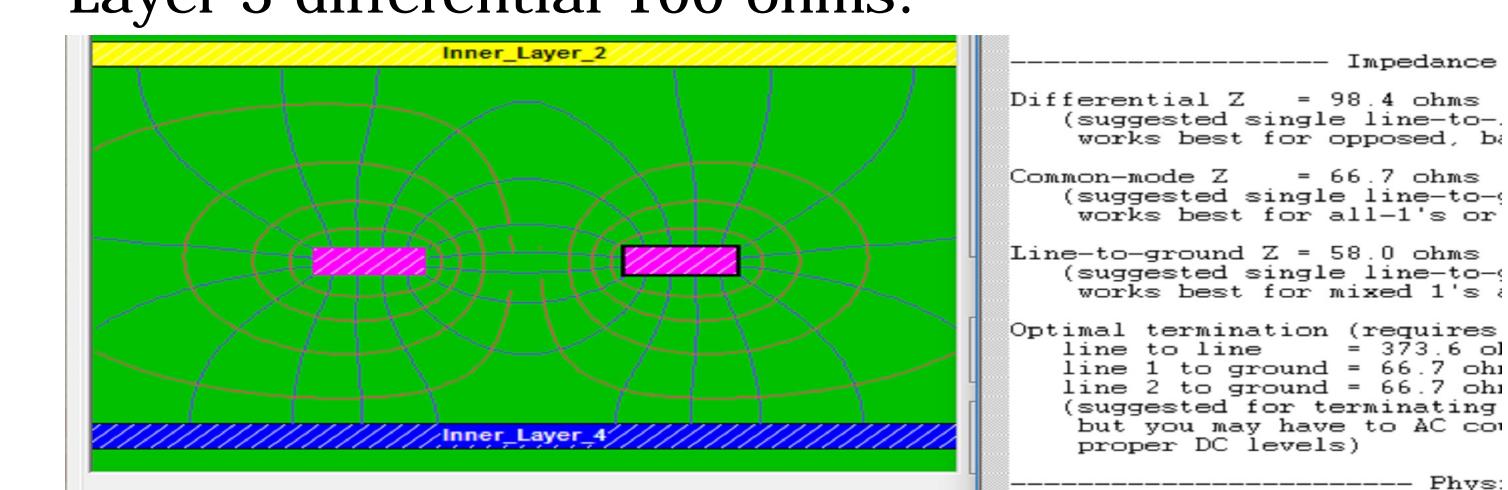
Top/Bottom single-ended 50 ohms:



Top/Bottom differential 100 ohms:

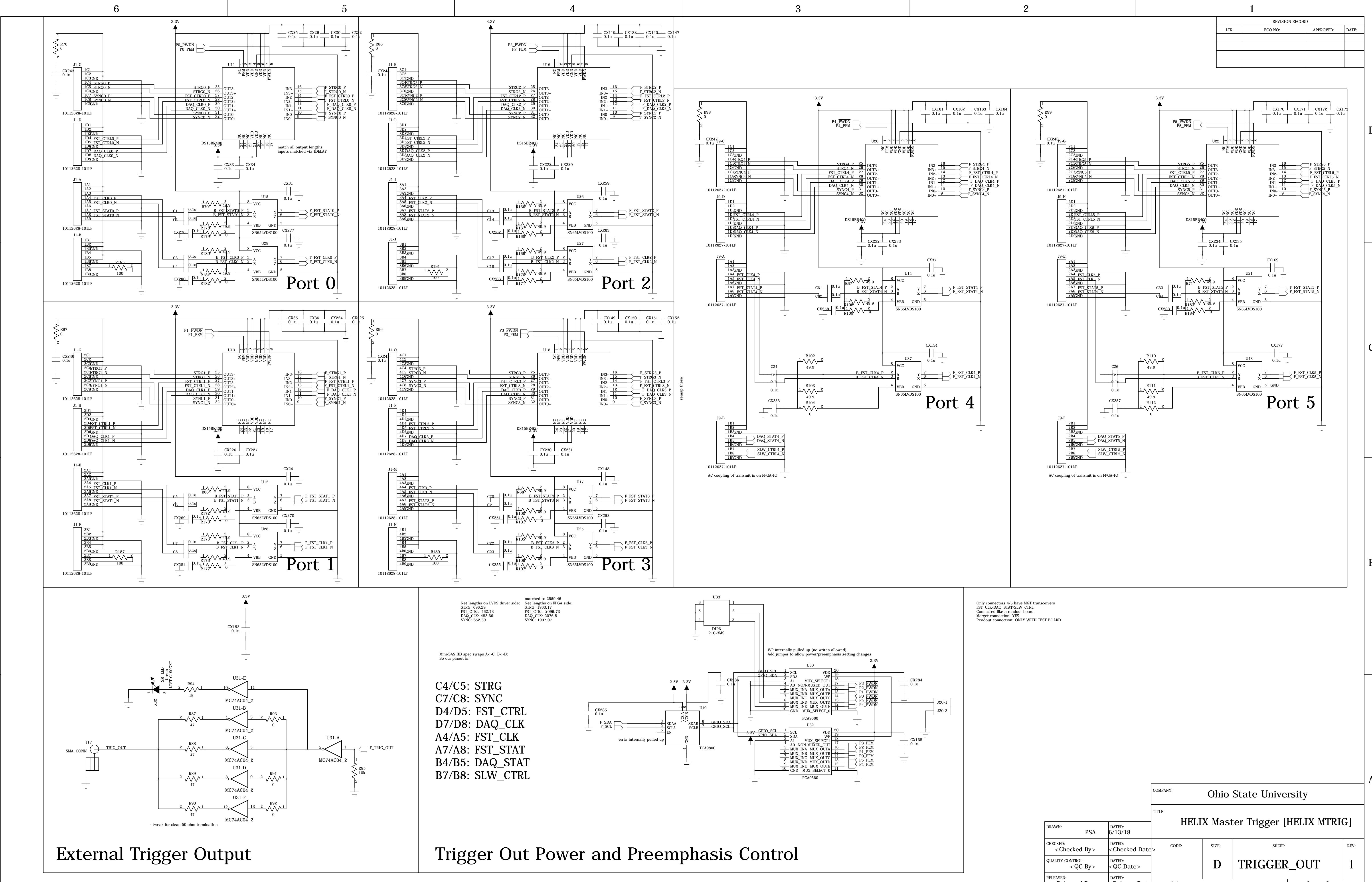


Layer 3 differential 100 ohms:



Ohio State University

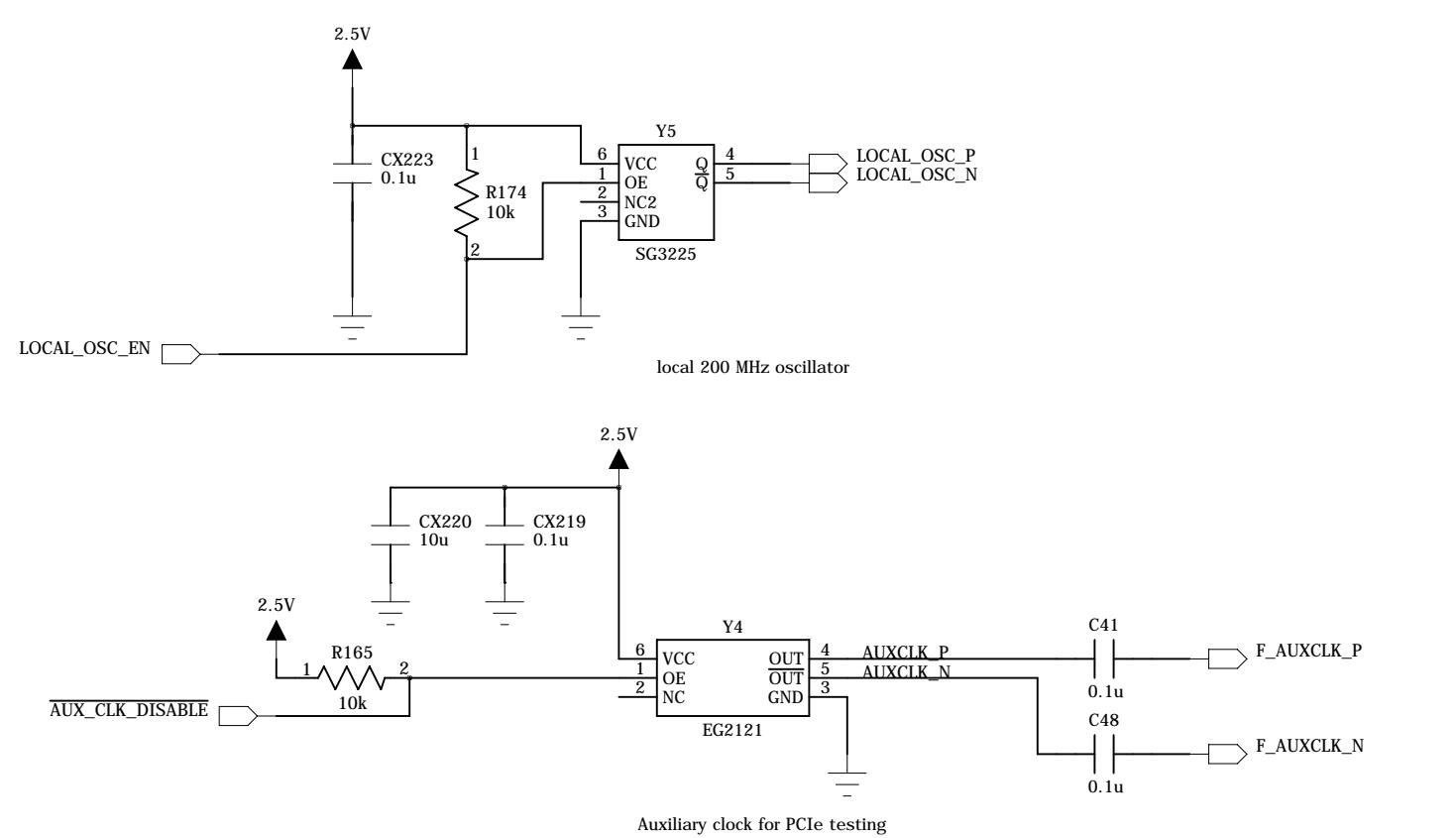
COMPANY:	Ohio State University		
TITLE:	HELIX Master Trigger [HELIX MTRIG]		
DRAWN:	PSA	DATED:	6/13/18
CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>
SCALE:	1:1		
SHEET:	1 OF 8		



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

D

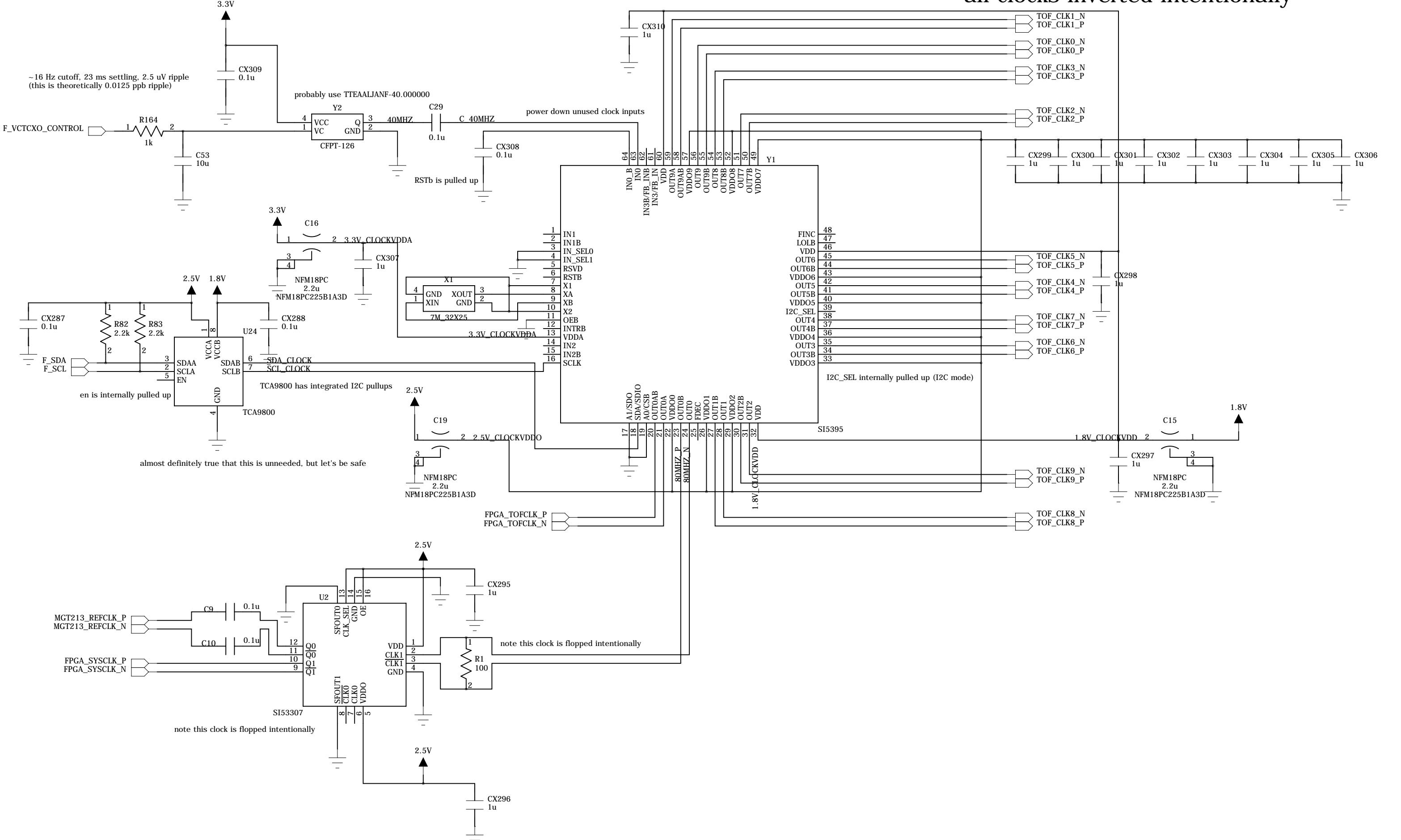
D



all clocks inverted intentionally

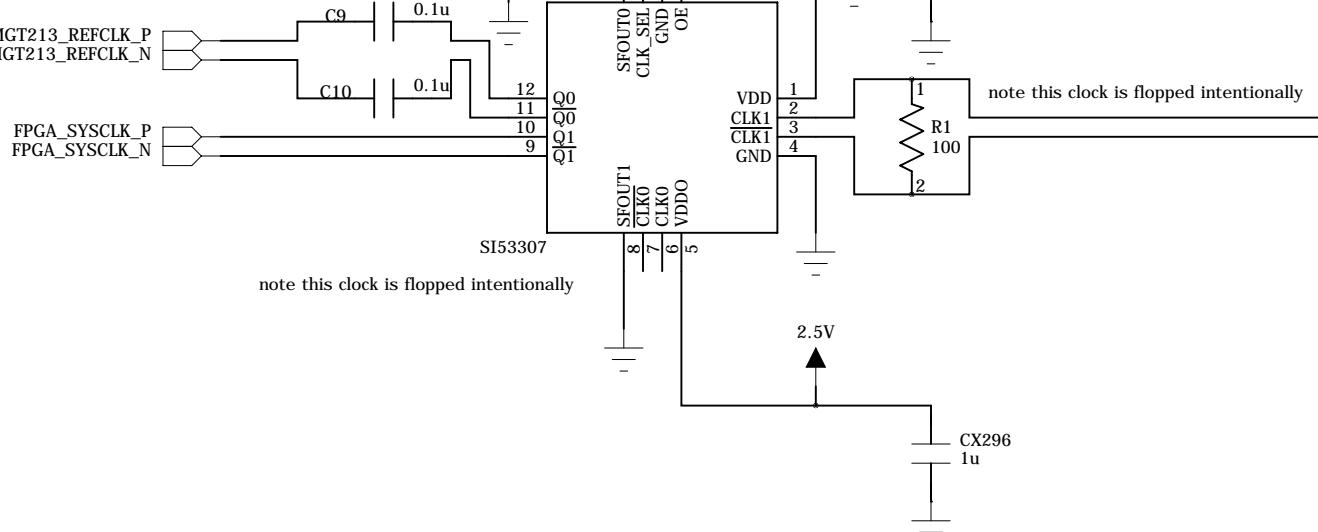
C

C



B

B



A

A

COMPANY: Ohio State University			
TITLE: HELIX Master Trigger [HELIX MTRIG]			
DRAWN:	PSA	DATED:	6/13/18
CHECKED:	<Checked By>	DATED:	<Checked Date>
QUALITY CONTROL:	<QC By>	DATED:	<QC Date>
RELEASED:	<Released By>	DATED:	<Release Date>
		SCALE:	1:1
		HEET:	3 of 8

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

D

D

C

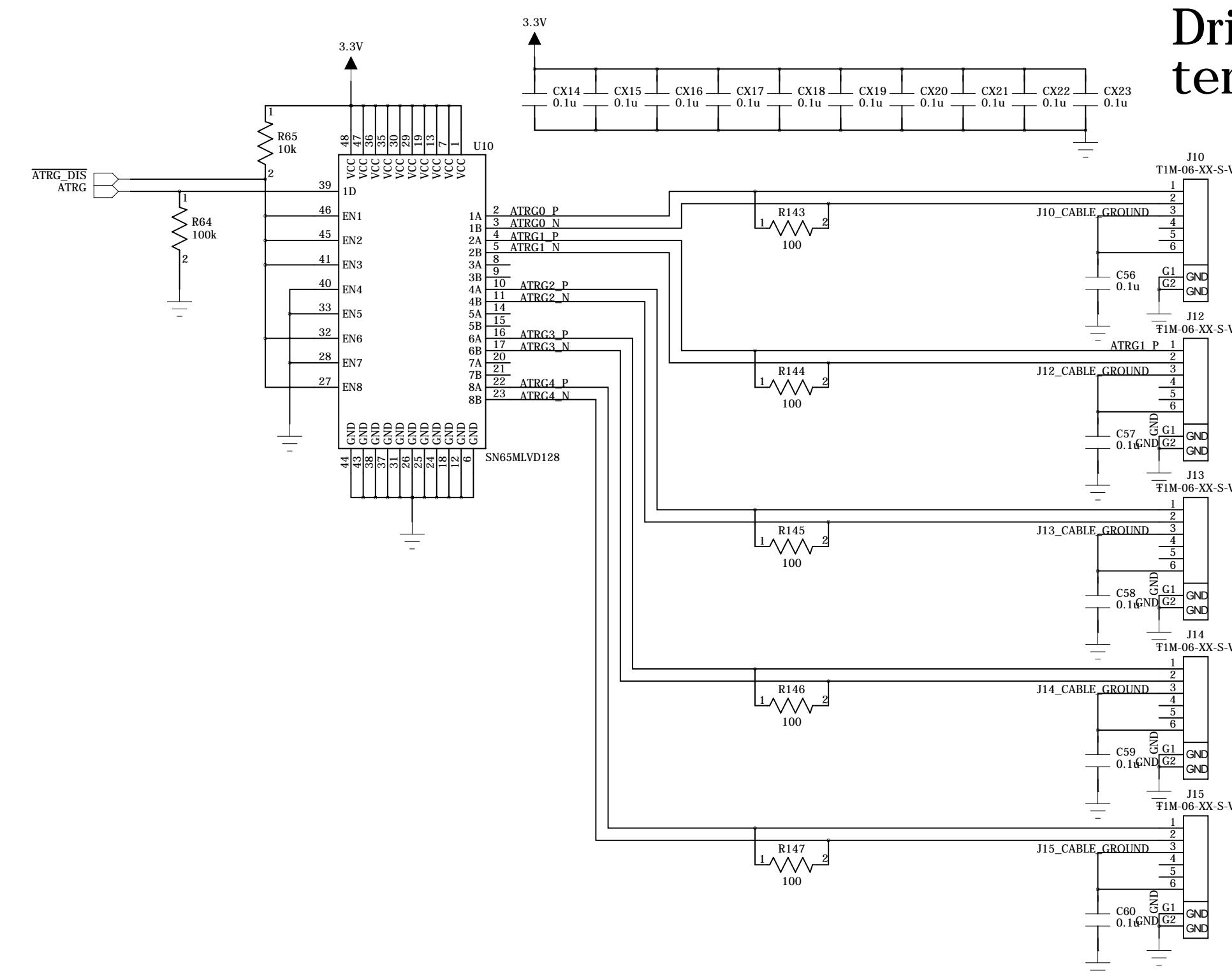
C

B

B

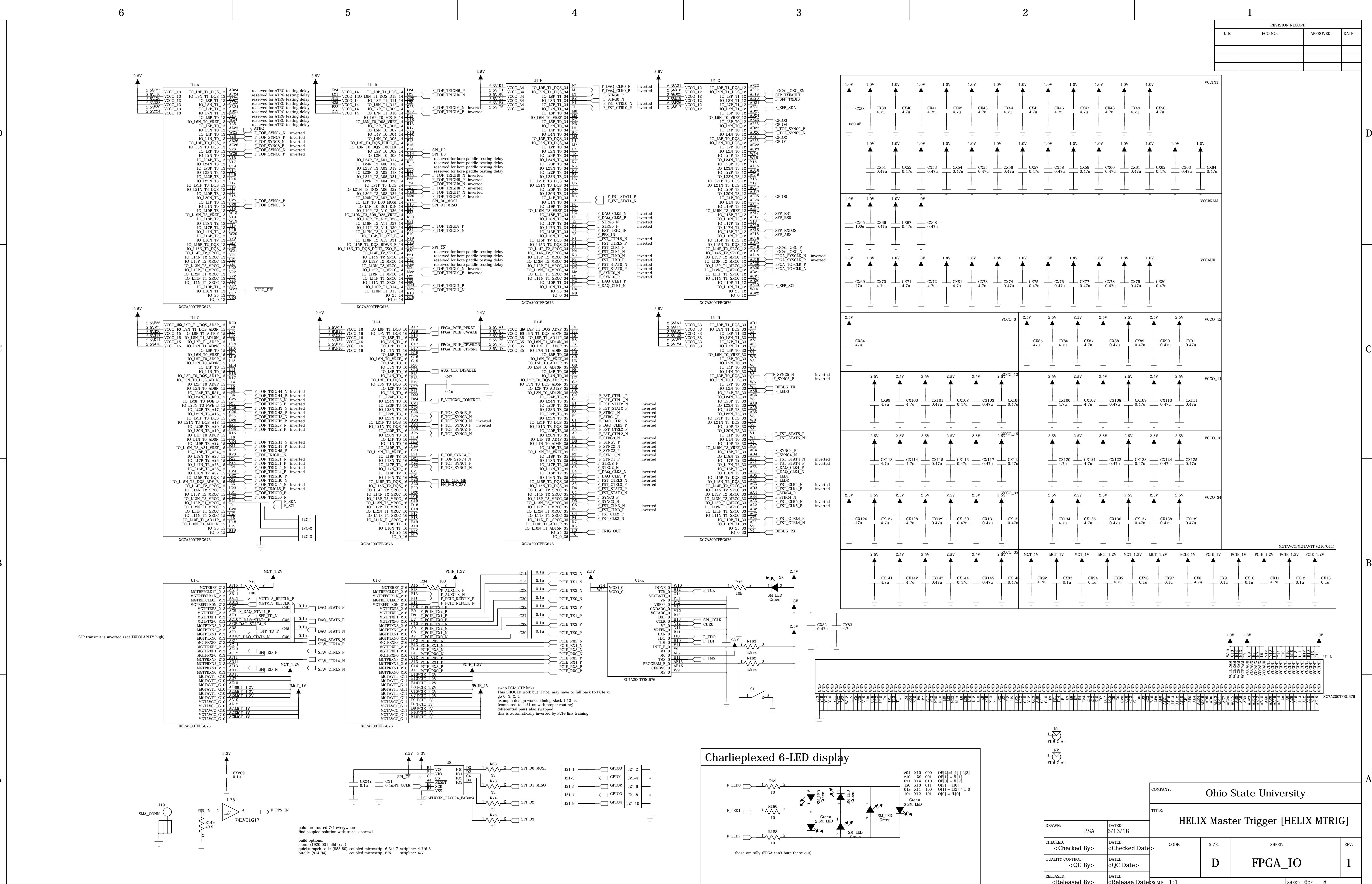
A

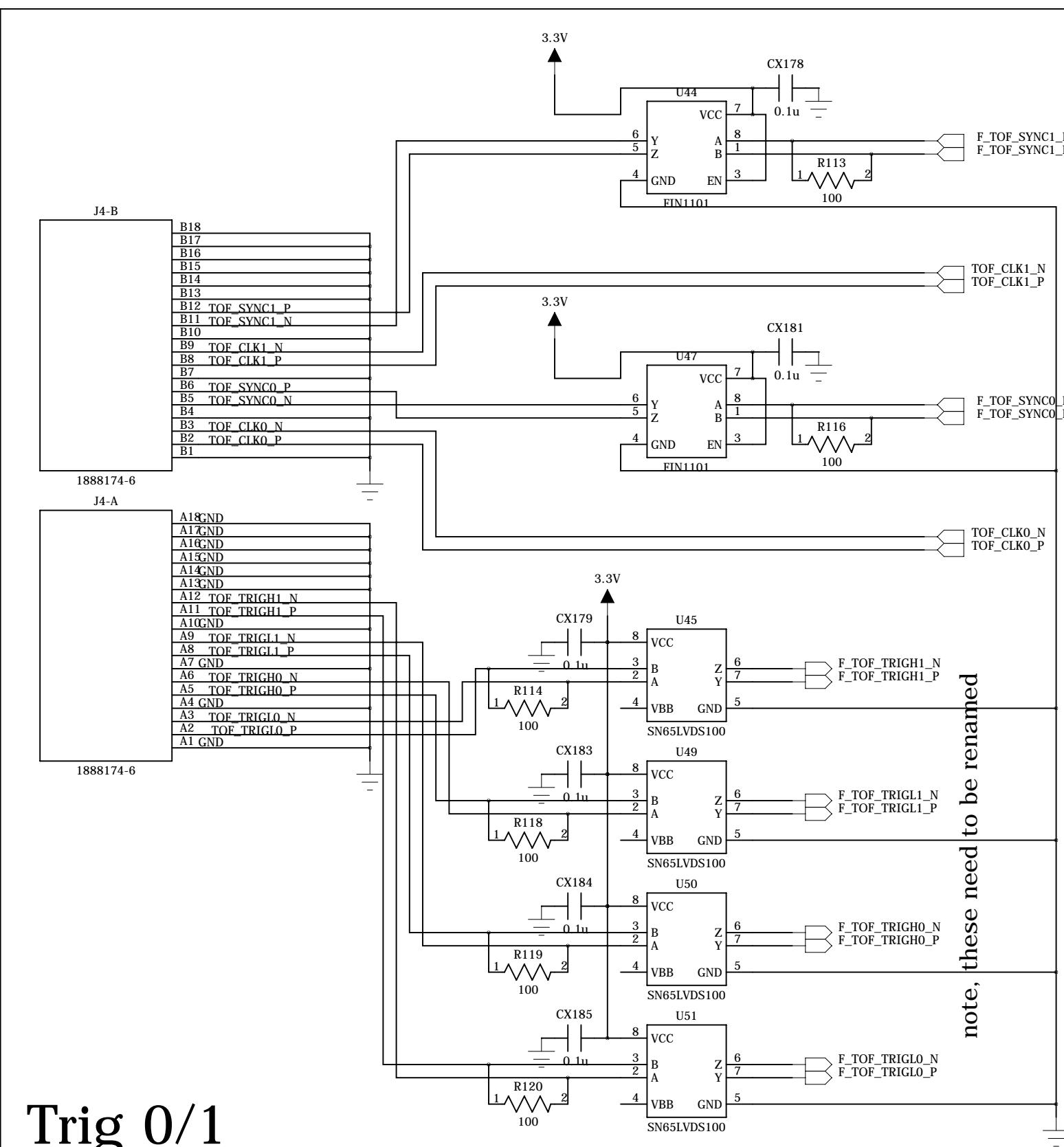
A



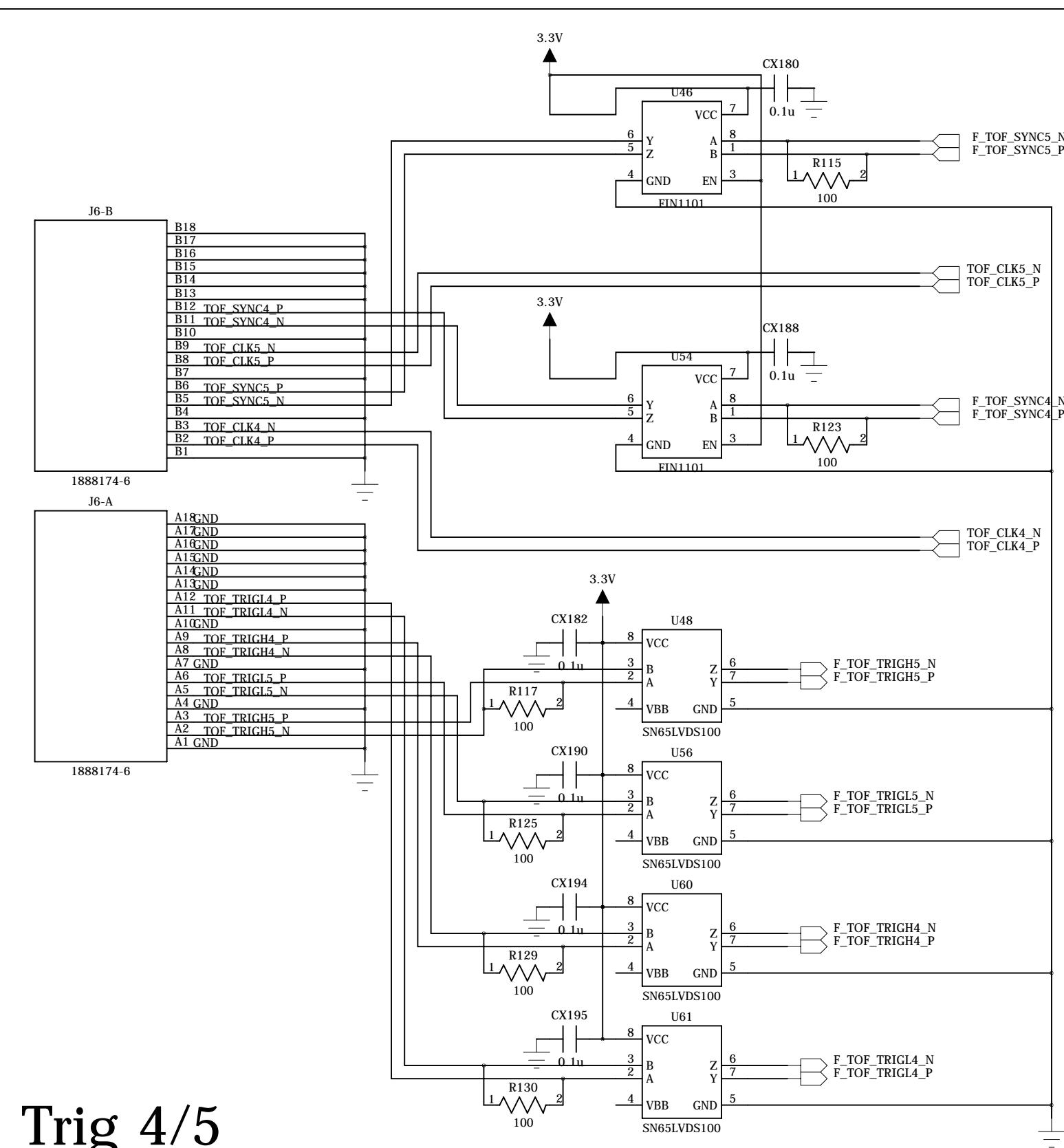
Drive only pins 1/2
terminate 100 ohms at beginning/end to meet LVDS spec

COMPANY: Ohio State University	TITLE: HELIX Master Trigger [HELIX MTRIG]		
DRAWN: PSA	DATED: 6/13/18	CODE: D	SIZE: ATRG
CHECKED: <Checked By>	DATED: <Checked Date>	SHEET: 1	REV:
QUALITY CONTROL: <QC By>	DATED: <QC Date>		
RELEASED: <Released By>	DATED: <Release Date>	SCALE: 1:1	sheet: 5 of 8

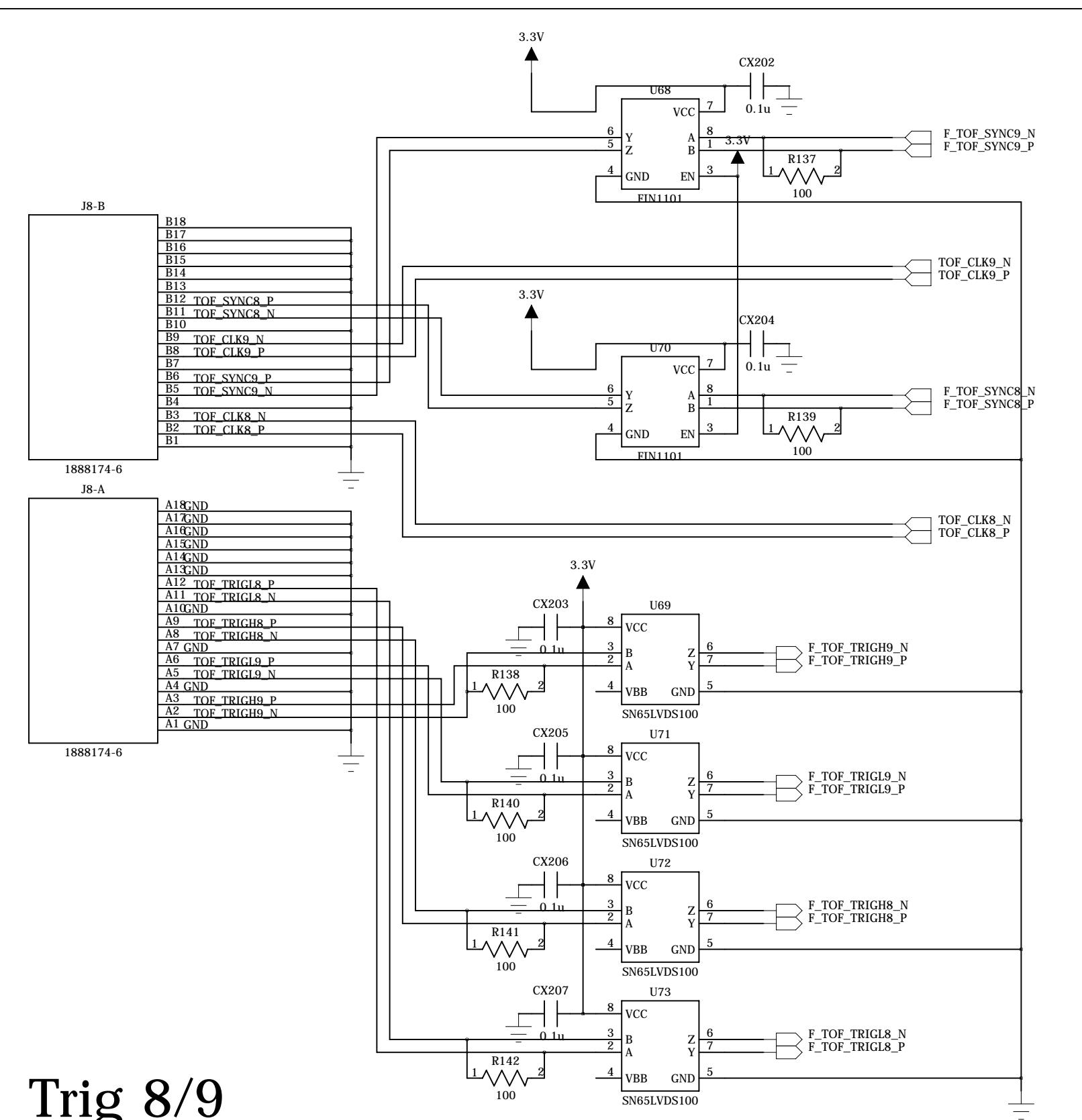




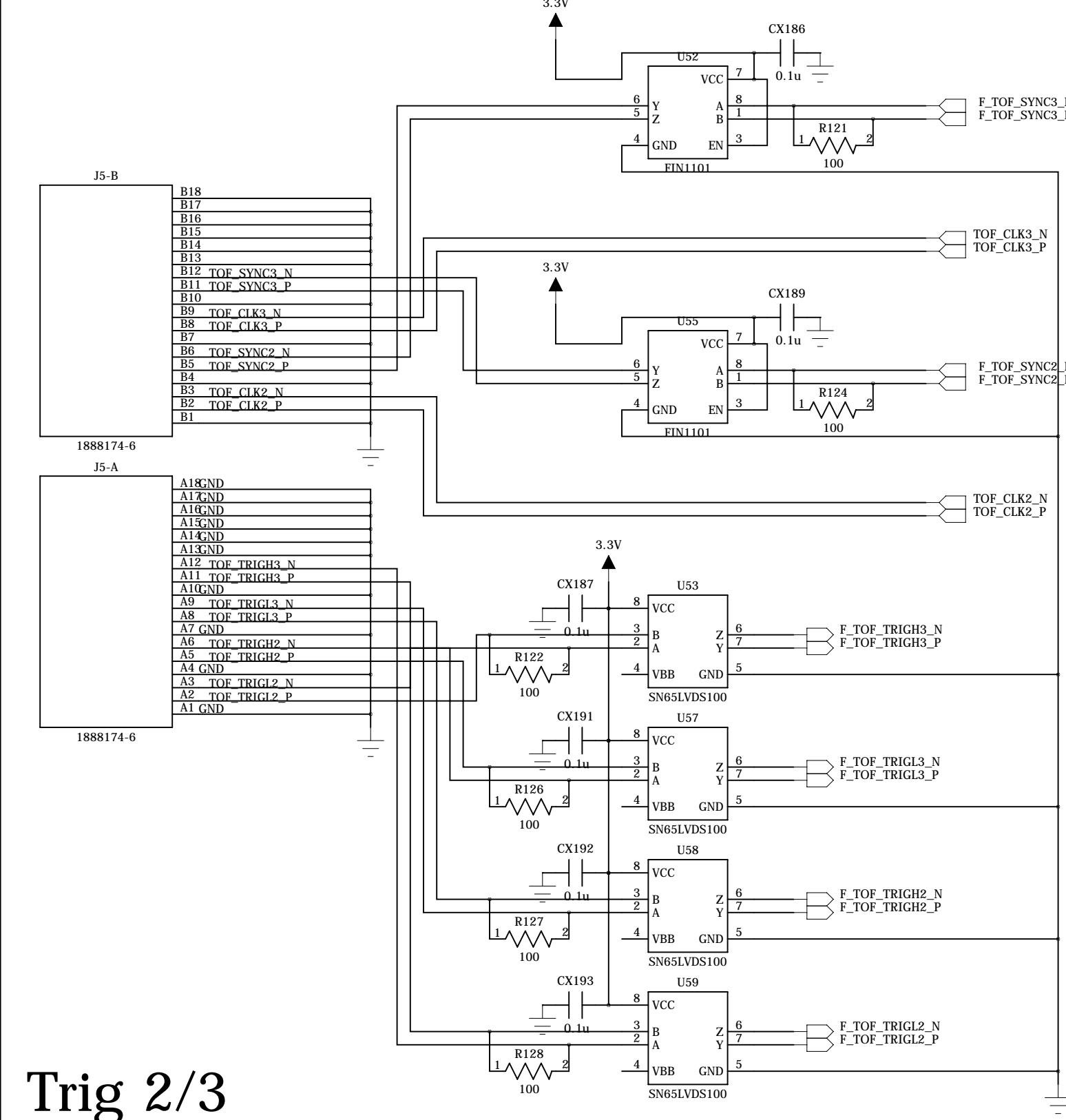
Trig 0/1



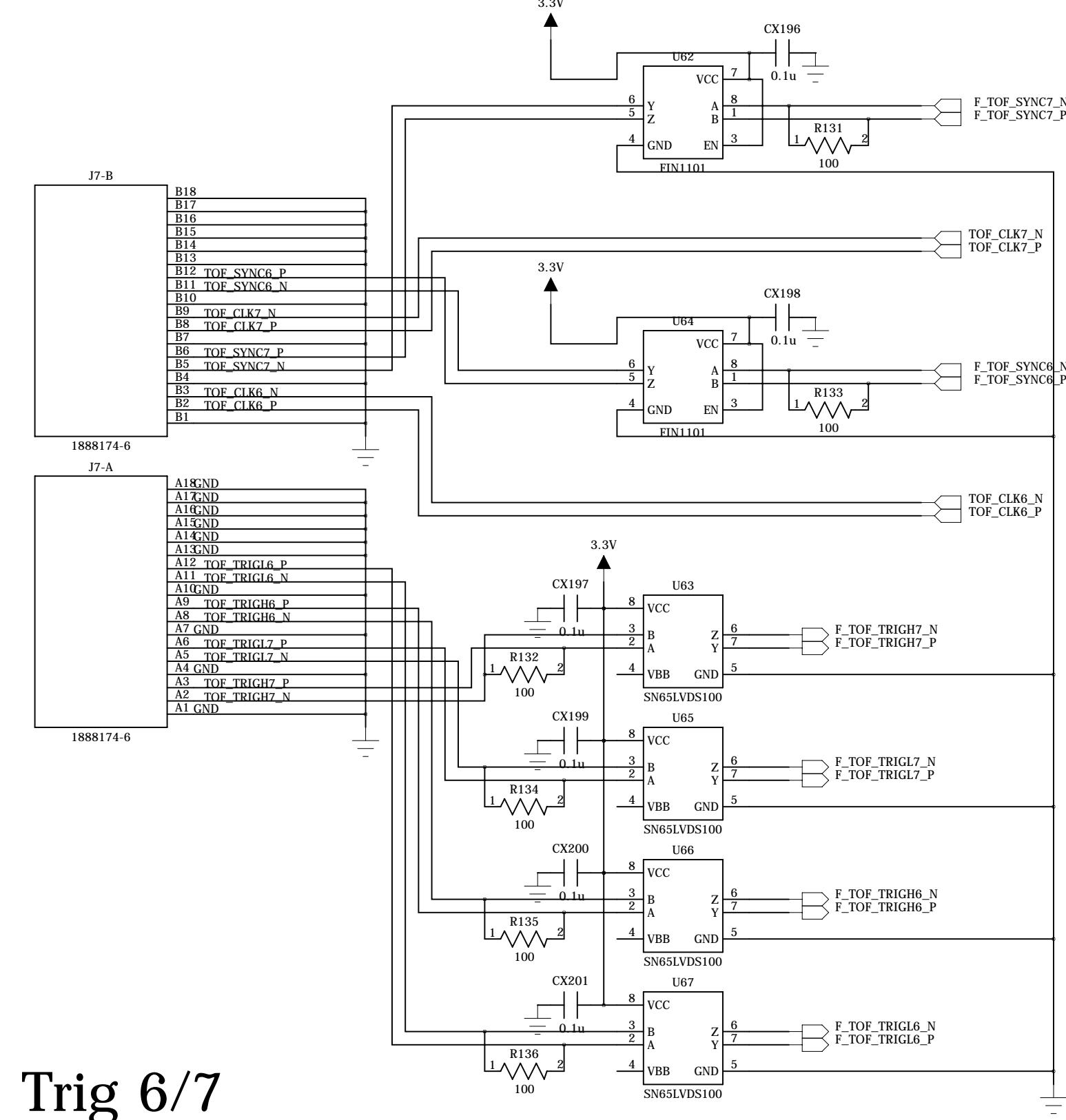
Trig 4/5



Trig 8/9



Trig 2/3



Trig 6/7

DRAWN: PSA		DATED: 6/13/18	TITLE: HELIX Master Trigger [HELIX MTRIG]			
CHECKED: <Checked By>	DATED: <Checked Date>	CODE: D	SIZE: TRIGGER_IN	SHEET:		REV:
QUALITY CONTROL: <QC By>	DATED: <QC Date>					
RELEASED: <Released By>	DATED: <Release Date>			SCALE: 1:1		SHEET: 7 OF 8

Ohio State University

HELIIX Master Trigger [HELIIX_MTRIG]

Master 11-88 [REDACTED]

ODE: SIZE: SHEET: REV:

D	TRIGGER_IN	T
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SHEET: 7 OF 8

