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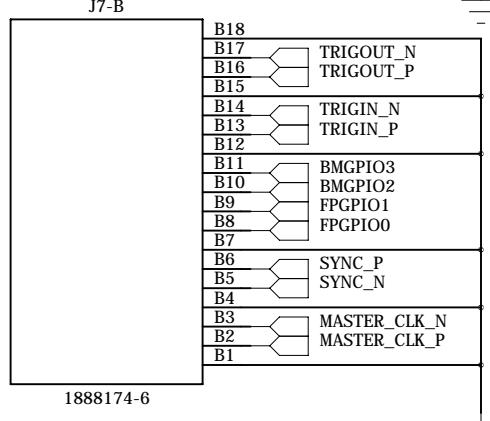
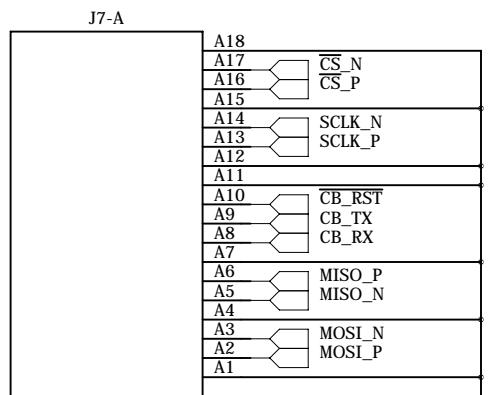
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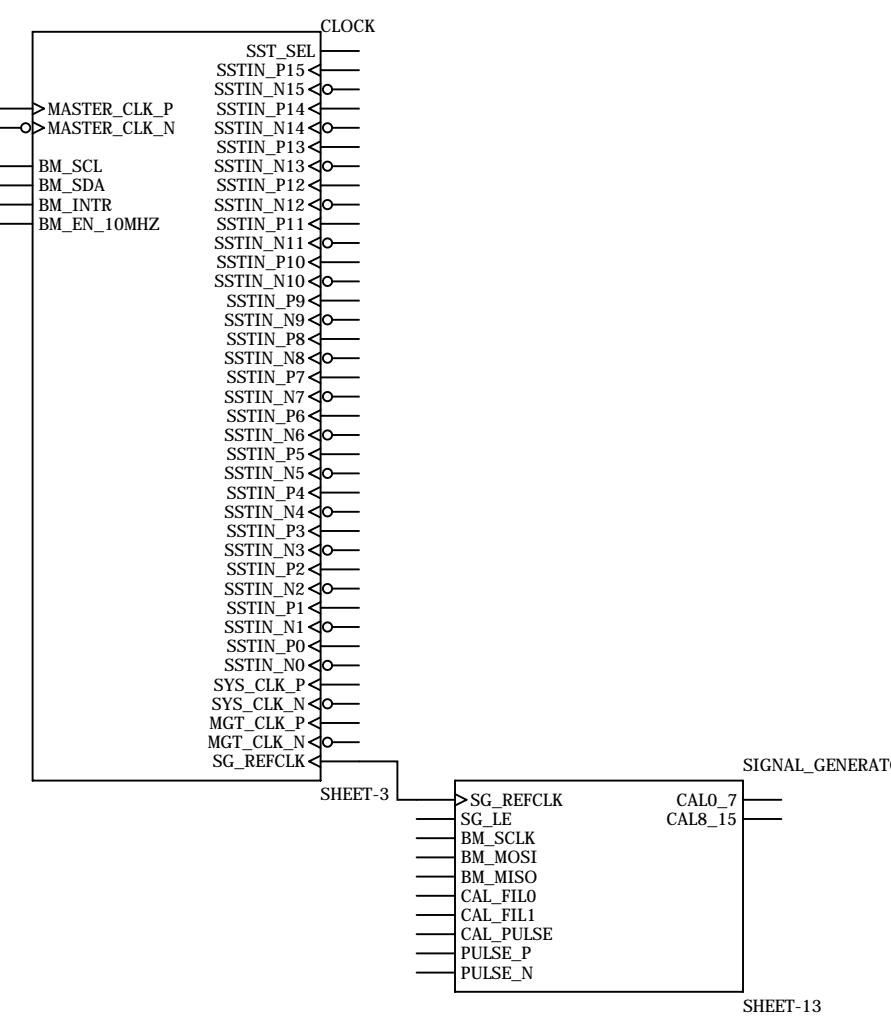
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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protection diodes somewhere??

ECO 6/2: swap A/B on sideband signals



SFF-8087 connector

Cable is designed with 8 differential pairs

TRIGIN+/-

TRIGOUT+/-

CLK+/-

SYNC+/-

MOSI/GND

MISO/GND (these are implemented as differential pairs!)

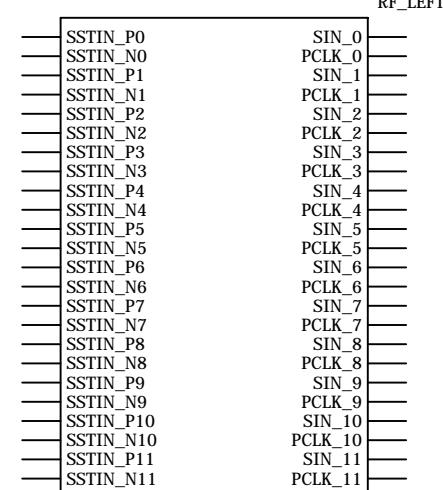
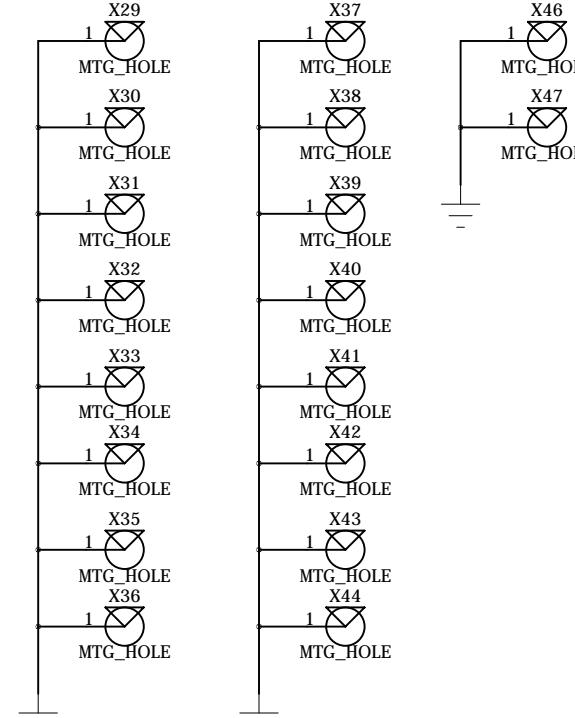
SCLK/GND (allows for a higher-speed FPGA-to-FPGA link)

CS/GND (if used single ended, just drive N side to ground in FPGA)

There are also 8 sideband signals

RX/TX/RST/GND/GPIO[3:0]

At some point I'll finish a top block diagram...



COMPANY: Ohio State University		
SHEET: TOP		
DRAWN: PSA	DATED: 2/27/23	
CHECKED: PSA	DATED: 3/3/23	
QUALITY CONTROL: PSA	DATED: 3/15/23	
RELEASED: N/A	DATED: N/A	
DESIGN RADIANT		REV: 3
SCALE: <Scale>		SHEET: 1 of 74

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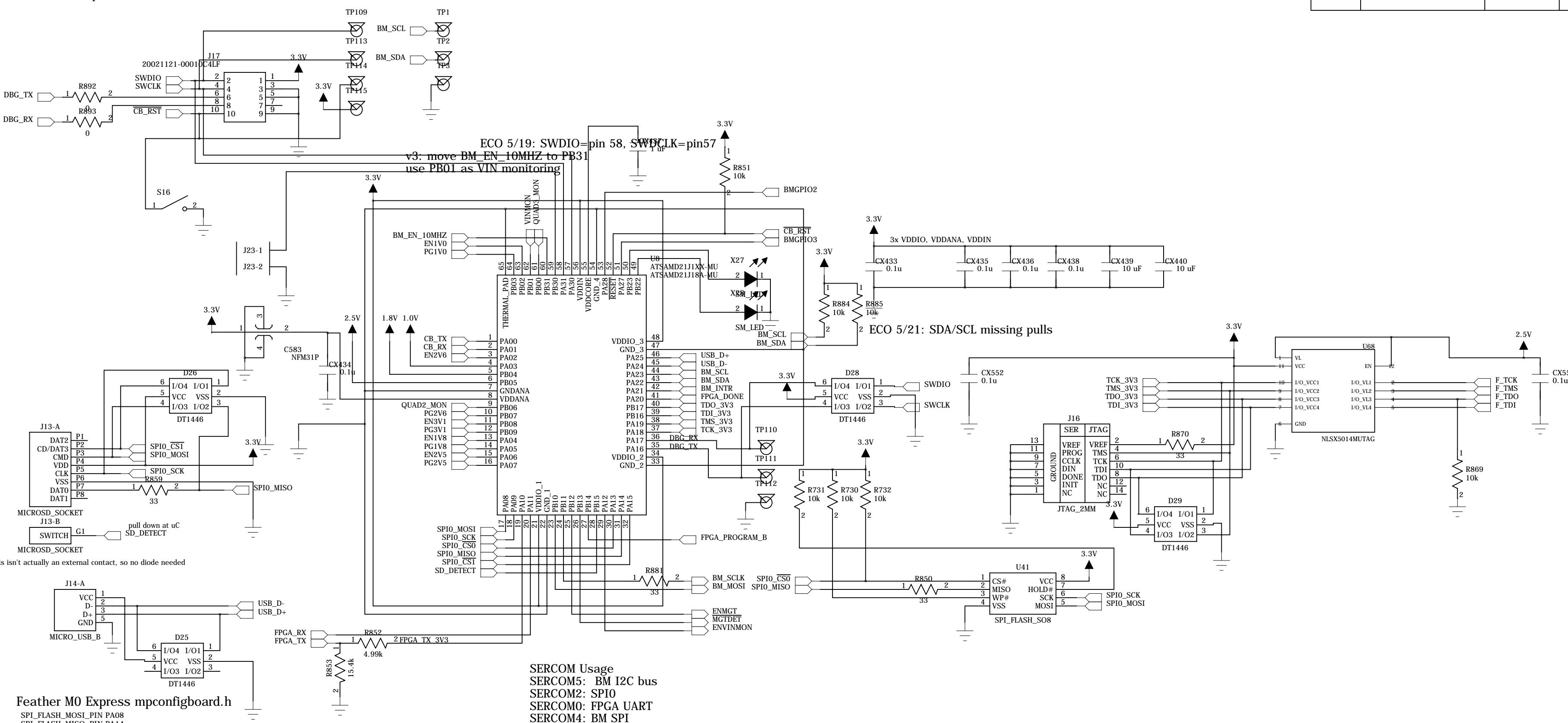
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

v3: Expose DBG_TX/DBG_RX on JTAG header for use as GPIOs if needed


Feather M0 Express mpconfigboard.h

```

SPL_FLASH_MOSI_PIN PA08
SPL_FLASH_MISO_PIN PA14
SPL_FLASH_SCK_PIN PA09
SPL_FLASH_CS_PIN PA13
DEFAULT_I2C_BUS_SCL_PA23
DEFAULT_I2C_BUS_SDA_PA22

DEFAULT_SPI_BUS_SCK_PB11
DEFAULT_SPI_BUS_MOSI_PB10
DEFAULT_SPI_BUS_MISO_PA12

DEFAULT_UART_BUS_RX_PA11
DEFAULT_UART_BUS_TX_PA10

```

Note that the default UART goes to the FPGA

SERCOM Usage
SERCOM5: BM I2C bus
SERCOM2: SPI0
SERCOM0: FPGA UART
SERCOM4: BM SPI
SERCOM3: Debug UART
SERCOM1: CB UART

COMPANY:	Ohio State University		
SHEET:	BOARD_MANAGER		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
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REV:	3	Sheet:	20F 74

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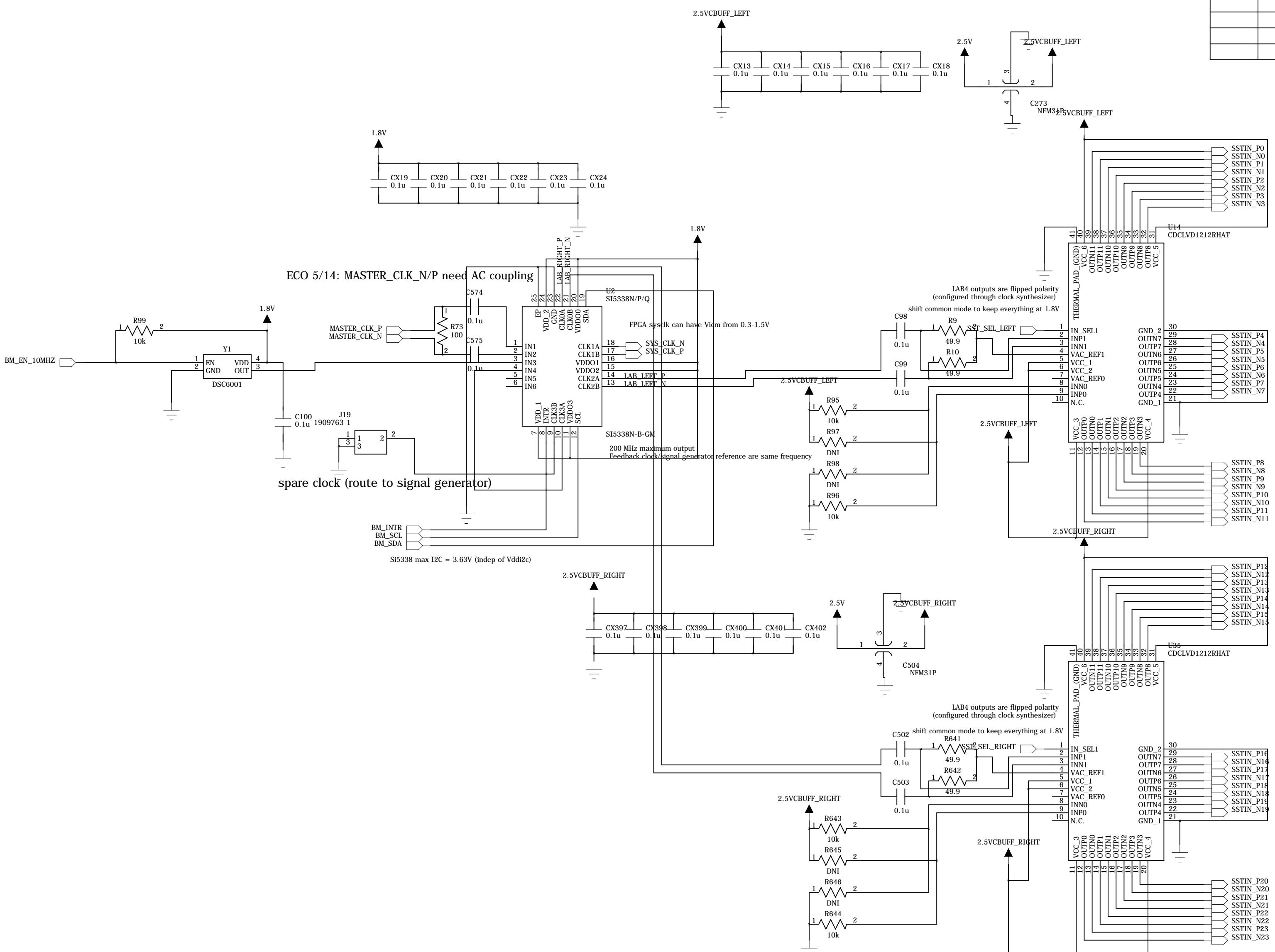
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REVISION RECORD

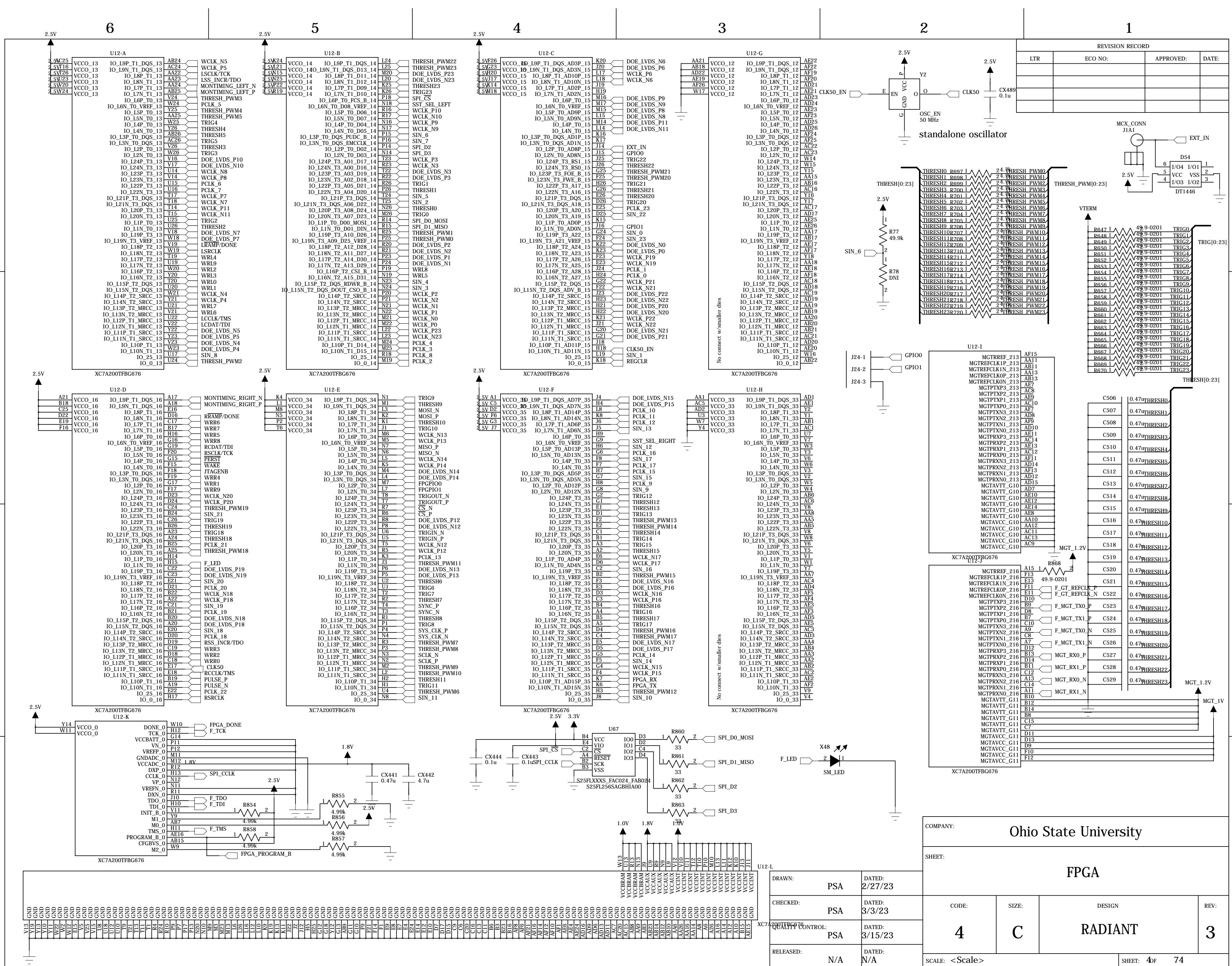
LTR	ECO NO:	APPROVED:	DATE:

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COMPANY:	Ohio State University		
SHEET:	CLOCK		
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CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
CODE:	SIZE:	DESIGN:	REV:
4	C	RADIANT	3
SCALE: <Scale>	SHEET: 30F 74		



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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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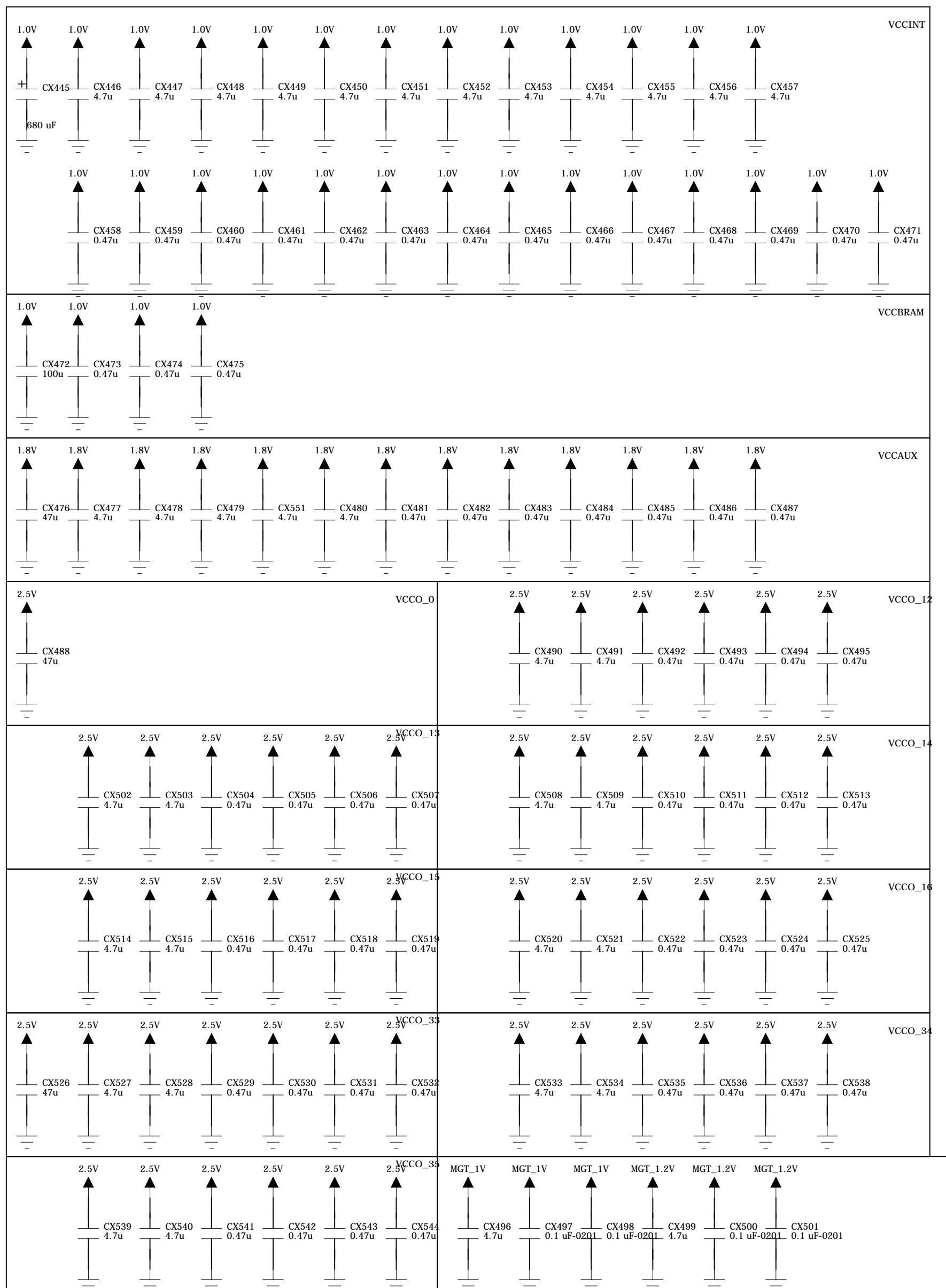
C

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COMPANY:	Ohio State University		
SHEET:	FPGA_DECUPLE		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
SCALE:	<Scale>		
CODE:	C	DESIGN:	RADIANT
SIZE:		REV:	3
Sheet:	5	of	74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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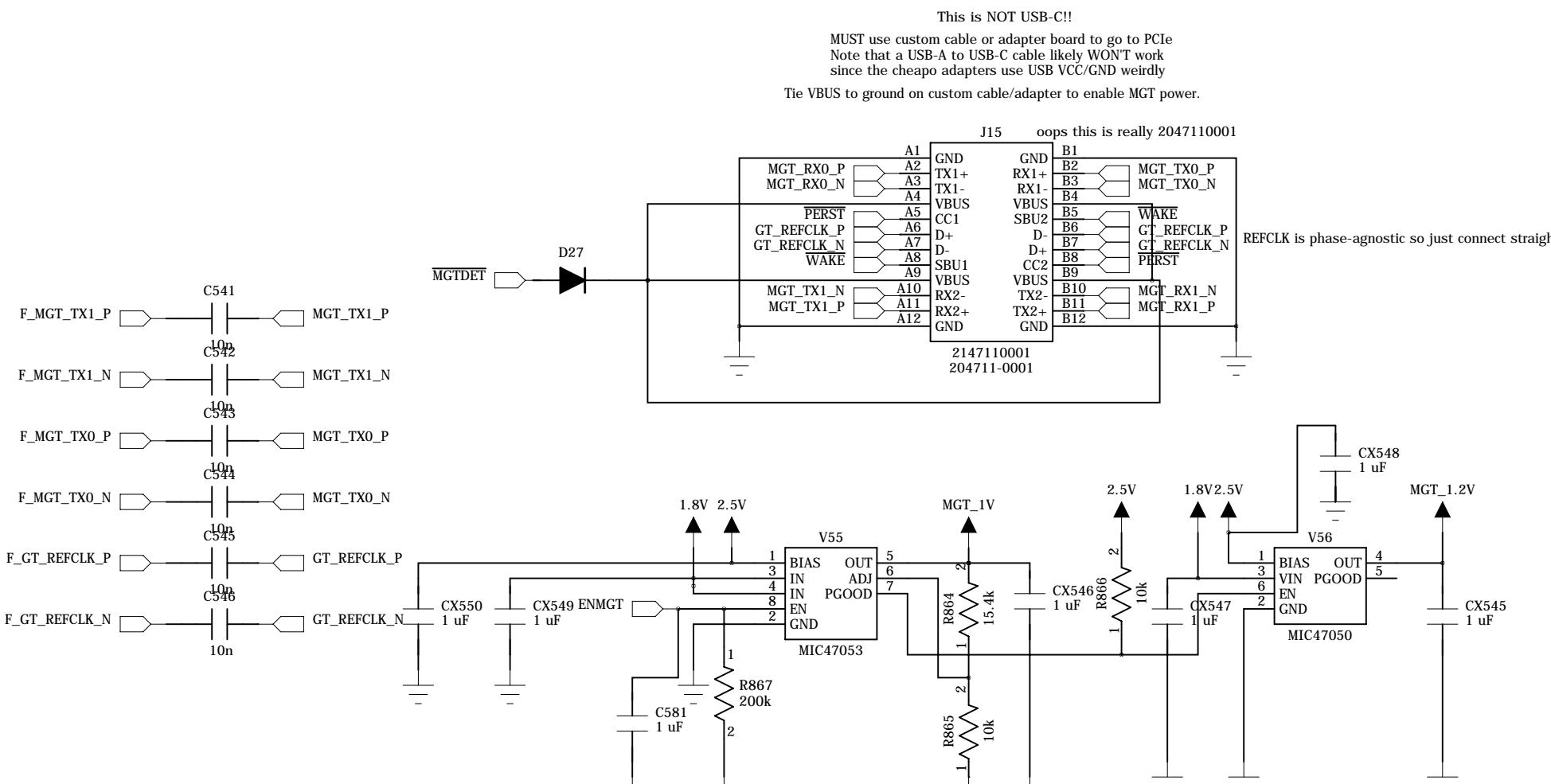
C

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COMPANY:	Ohio State University		
SHEET:	FPGA-PCIE		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	C	DESIGN: RADIANT	REV: 3
SCALE:	<Scale>		SCALE: <Scale>
Sheet:	6	of	74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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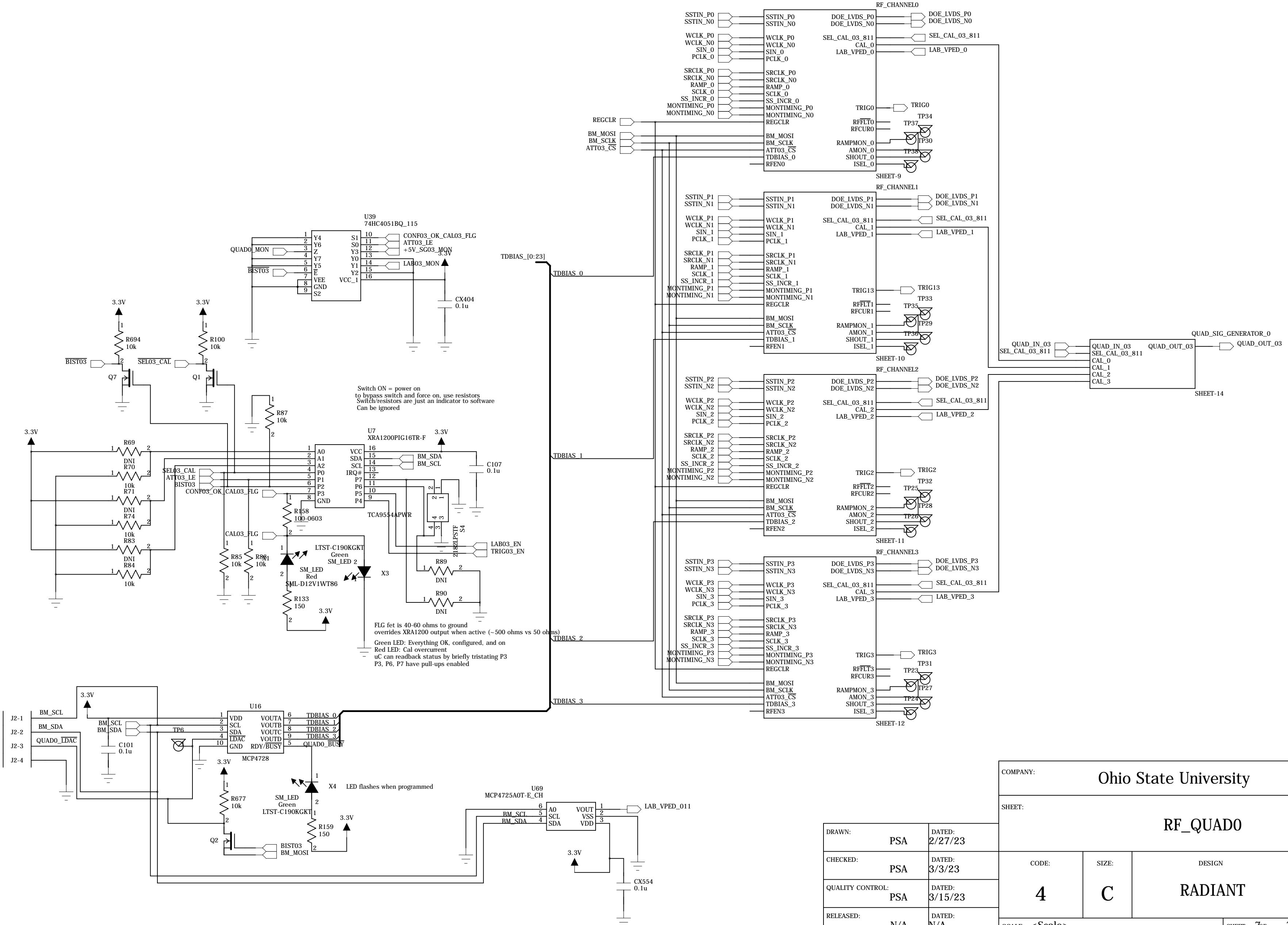
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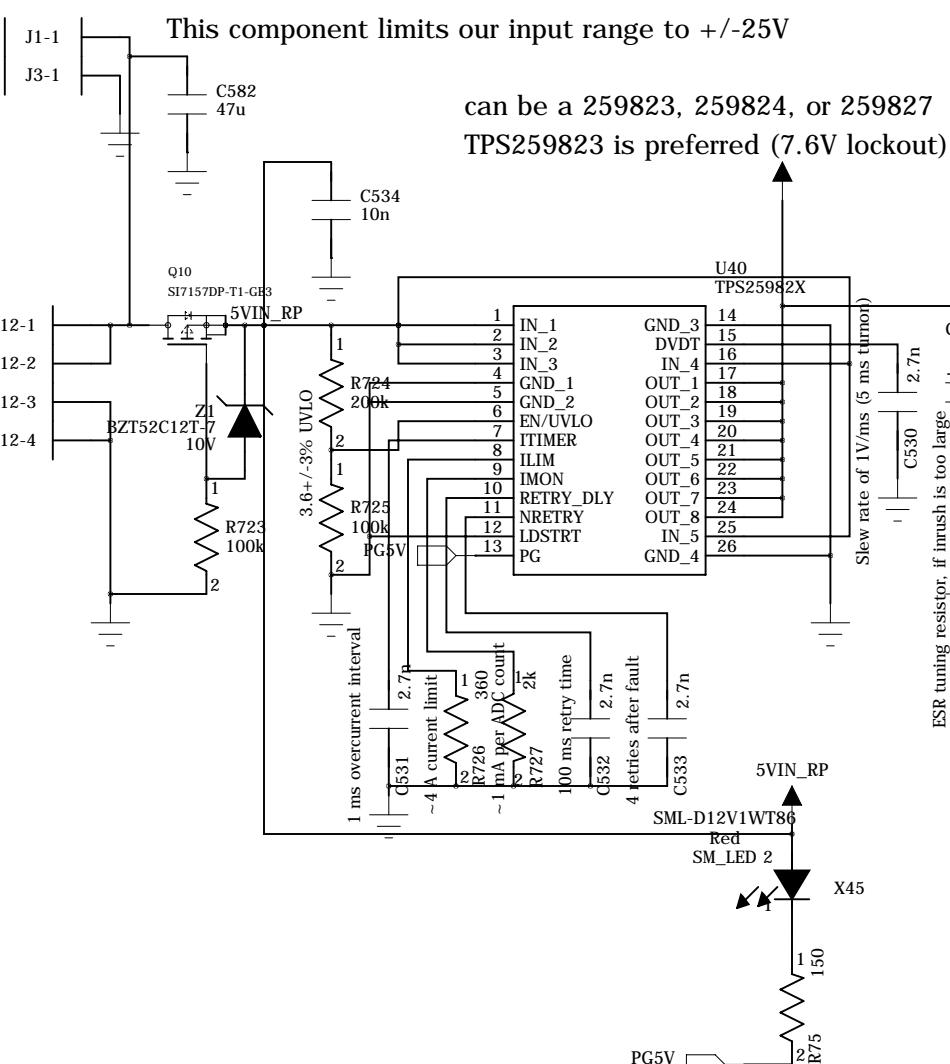
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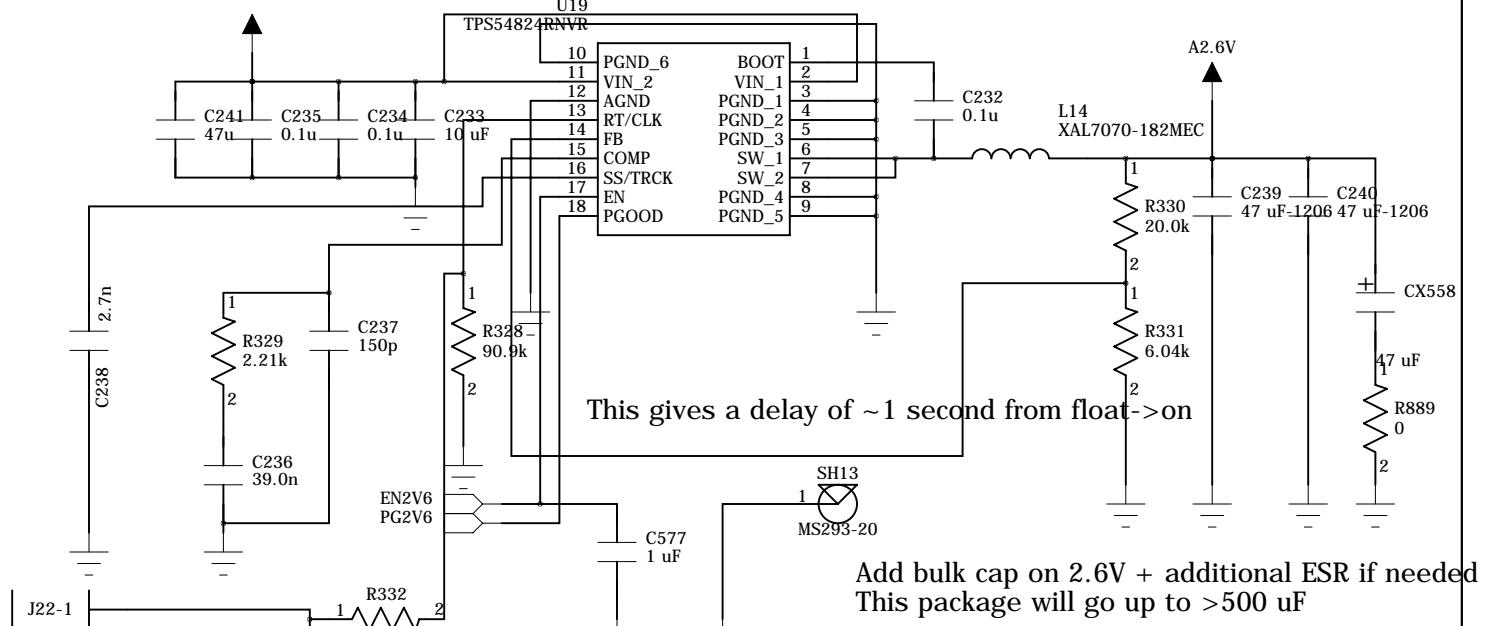


COMPANY:	Ohio State University		
SHEET:	RF_QUADO		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		
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REV:	3	RADIANT	
Sheet:	70F	74	

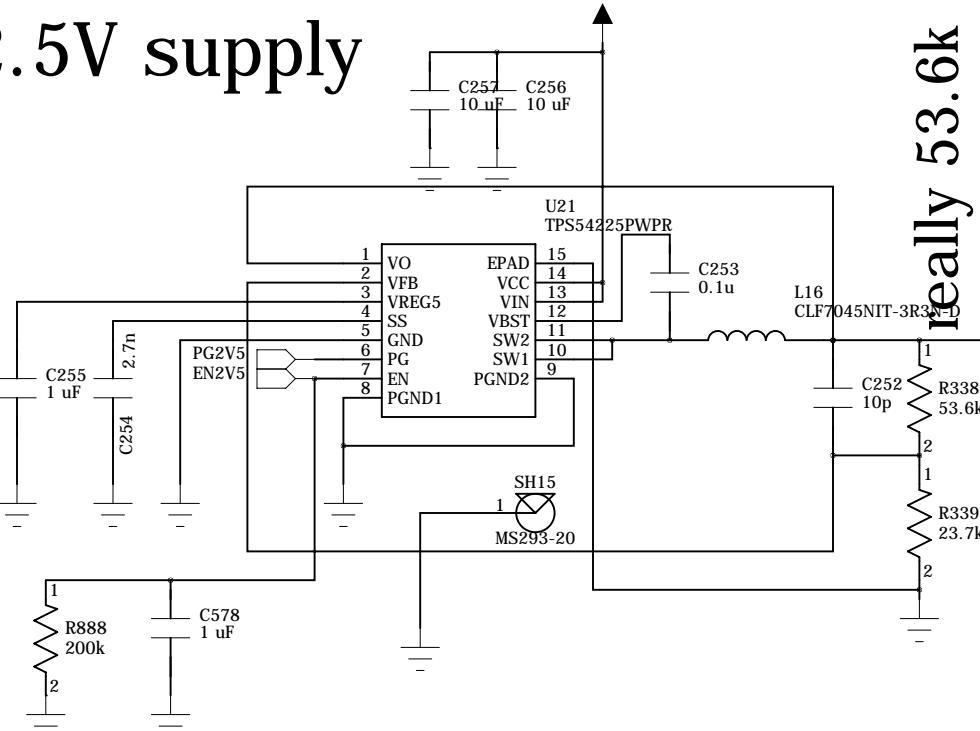
Input power protection



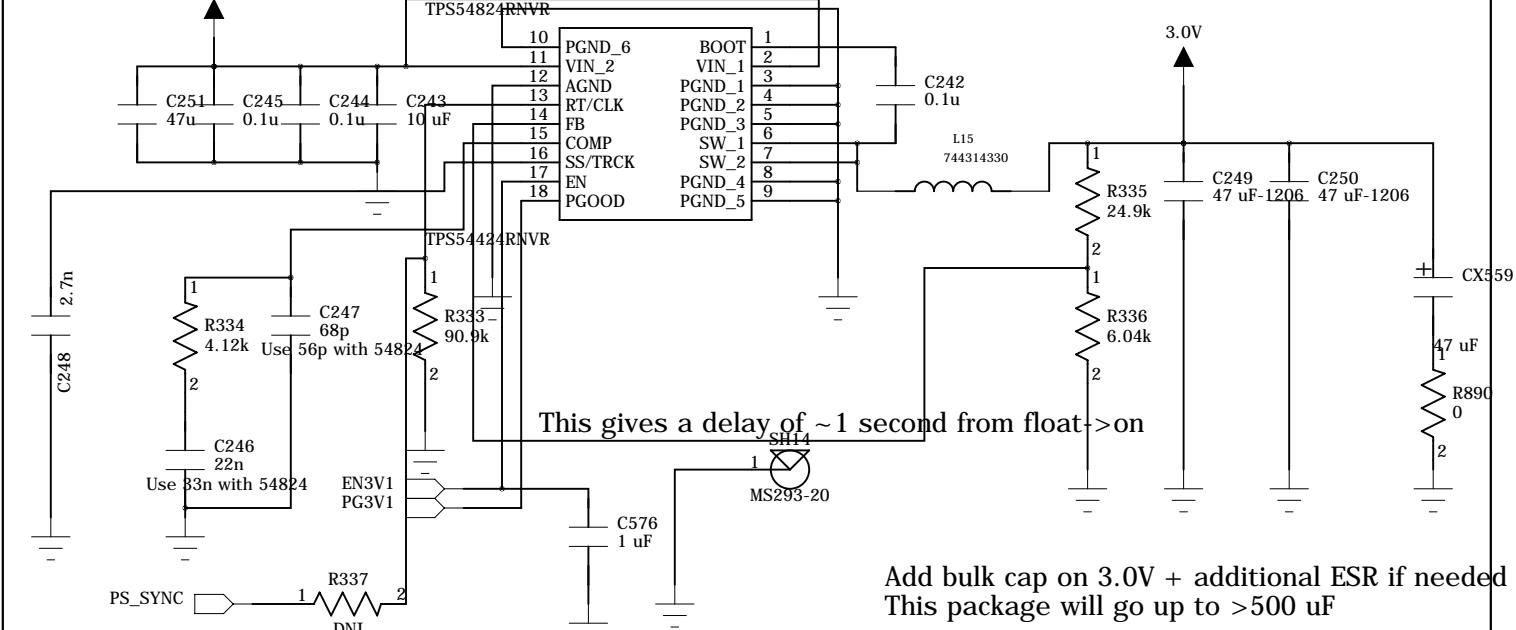
LAB4D supply (2.6V, regulated to 2.5V)



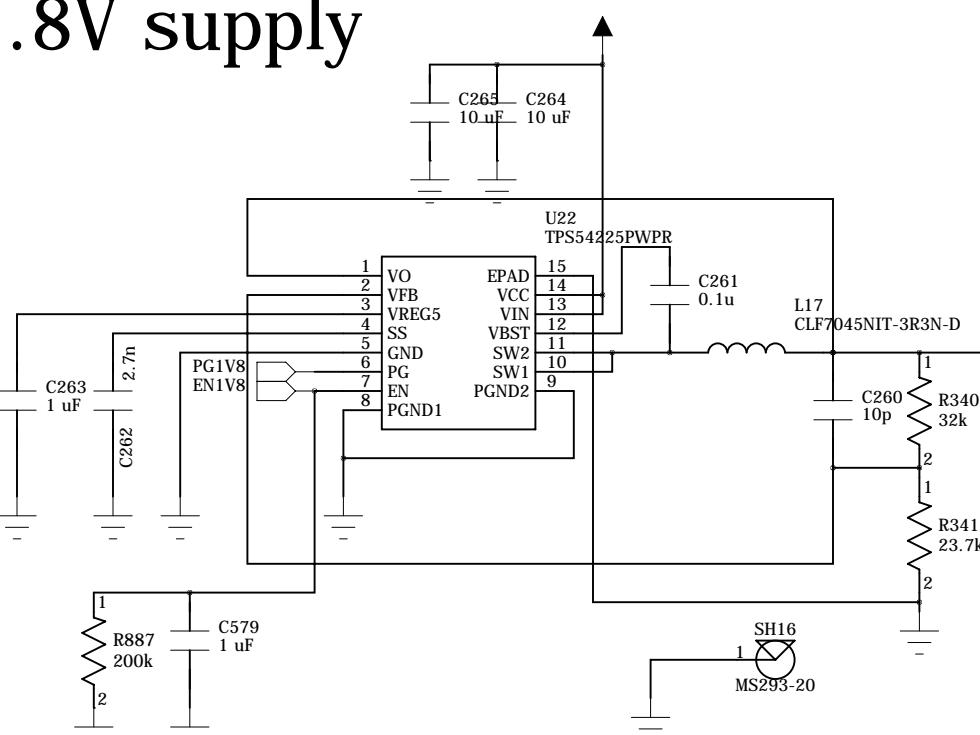
2.5V supply



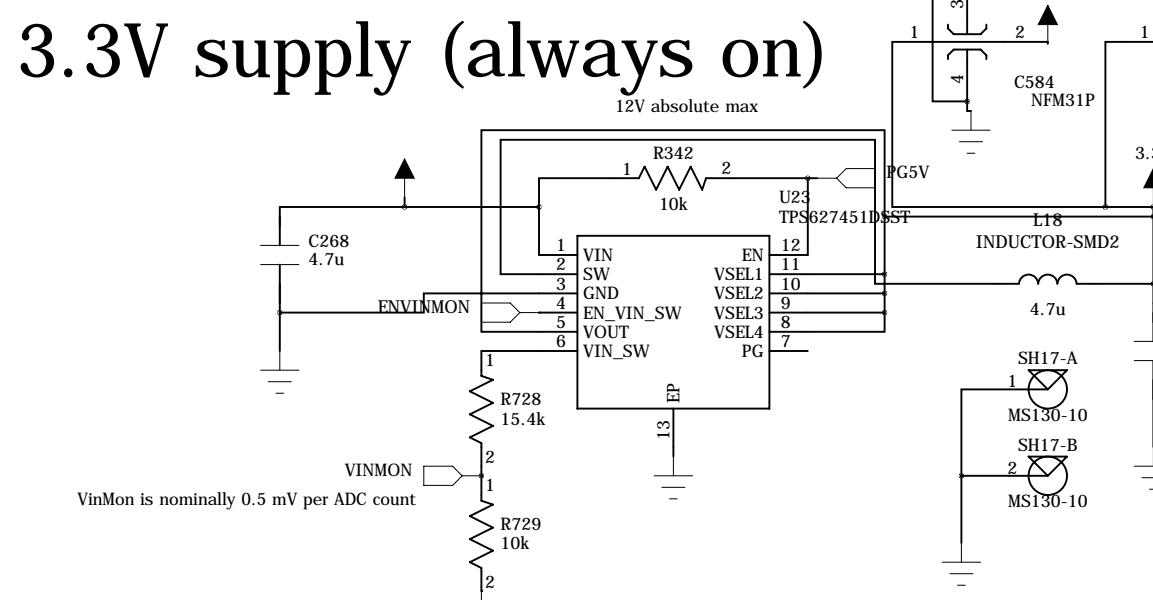
Trigger supply (3.07V, regulated to 3.0V)



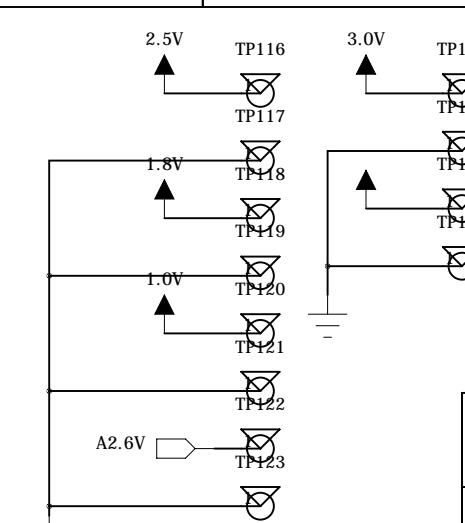
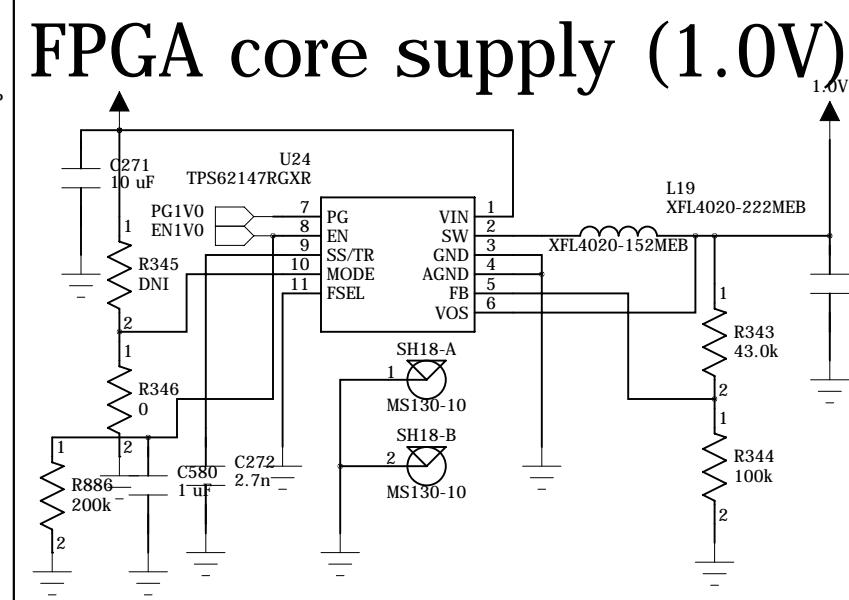
1.8V supply



3.3V supply (always on)



FPGA core supply (1.0V)



Ohio State University

POWER

PSA	2/27/23					
HECKED:	PSA	DATED: 3/3/23	CODE: 4	SIZE: C	DESIGN RADIANT	REV: 3
QUALITY CONTROL:	PSA	DATED: 3/15/23				
RELEASED:	N/A	DATED: N/A	SCALE: <Scale>		SHEET: 8 OF 74	

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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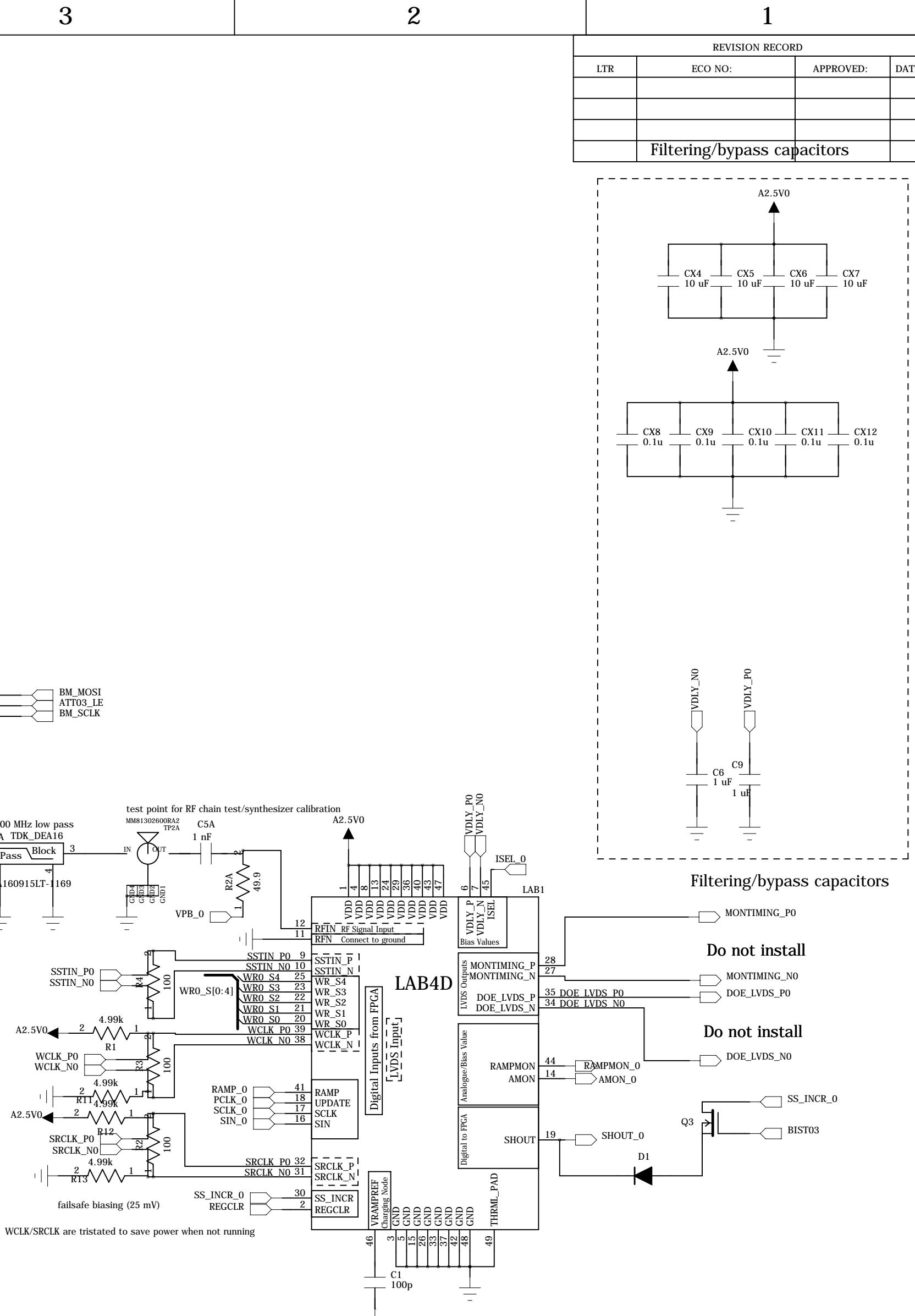
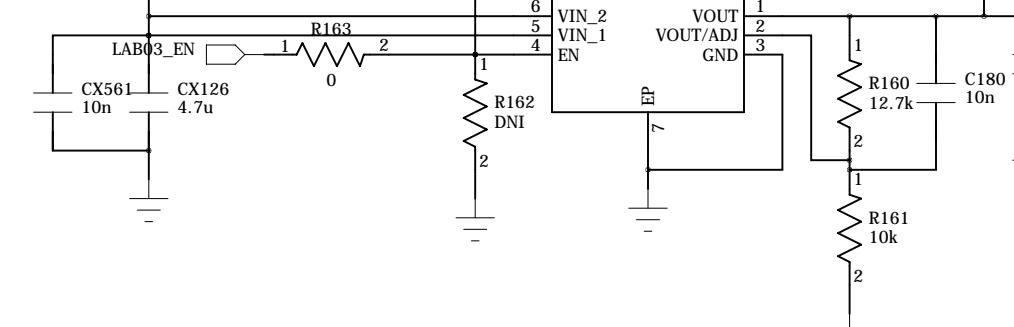
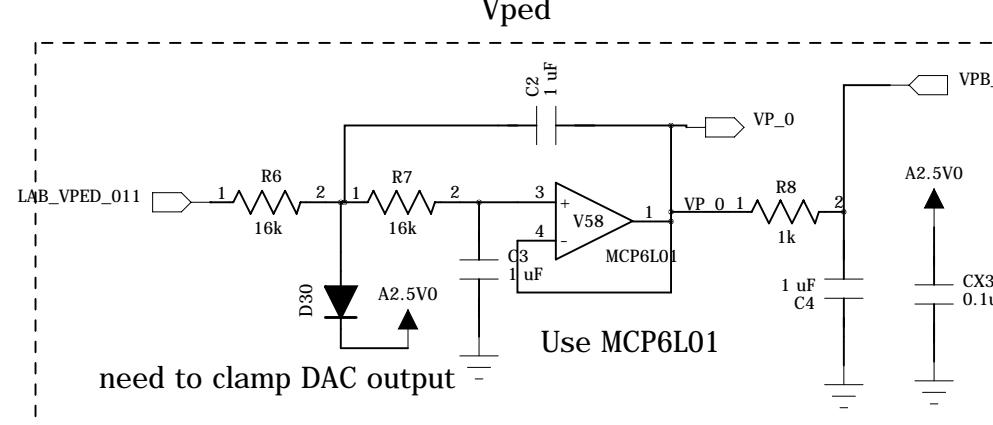
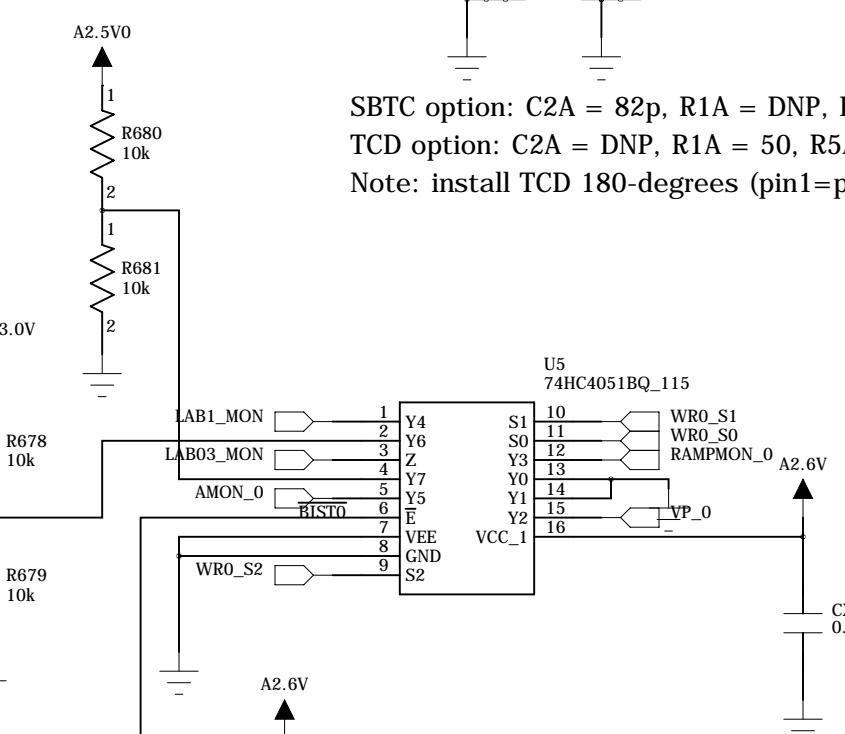
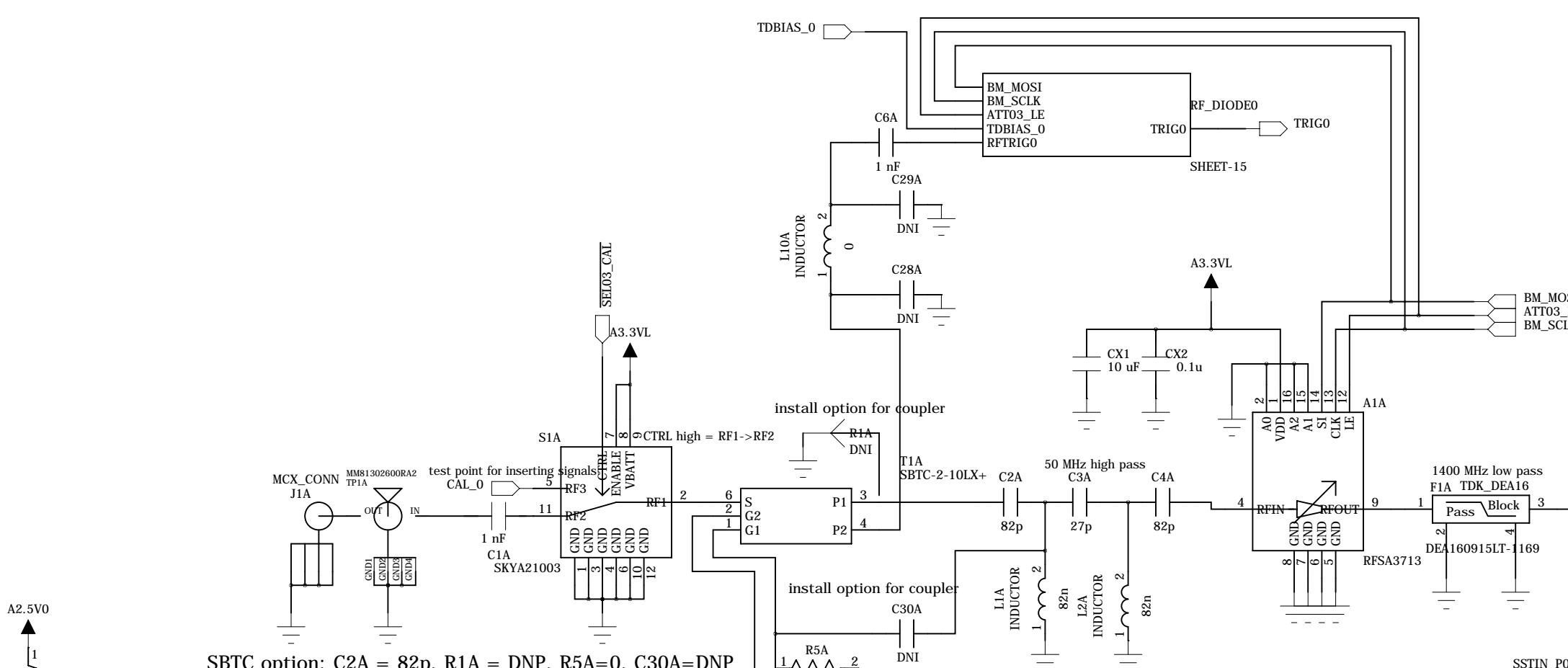
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DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

Ohio State University

RF_CHANNEL0

RADIANT

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SCALE: <Scale> SHEET: 9 of 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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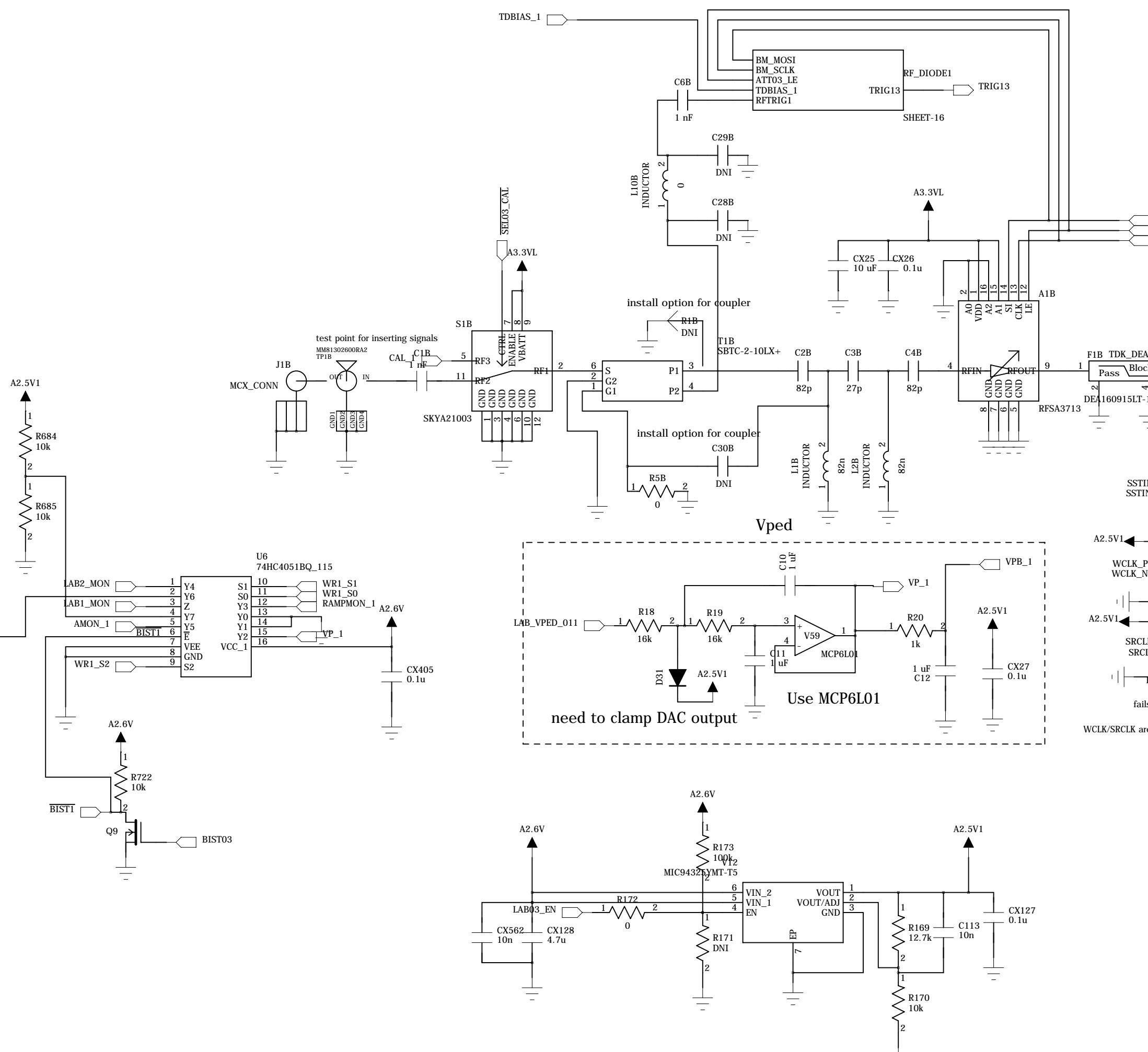
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COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL1		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

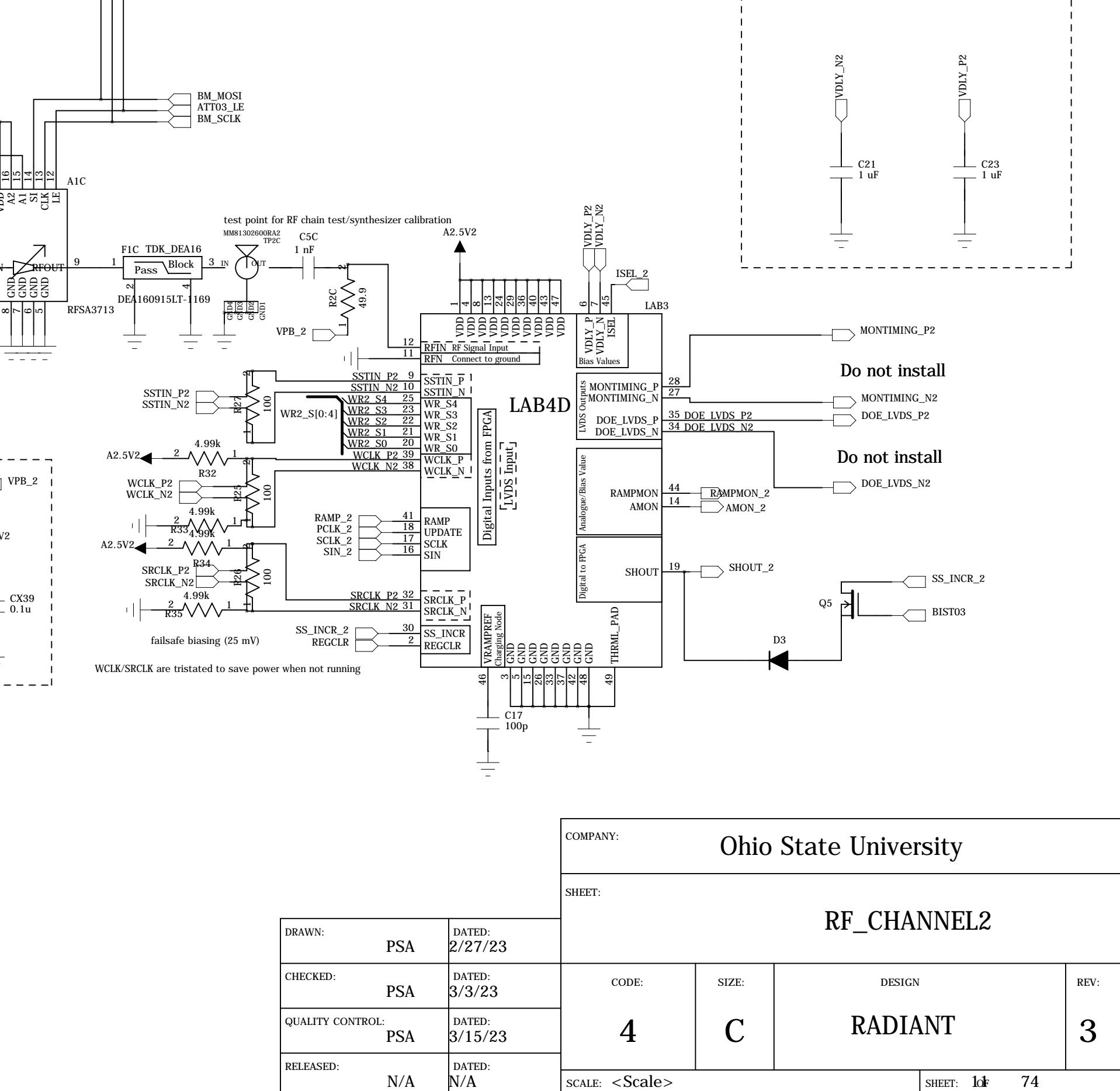
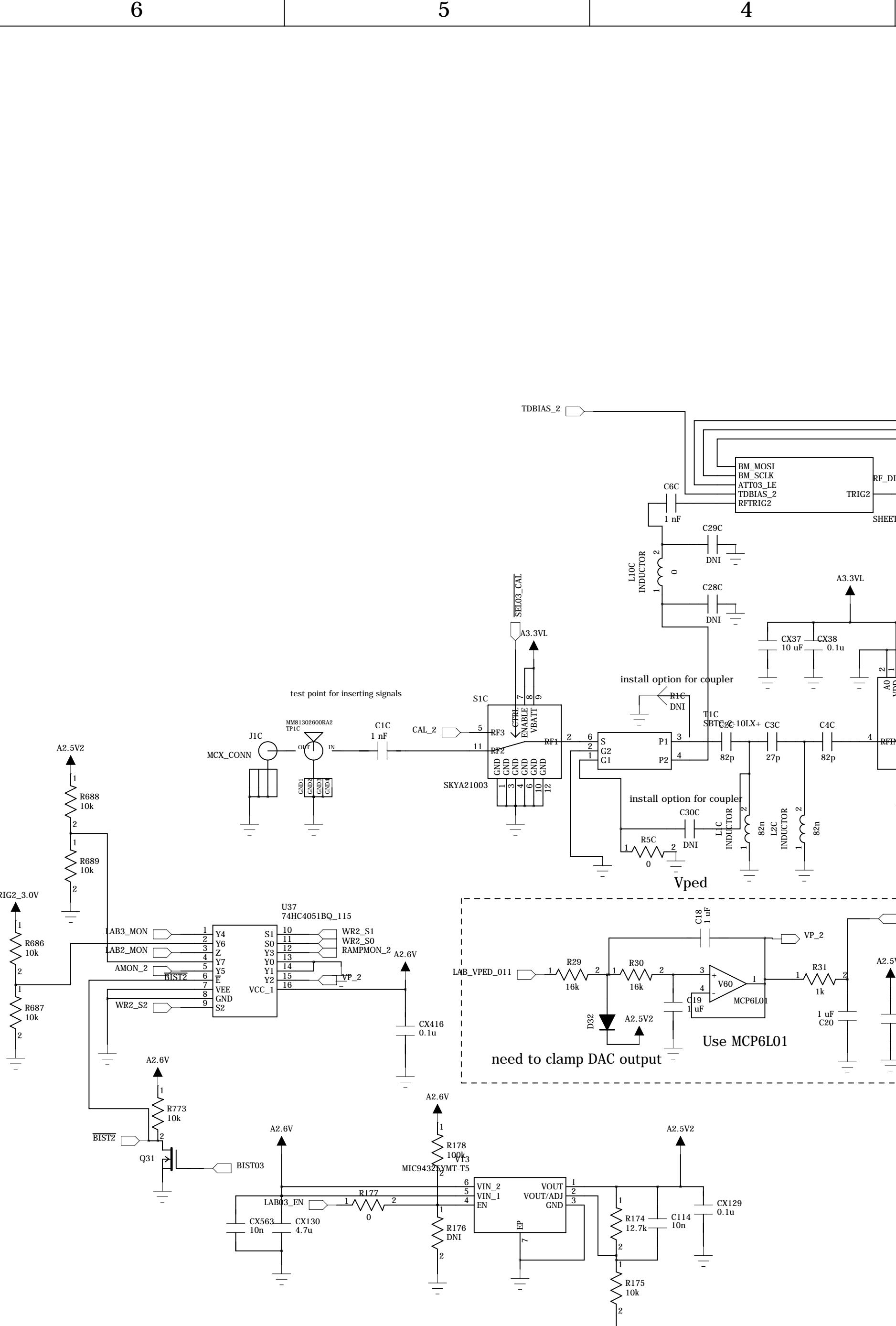
Filtering/bypass capacitors

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Ohio State University

RF_CHANNEL2

COMPANY:

SHEET:

DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

RADIANT

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SCALE: <Scale> SHEET: 1d 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:
	Filtering/bypass capacitors		

Filtering/bypass capacitors

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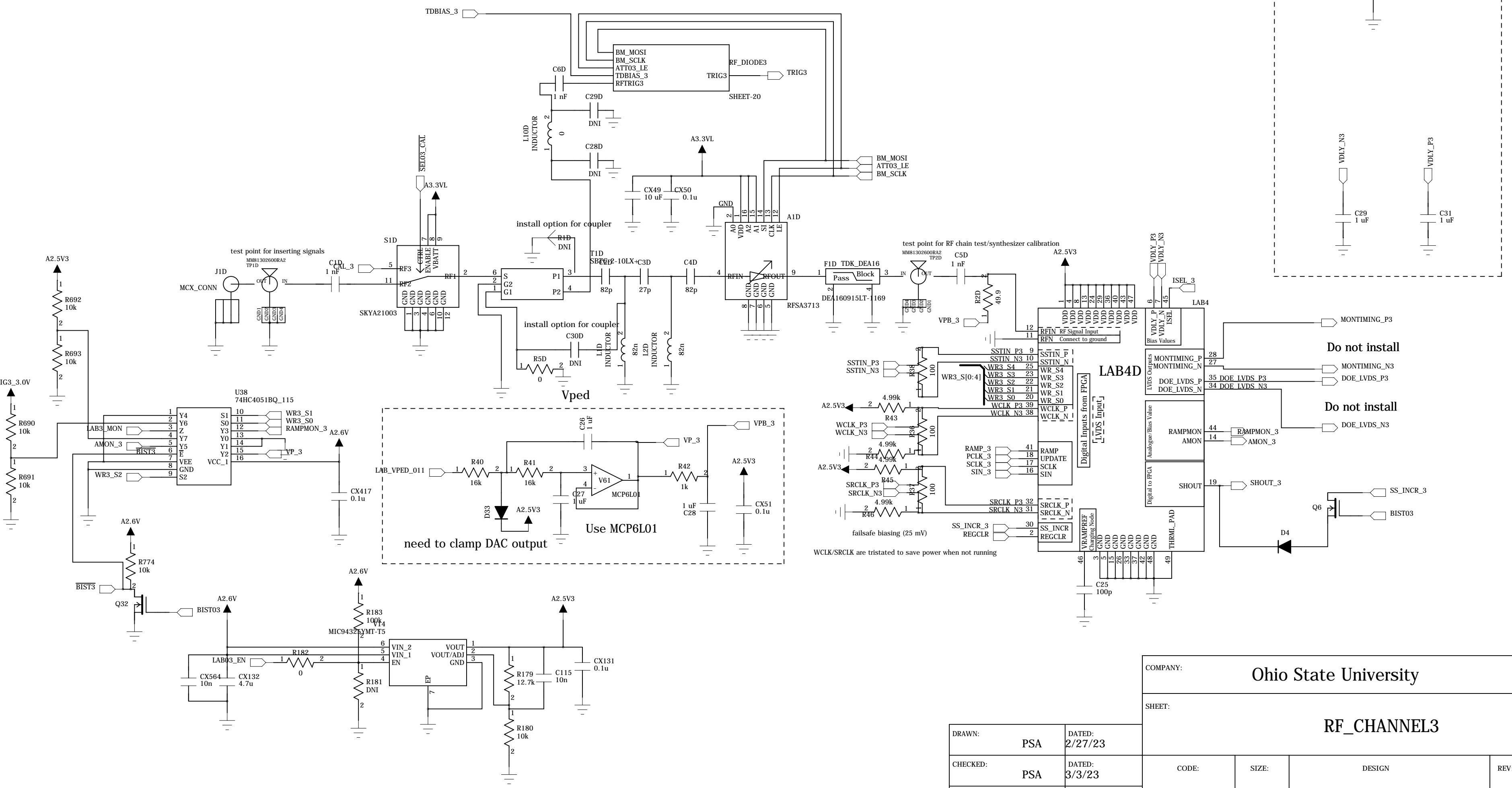
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Ohio State University

RF_CHANNEL3

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QUALITY CONTROL: PSA	DATED: 3/15/23				
RELEASED: N/A	DATED: N/A	SCALE: <Scale>			SHEET: 18 74

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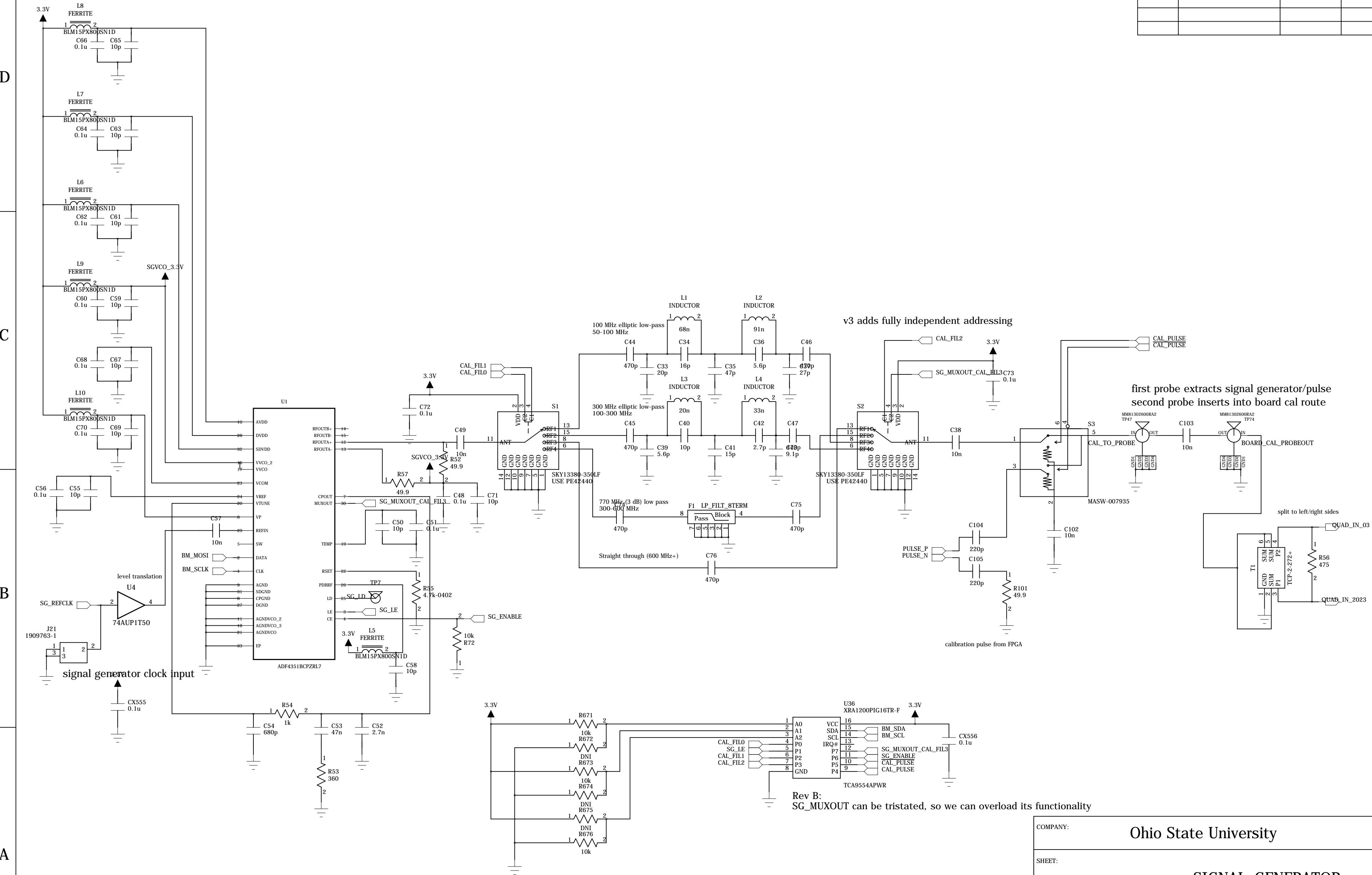
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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



Rev B:
SG_MUXOUT can be tristated, so we can overload its functionality

COMPANY:	Ohio State University		
SHEET:	SIGNAL_GENERATOR		
CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3
SCALE: <Scale>	SHEET: 13	74	

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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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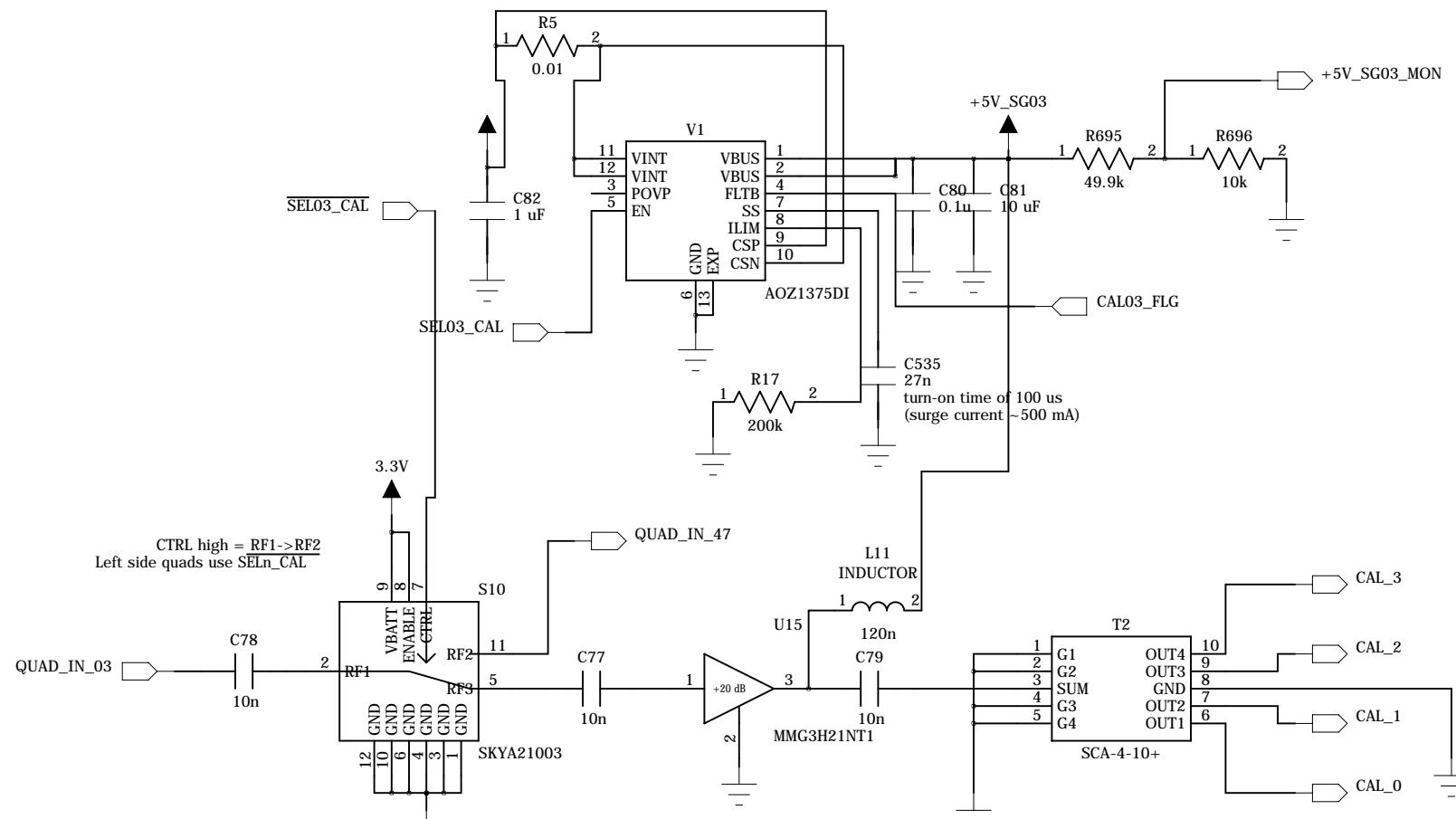
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COMPANY:	Ohio State University		
SHEET:	QUAD_SIG_GENERATOR_0		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3
SCALE: <Scale>		SCALE: 1:4	74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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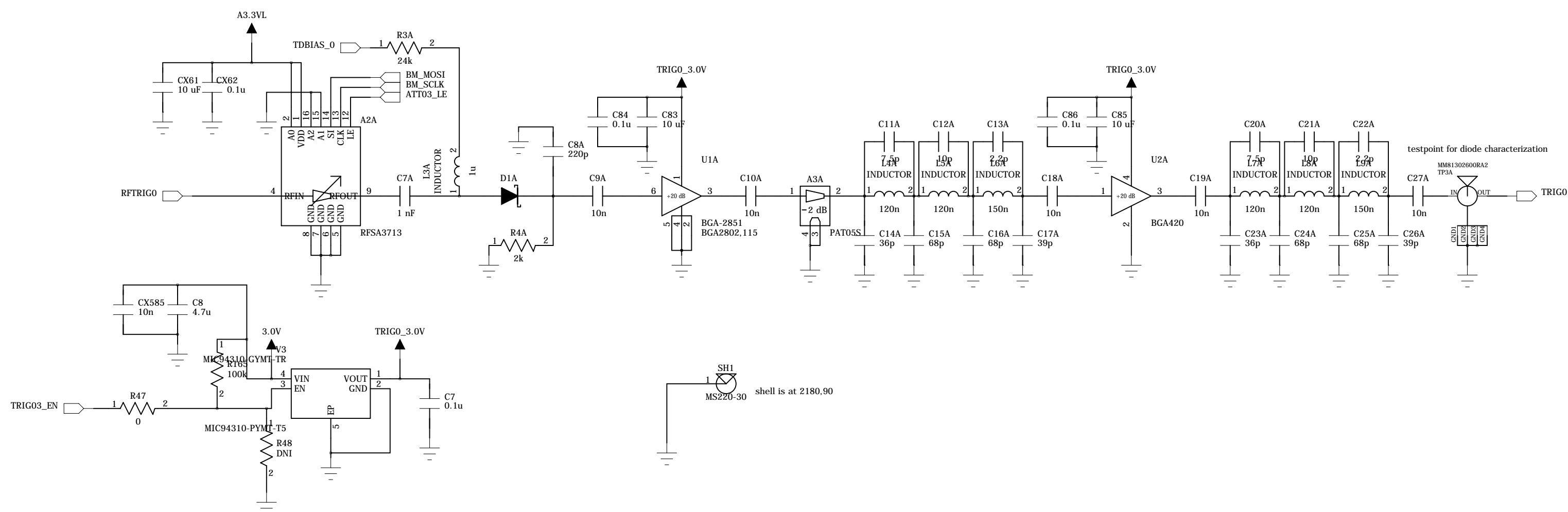
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COMPANY:	Ohio State University		
SHEET:	RF_DIODE0		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3
SCALE: <Scale>		SHEET: 15 74	

SH1
MS220-30 shell is at 2180.90

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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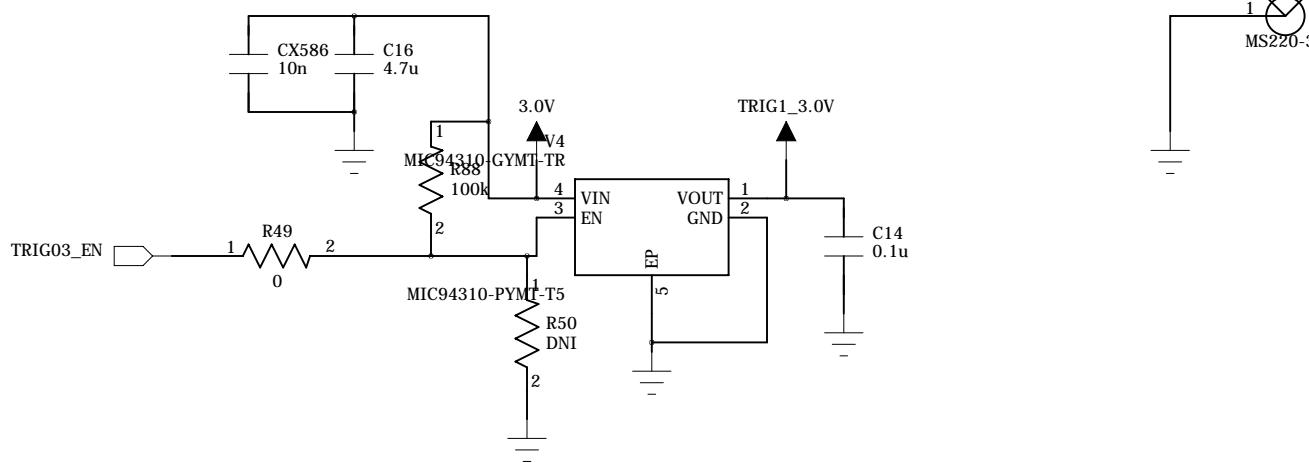
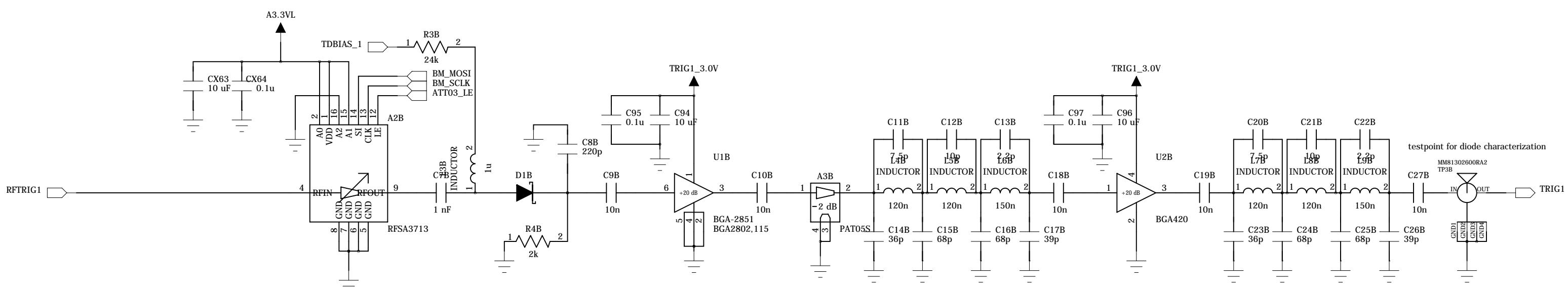
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COMPANY:	Ohio State University		
SHEET:	RF_DIODE1		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
CODE:	SIZE:	DESIGN	REV:
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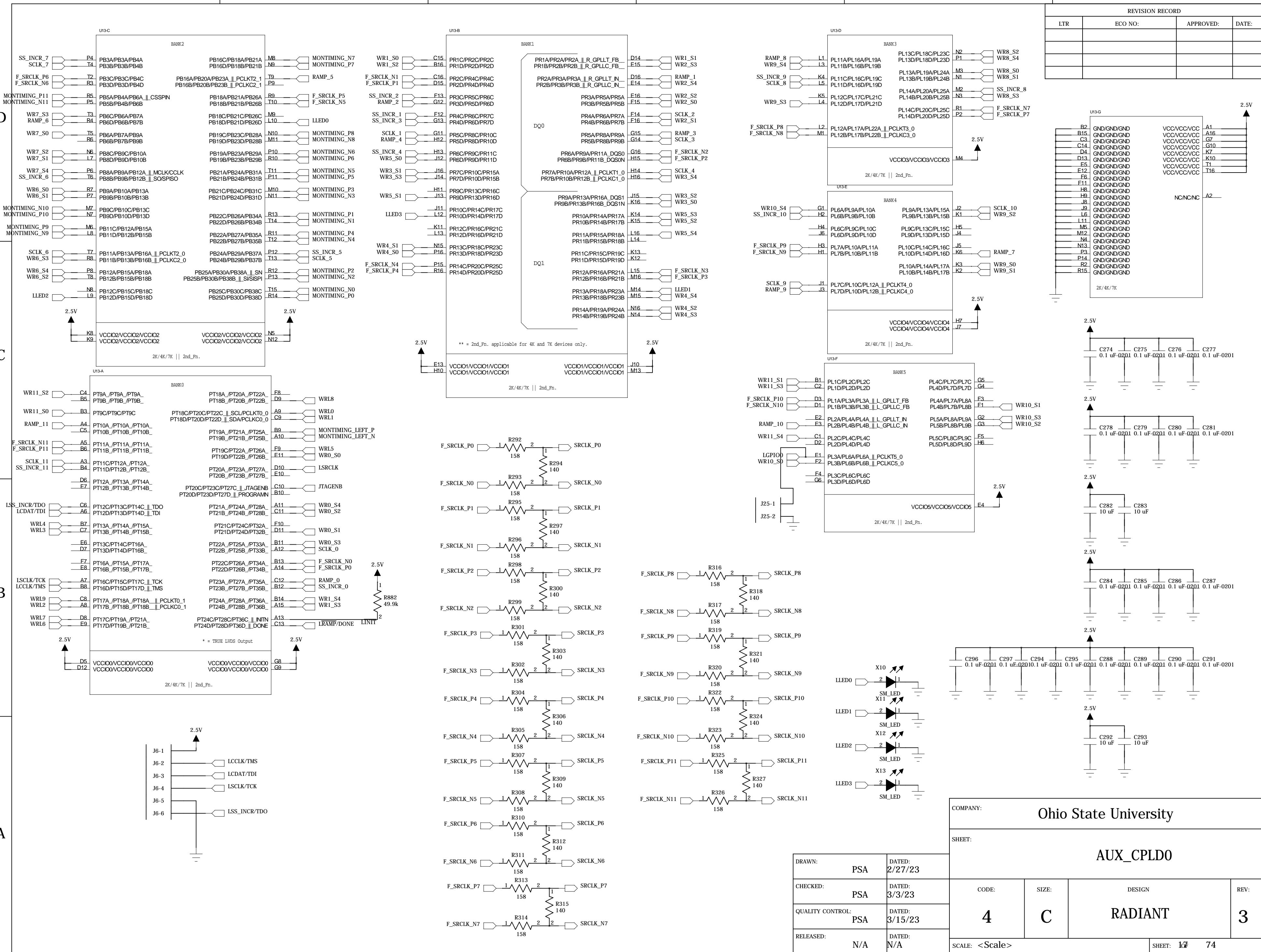
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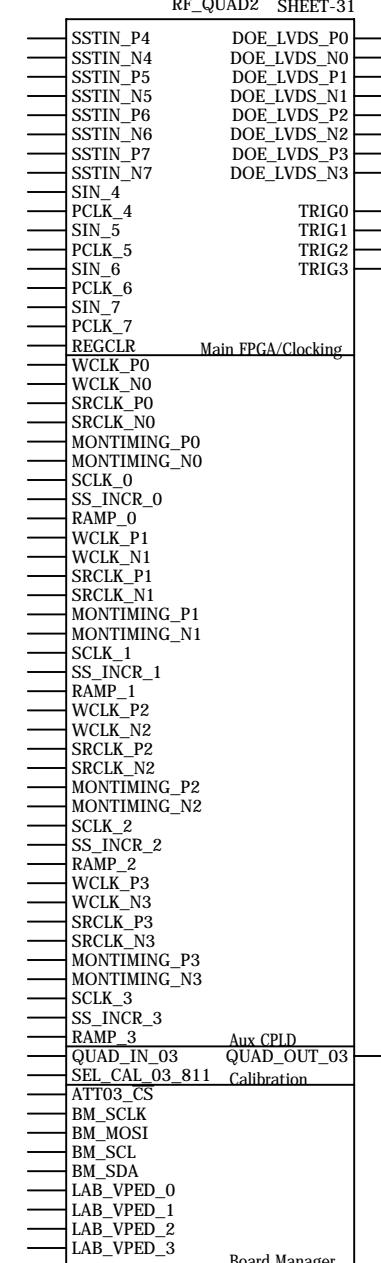
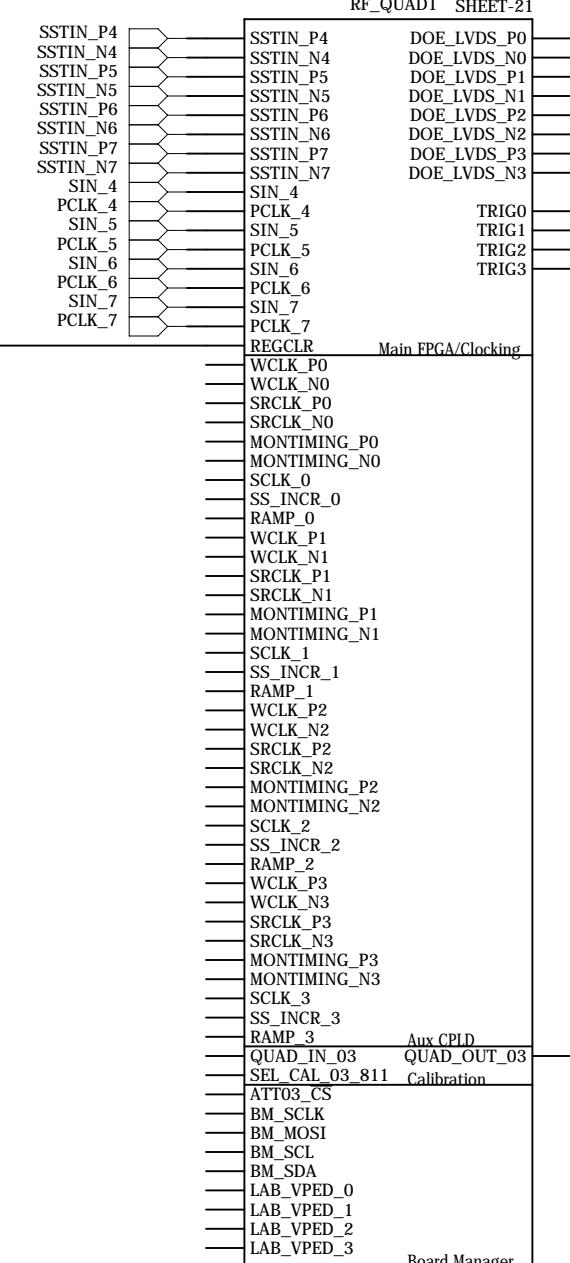
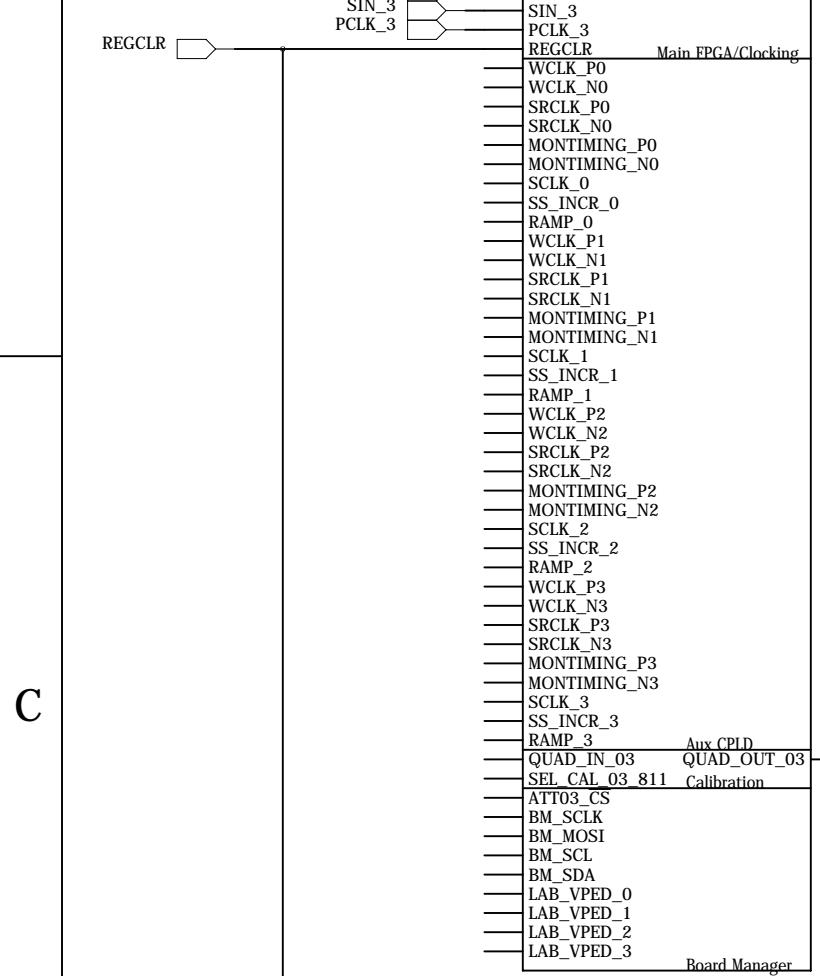
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REVISION RECORD			
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COMPANY:	Ohio State University		
SHEET:	RF_LEFT		
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CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
CODE:	SIZE:	DESIGN:	REV:
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SCALE: <Scale>		SHEET: 18 74	

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REVISION RECORD

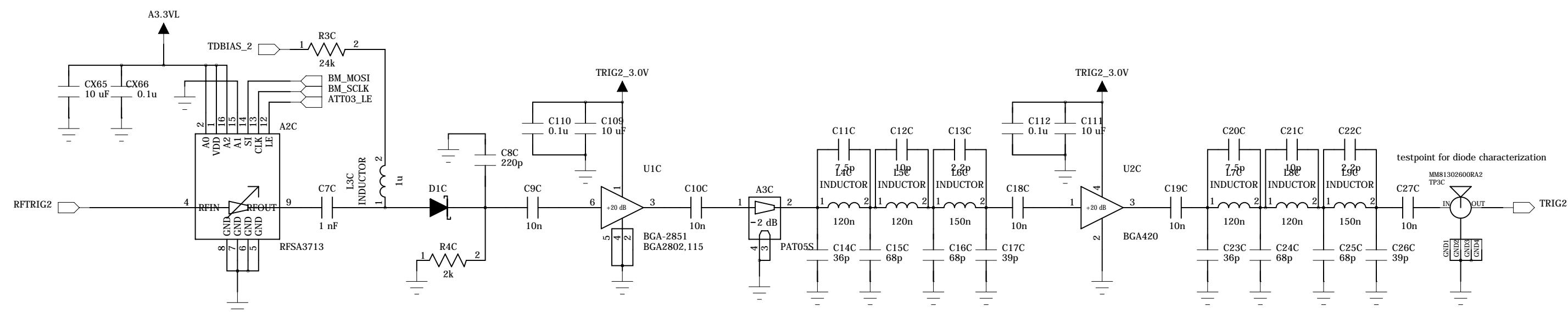
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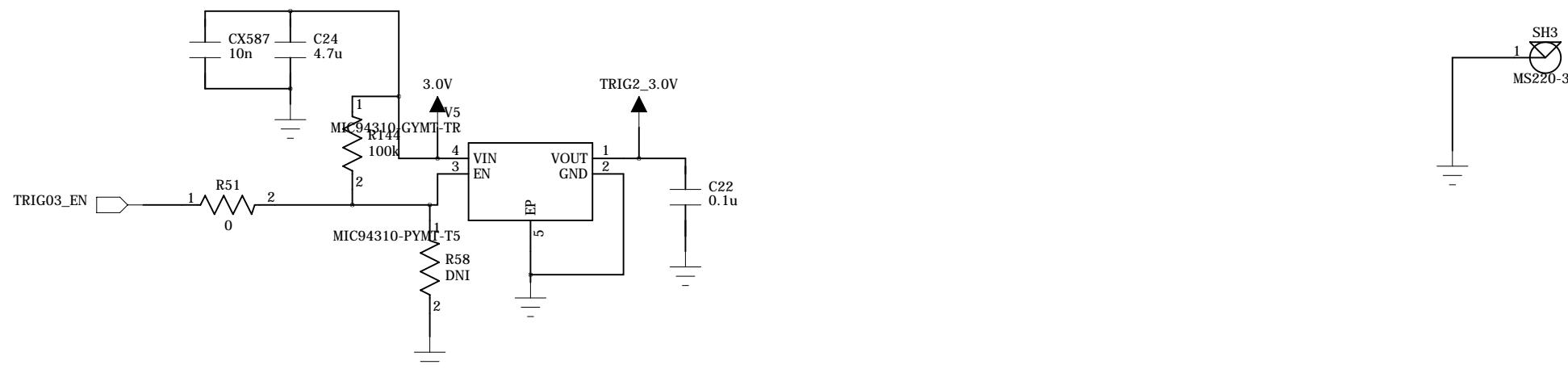
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COMPANY:	Ohio State University		
SHEET:	RF_DIODE2		
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QUALITY CONTROL:	PSA	DATED:	3/15/23
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REV:	4	3	
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REVISION RECORD

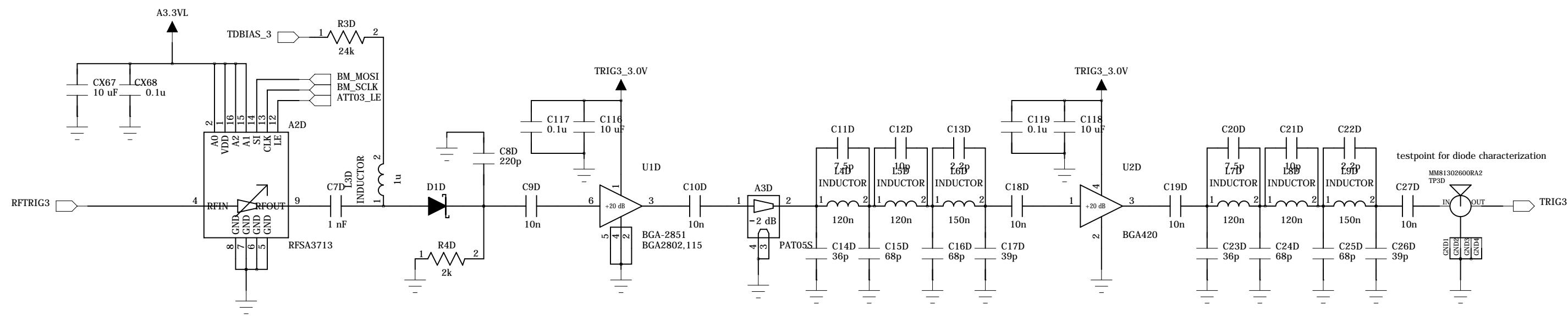
LTR	ECO NO:	APPROVED:	DATE:

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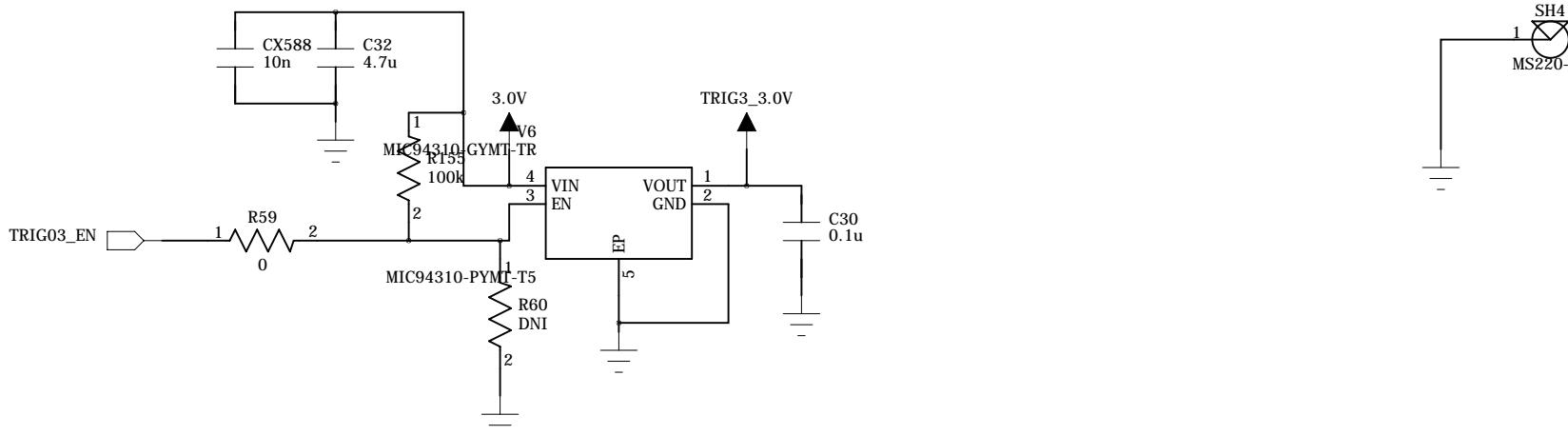
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COMPANY:	Ohio State University		
SHEET:	RF_DIODE3		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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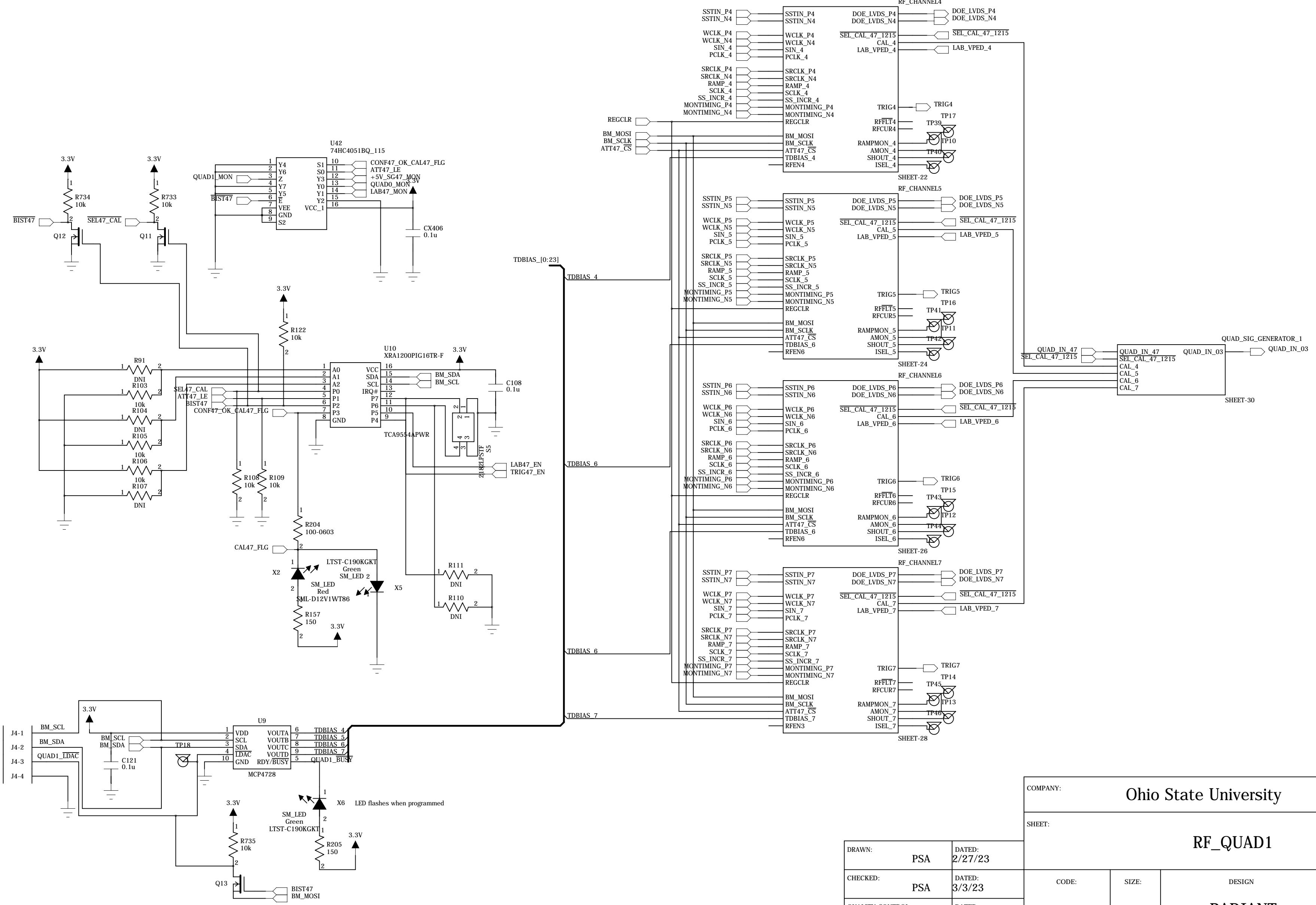
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COMPANY:	Ohio State University		
SHEET:	RF_QUAD1		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		
CODE:	C	SIZE:	DESIGN
4	C	RADIANT	3
REV:			
Sheet:	21	74	

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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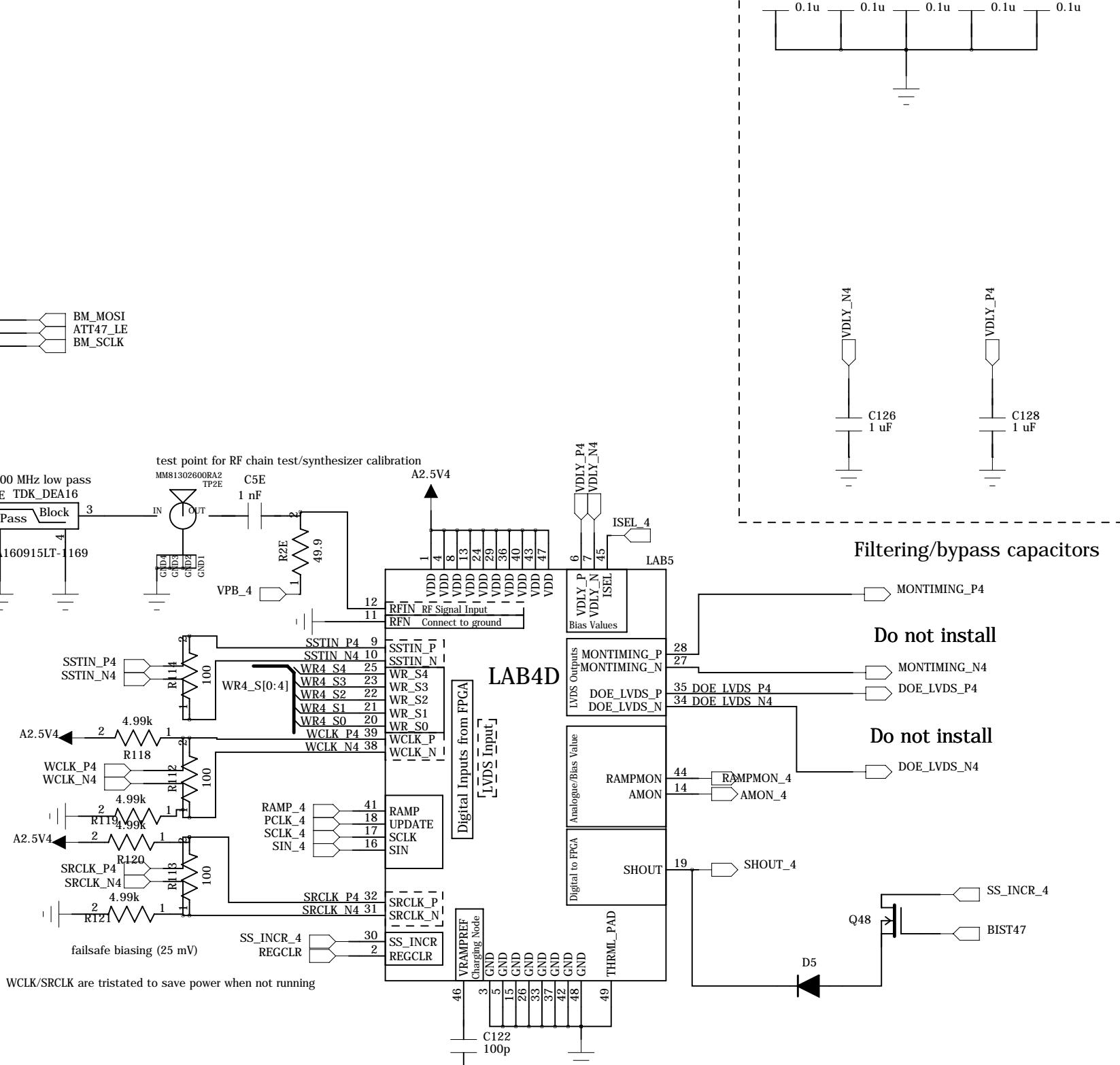
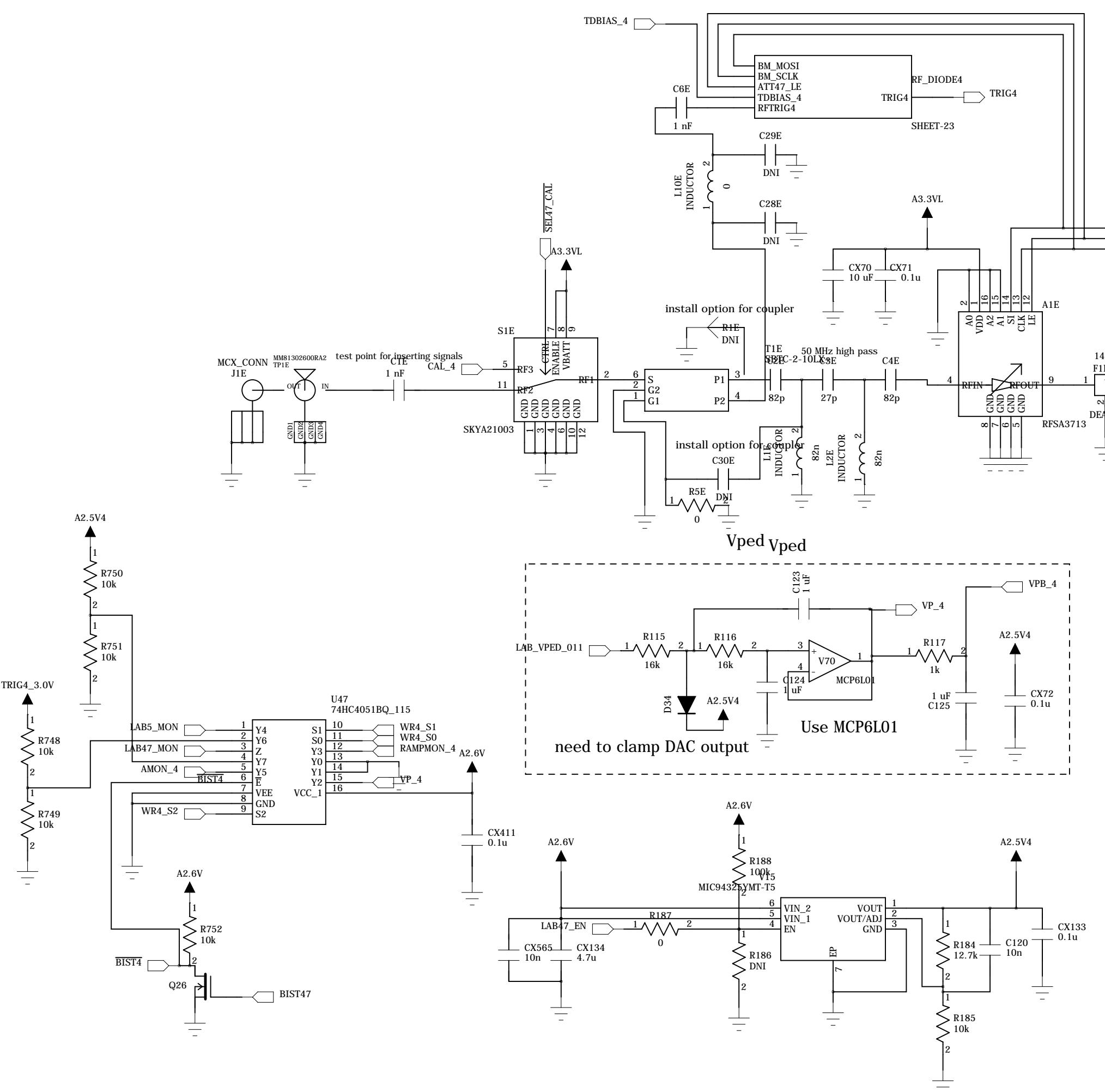
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COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL4		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>	SHEET:	28 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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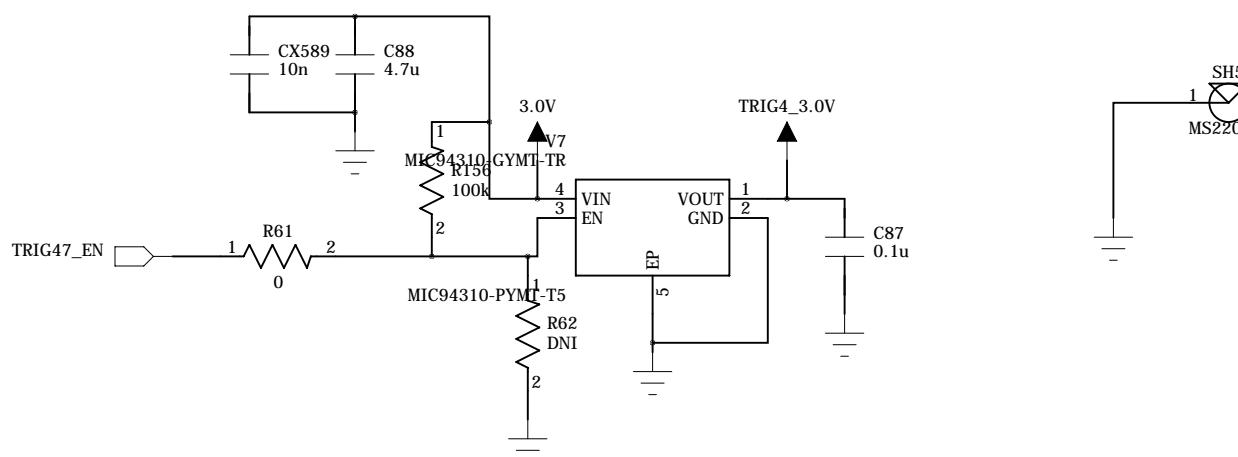
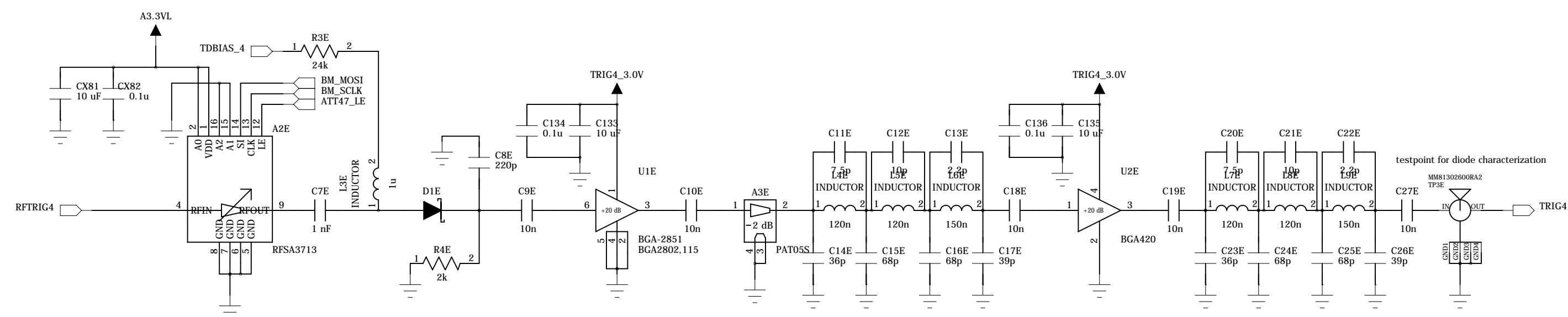
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DRAWN:	PSA	DATED: 2/27/23	CODE: 4	SIZE: C	DESIGN: RADIANT	REV: 3
CHECKED:	PSA	DATED: 3/3/23				
QUALITY CONTROL:	PSA	DATED: 3/15/23				
RELEASED:	N/A	DATED: N/A				
SCALE: <Scale>					SHEET: 23	74

Ohio State University

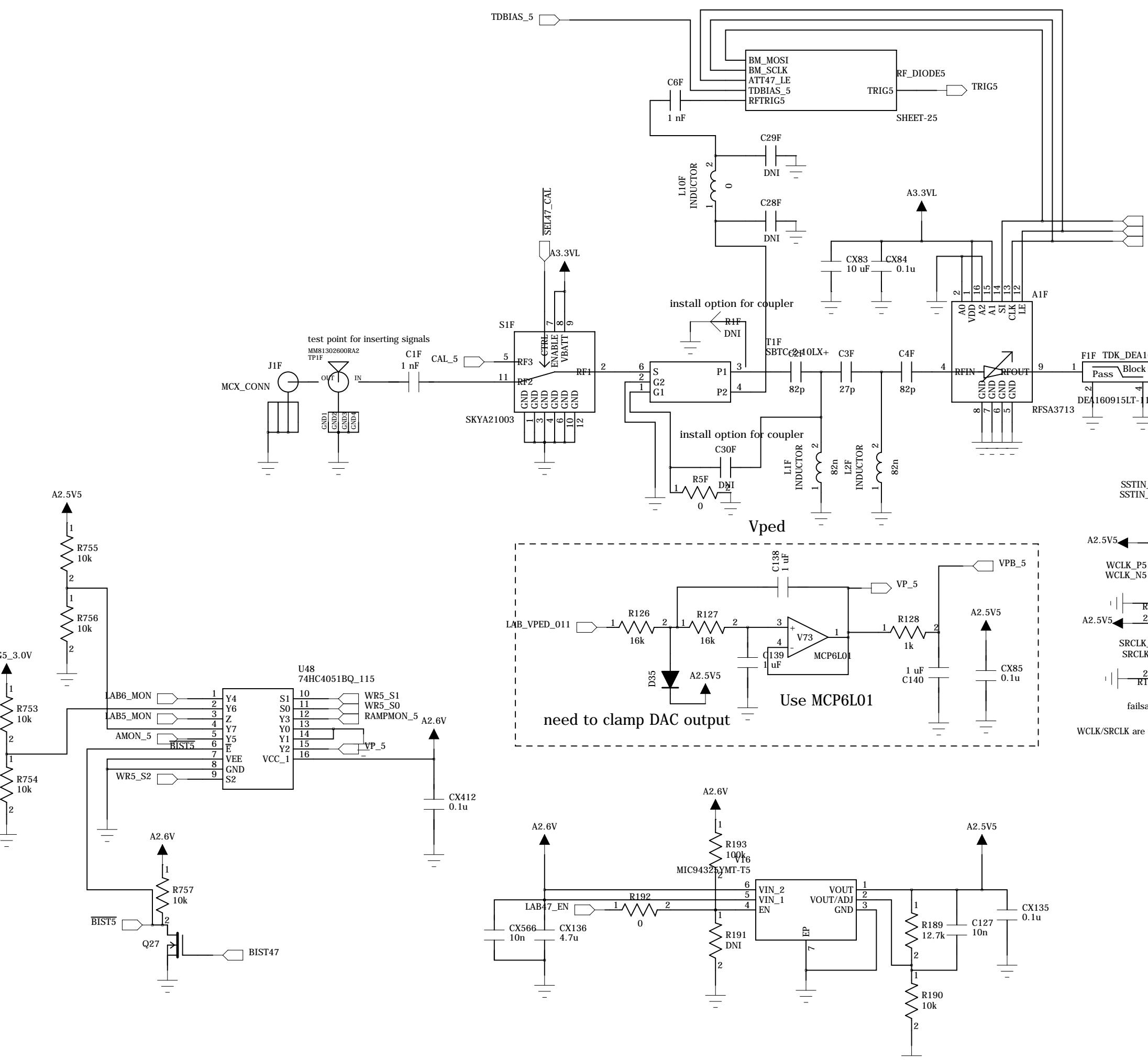
SHEET:

RF_DIODE4

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors



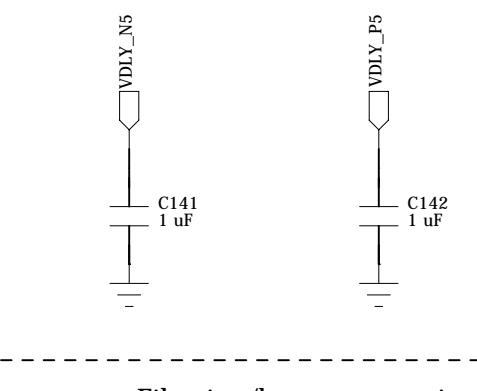
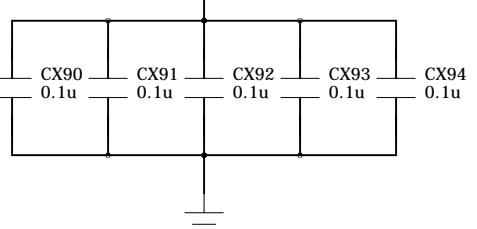
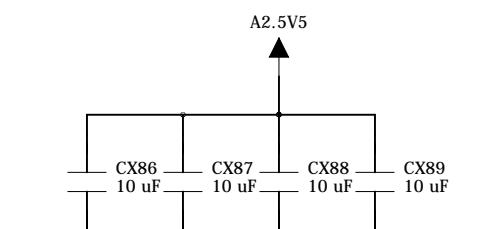
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CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

Ohio State University

RF_CHANNEL5

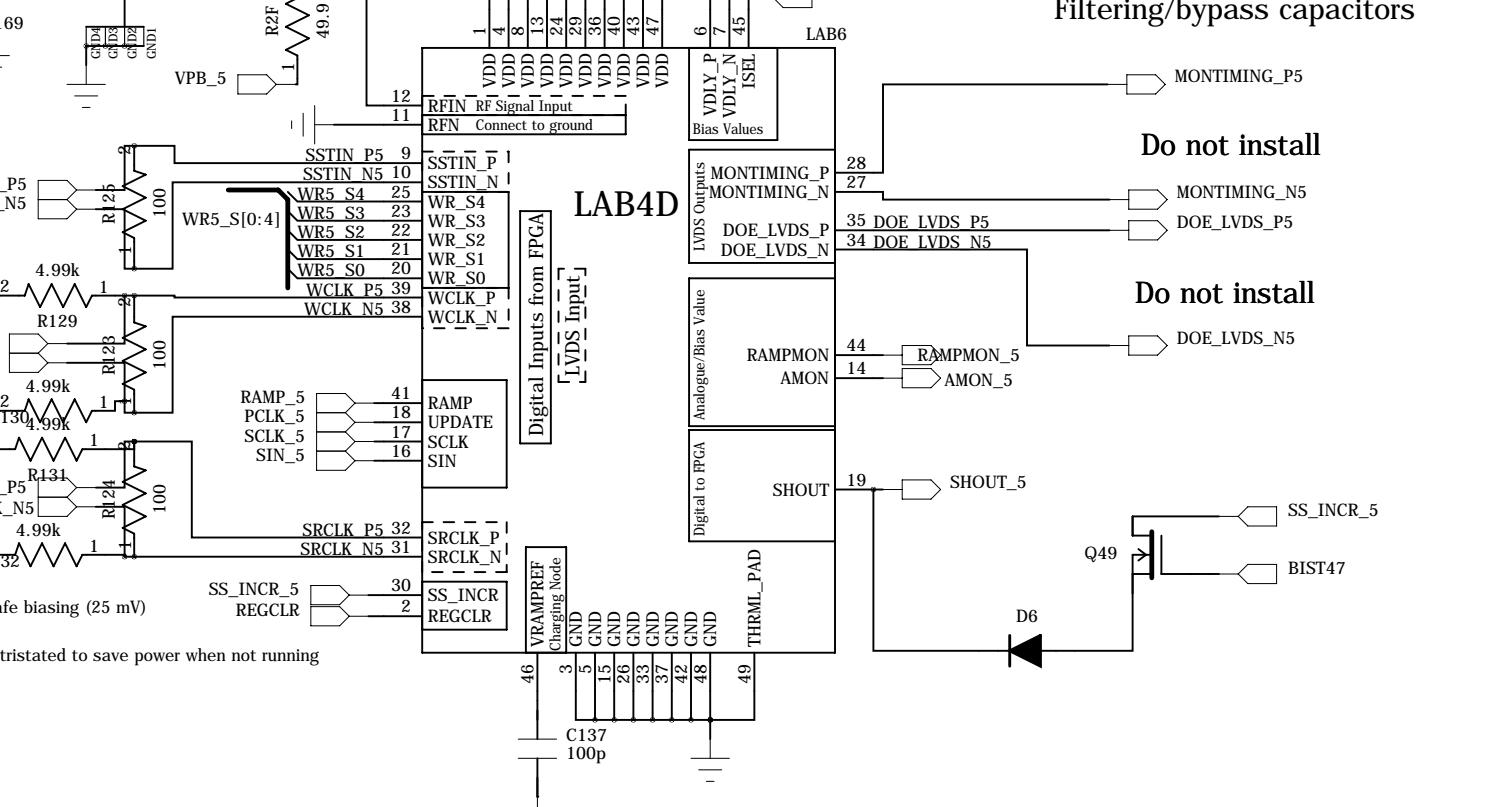
CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3

SCALE: <Scale> SHEET: 24 74



Do not install

Do not install



WCLK/SRCLK are tristated to save power when not running

COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL5		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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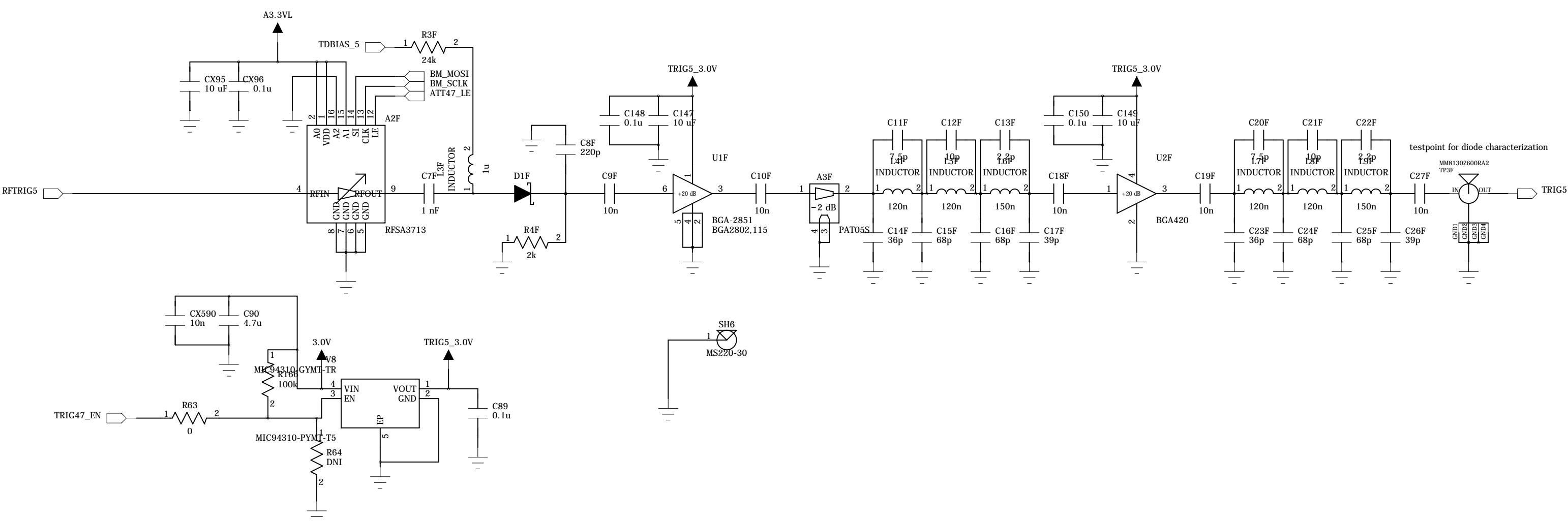
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COMPANY:		Ohio State University	
SHEET:		RF_DIODE5	
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE: <Scale>		SHEET:	25 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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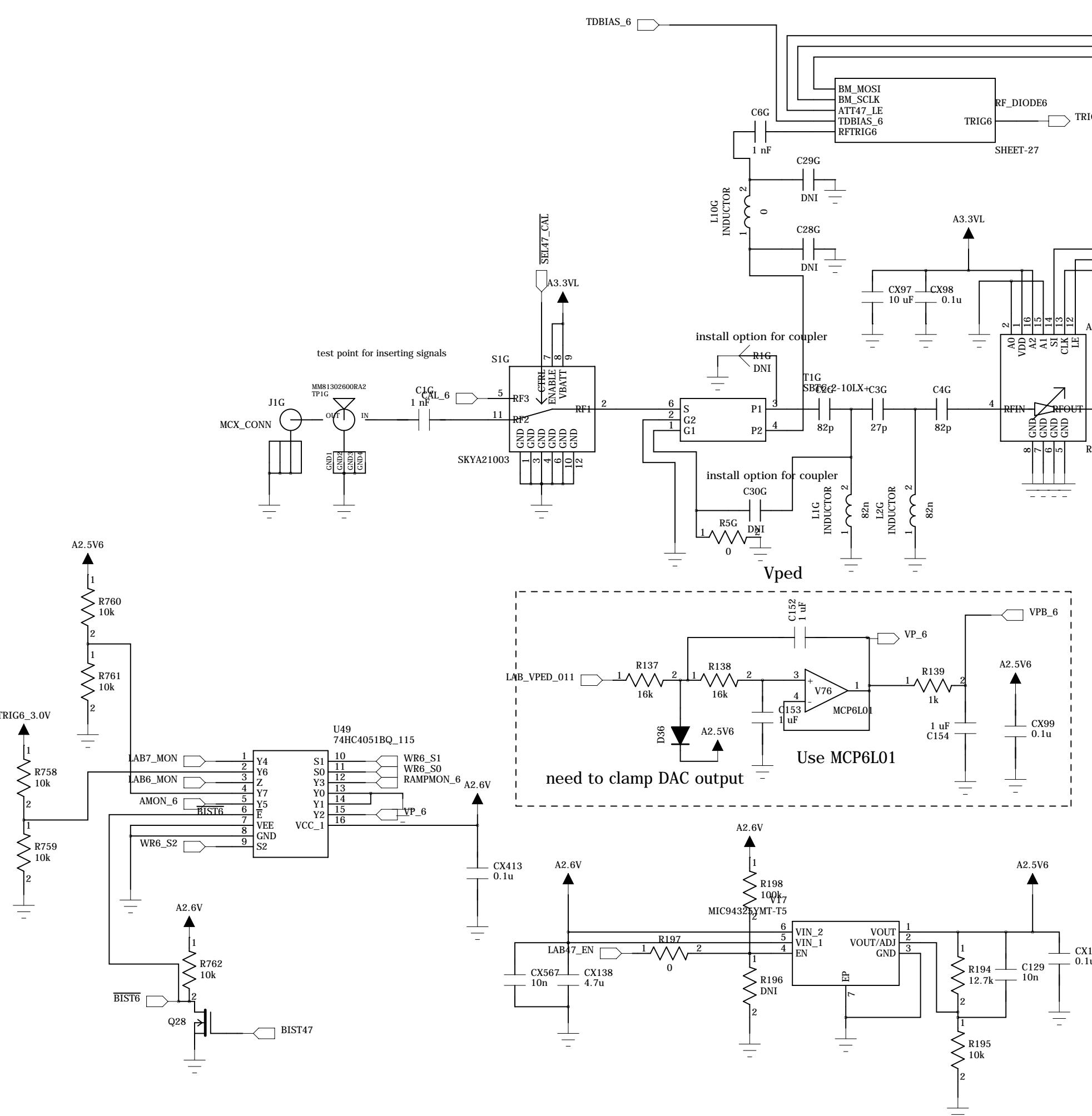
C

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WCLK/SRCLK are tristated to save power when not running

COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL6		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>	SHEET:	26 74

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REVISION RECORD

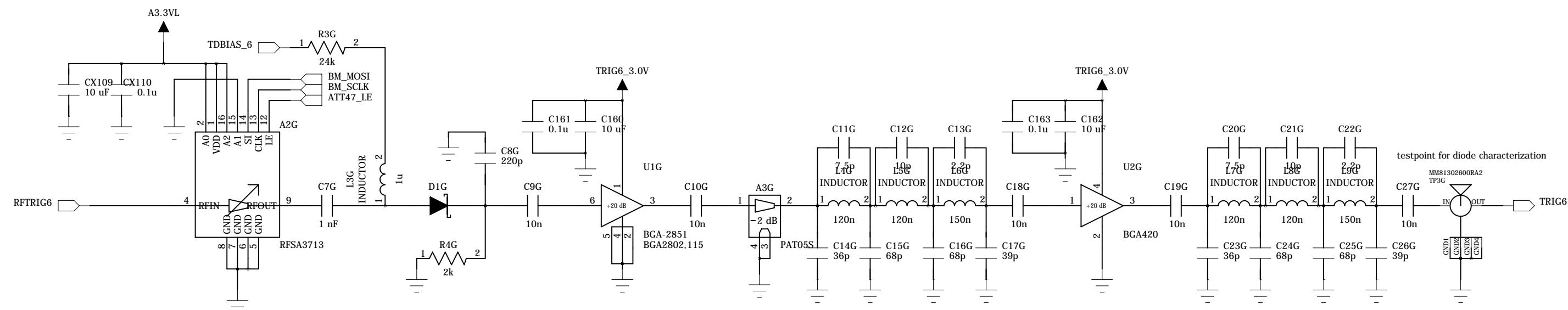
LTR	ECO NO:	APPROVED:	DATE:

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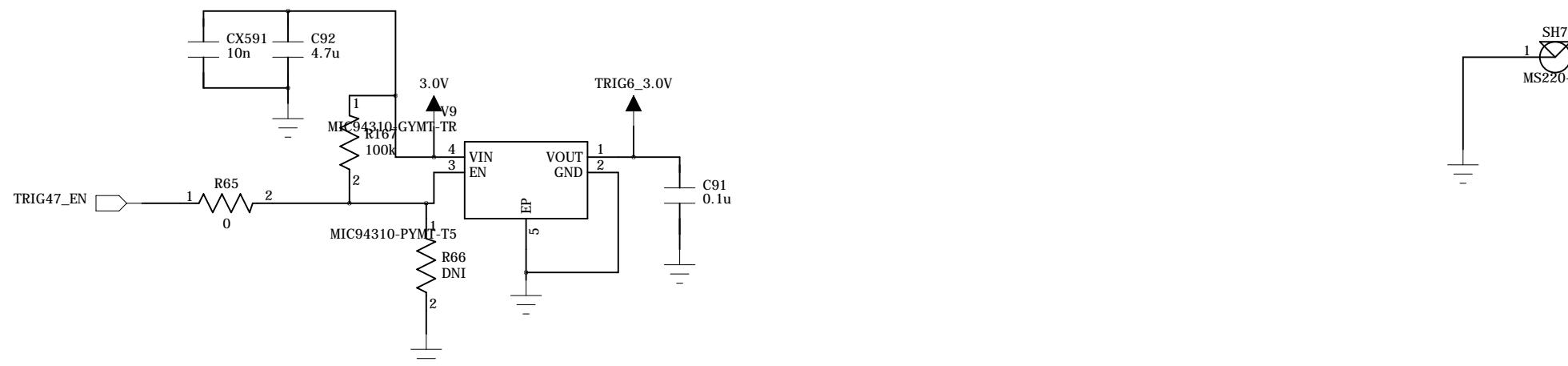
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COMPANY:	Ohio State University		
SHEET:	RF_DIODE6		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		SCALE: <Scale>
	SHEET: 27 74		SCALE: <Scale> SHEET: 27 74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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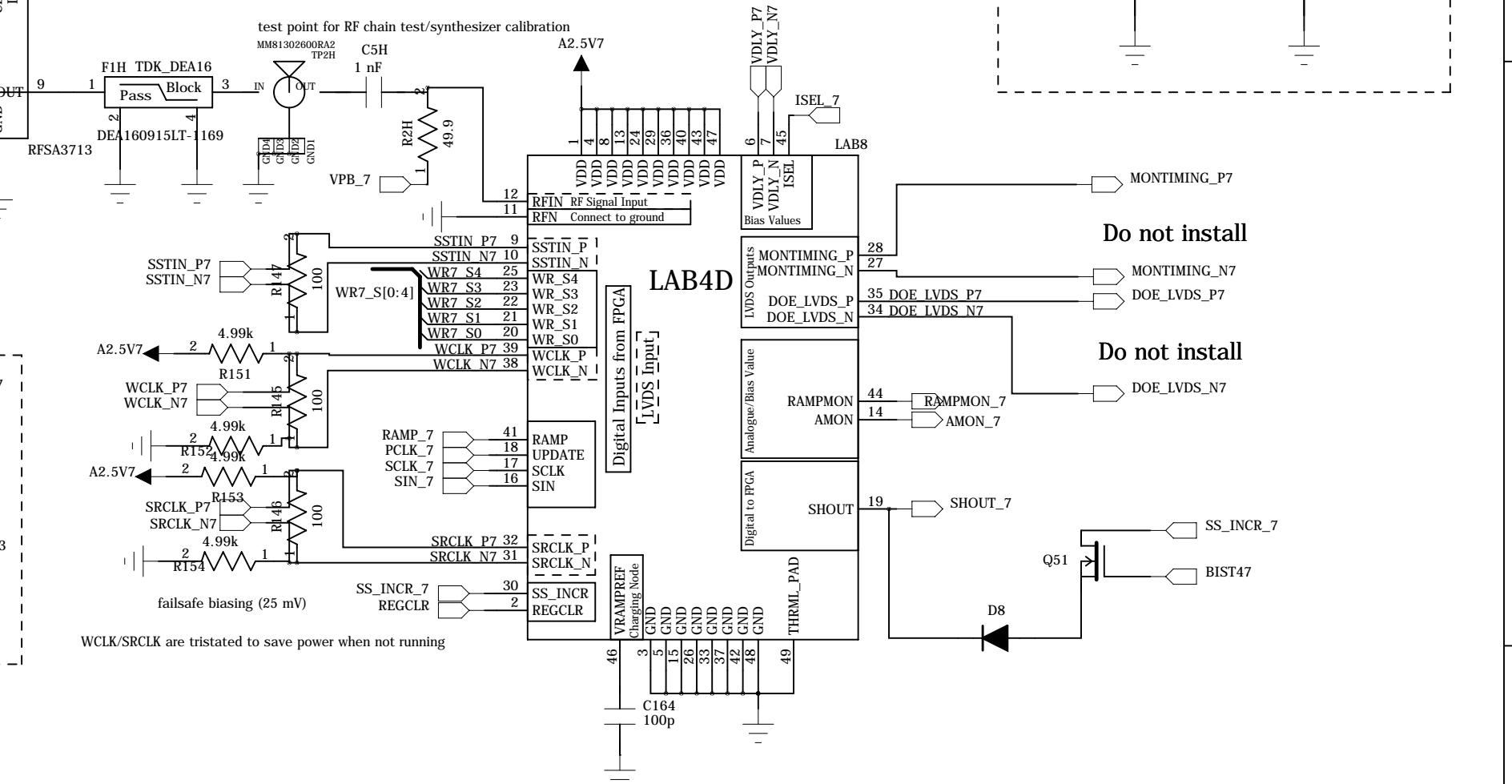
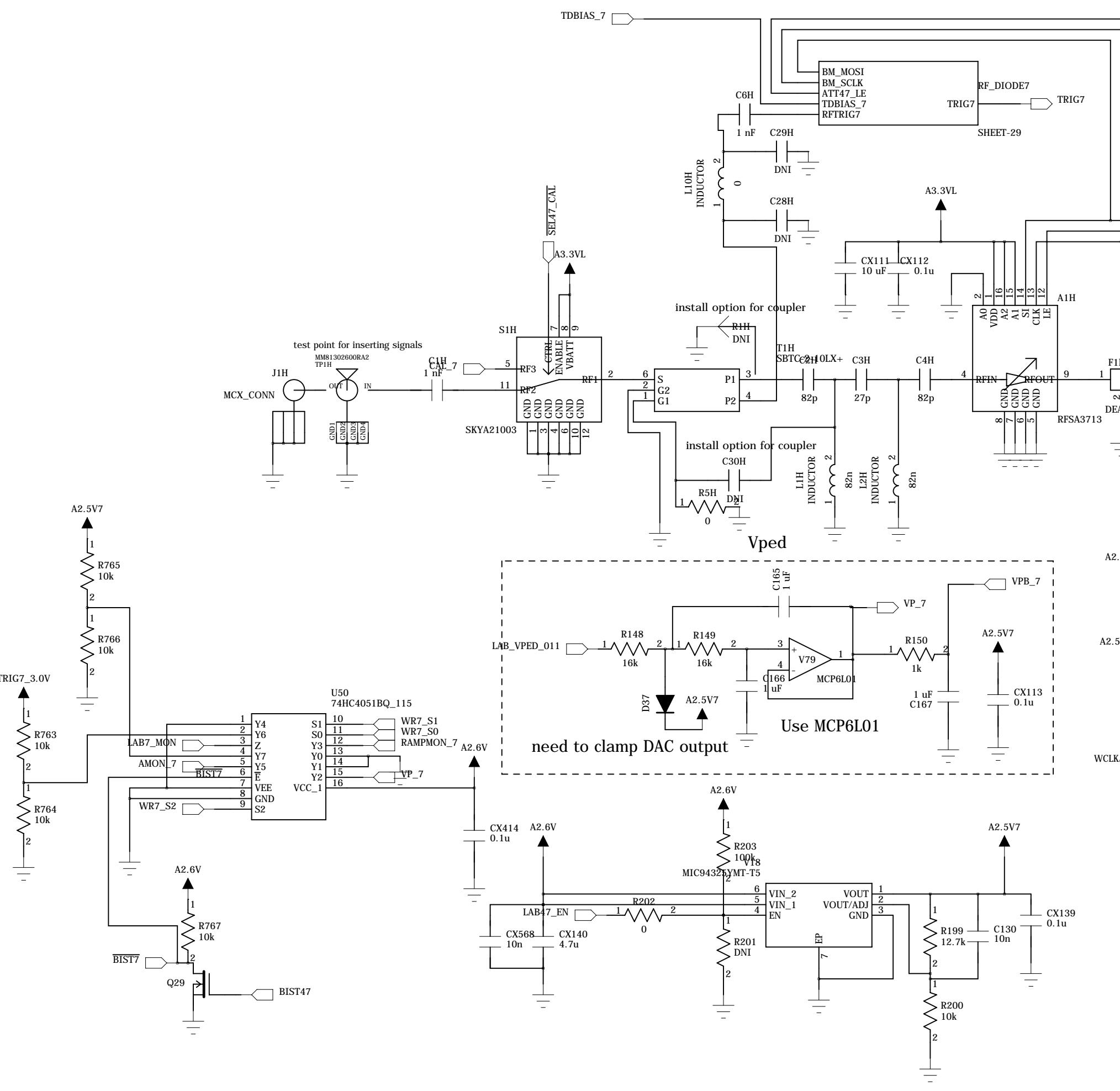
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DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

Ohio State University

RF_CHANNEL7

RADIANT

3

COMPANY:
SHEET:
DRAWN: PSA DATED: 2/27/23
CHECKED: PSA DATED: 3/3/23
QUALITY CONTROL: PSA DATED: 3/15/23
RELEASED: N/A DATED: N/A
CODE: 4 SIZE: C DESIGN: RADIANT REV: 3
SCALE: <Scale> SHEET: 28 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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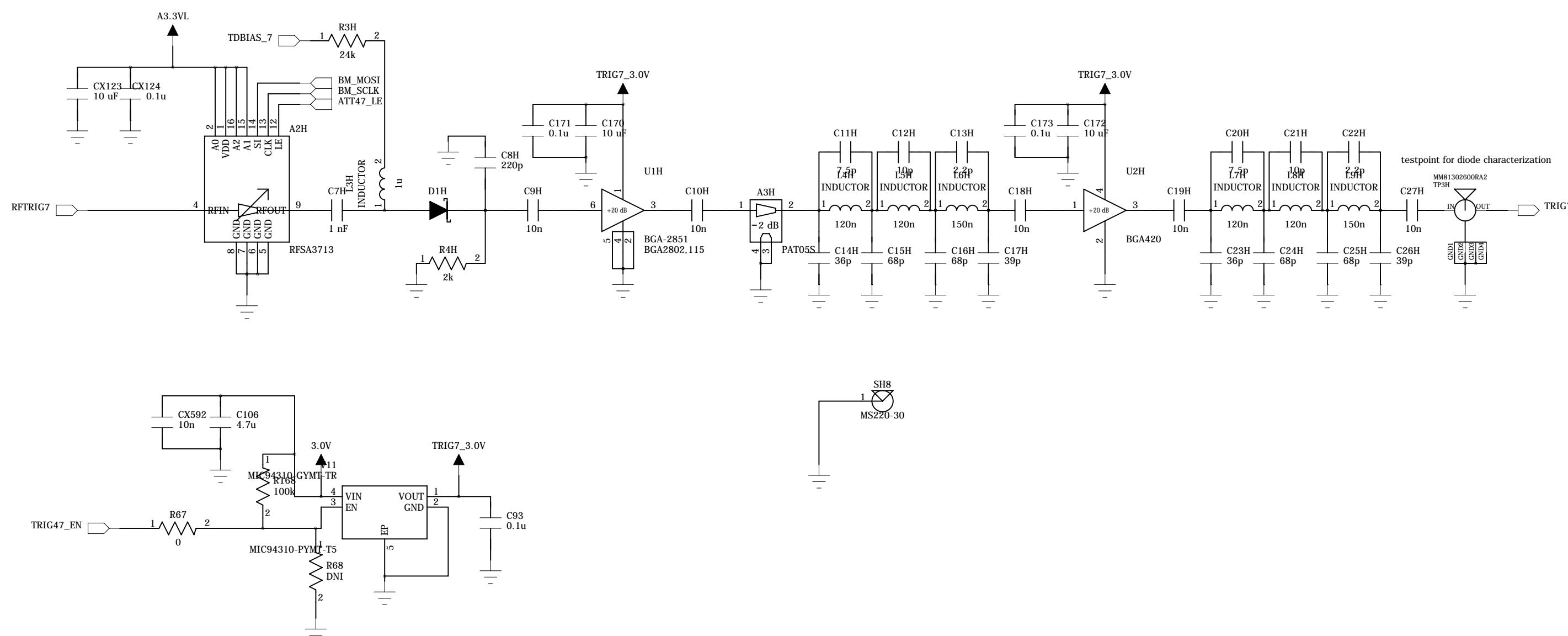
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COMPANY:		Ohio State University	
SHEET:		RF_DIODE7	
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE: <Scale>		SHEET:	29 74

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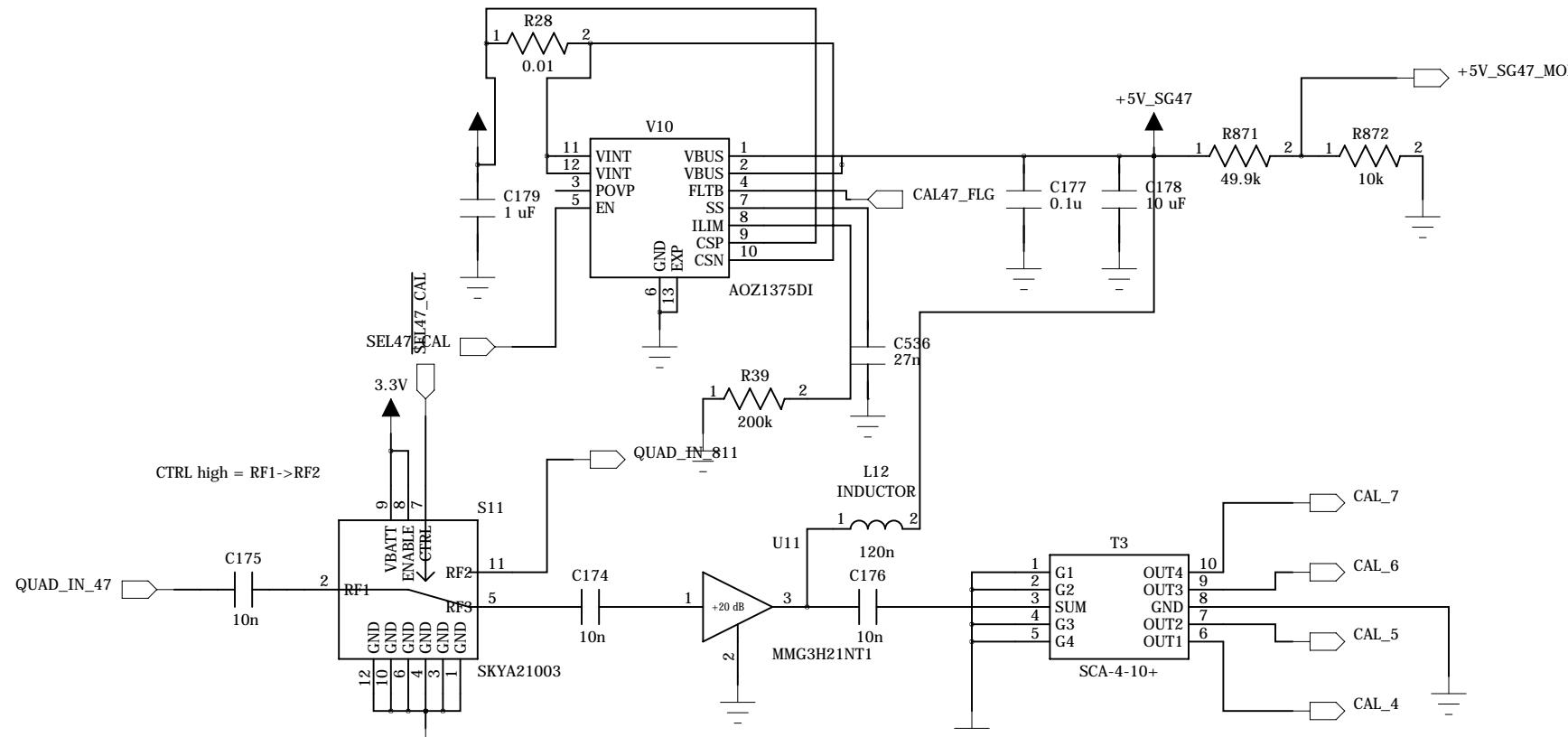
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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



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COMPANY:	Ohio State University		
SHEET:	QUAD_SIG_GENERATOR_1		
CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3
SCALE: <Scale>	SHEET: 30 74		

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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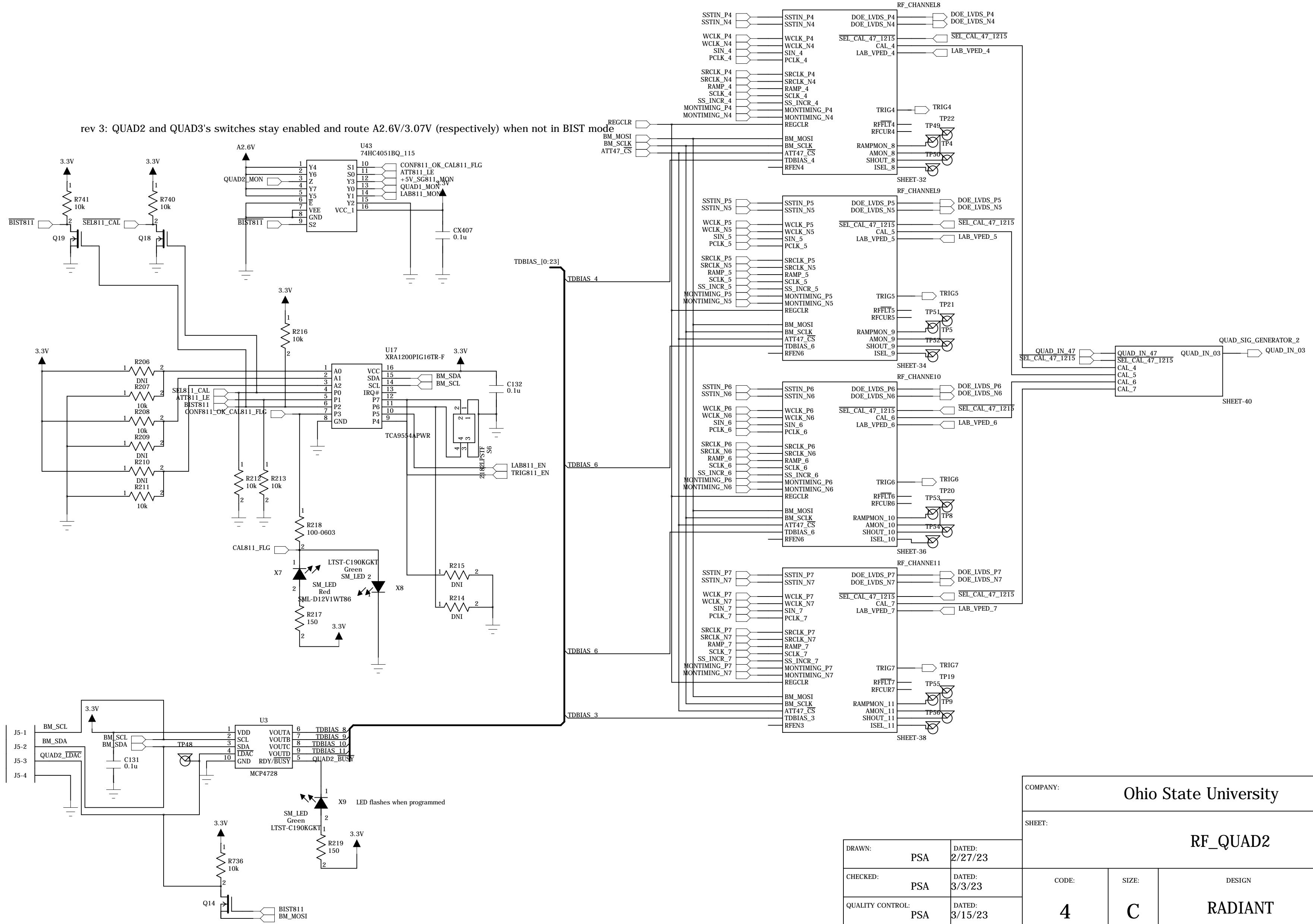
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rev 3: QUAD2 and QUAD3's switches stay enabled and route A2.6V/3.07V (respectively) when not in BIST mode



COMPANY:	Ohio State University		
SHEET:	RF_QUAD2		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		
CODE:	SIZE:	DESIGN:	REV:
4	C	RADIANT	3
Sheet: 31	74		

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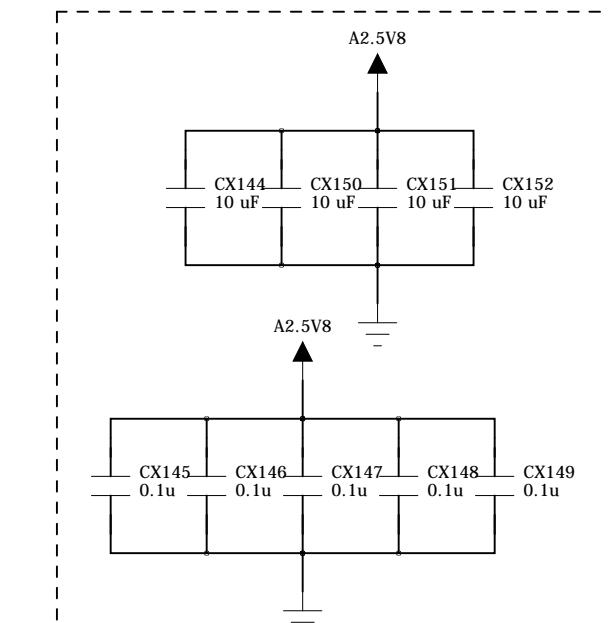
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REVISION RECORD			
TR	ECO NO:	APPROVED:	DATE:
	Filtering/bypass capacitors		

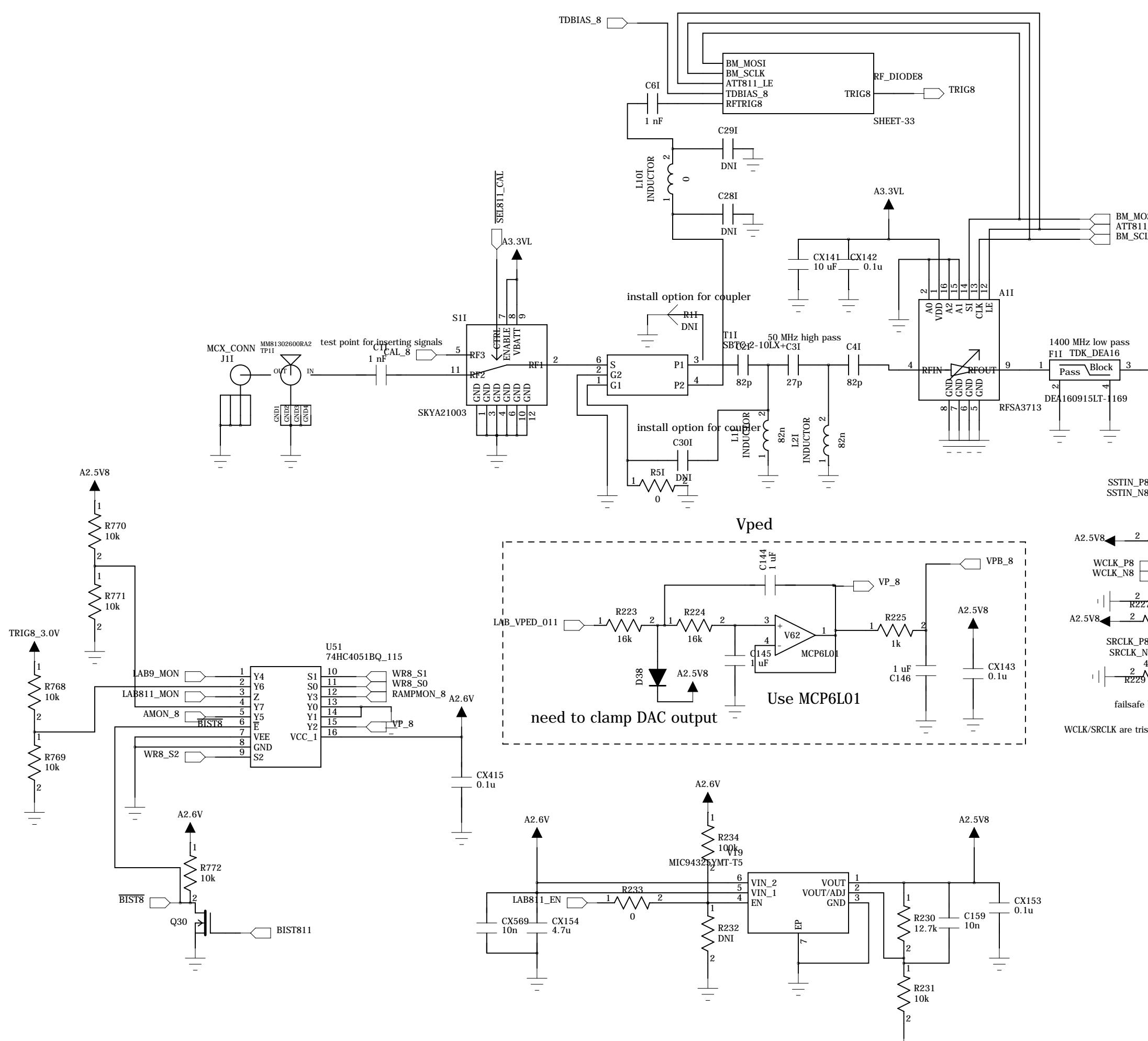


Filtering/bypass capacitors

Do not install

Do not install

Do not install



WCLK/SRCLK are tristated to save power when not running.

Ohio State University

RF_CHANNEL8

DRAWN: PSA	DATED: 2/27/23	RF_CHANNEL8			
CHECKED: PSA	DATED: 3/3/23	CODE: 4	SIZE: C	DESIGN RADIANT	REV:
QUALITY CONTROL: PSA	DATED: 3/15/23				3
RELEASED: N/A	DATED: N/A	SCALE: <Scale>			SHEET: 32 74

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REVISION RECORD

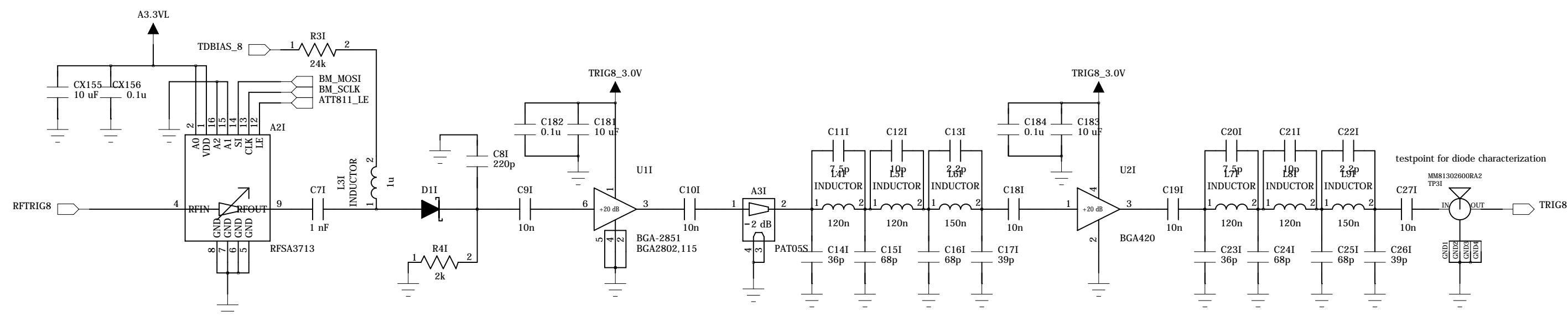
LTR	ECO NO:	APPROVED:	DATE:

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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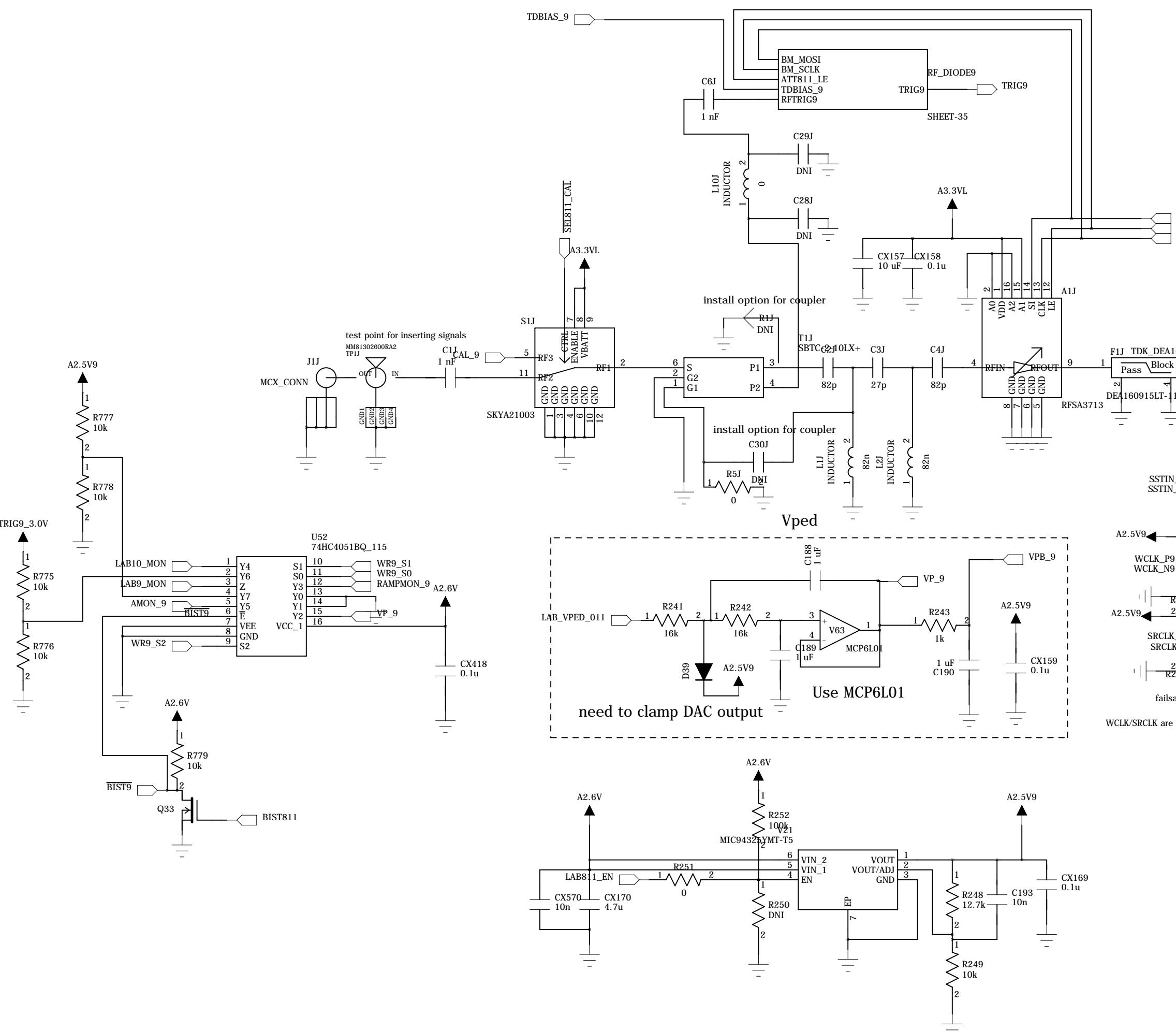
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COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL9		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>	SHEET:	34 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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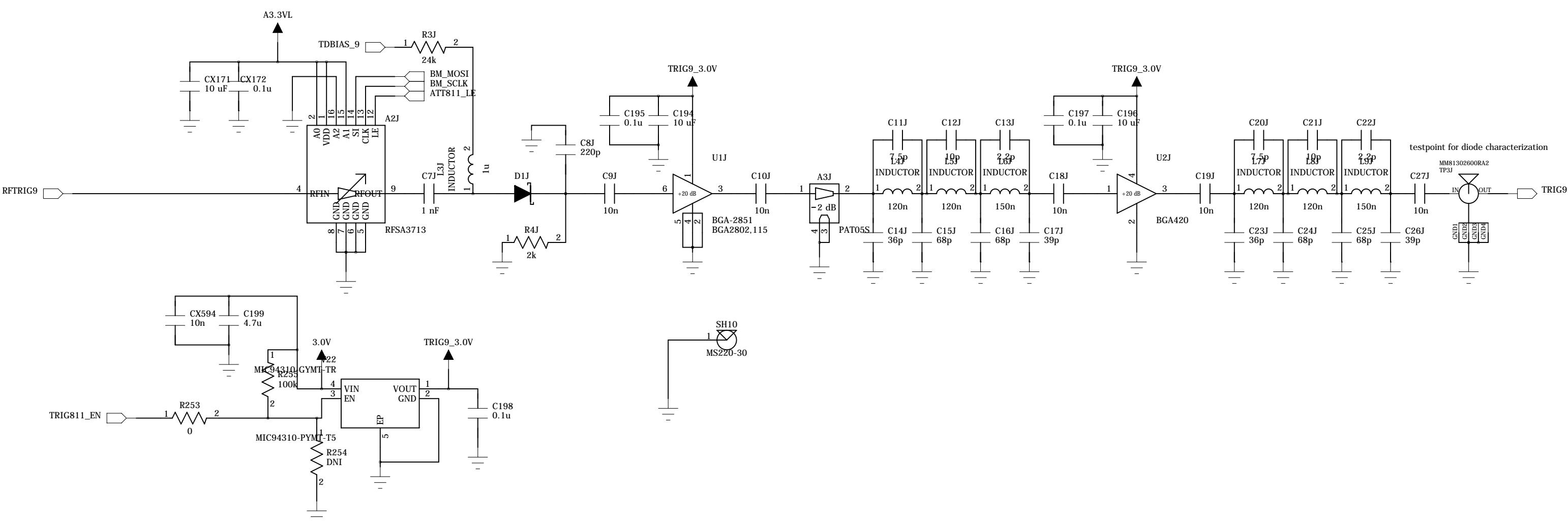
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COMPANY:

Ohio State University

SHEET:

RF_DIODE9

DRAWN:	PSA	DATED: 2/27/23	CODE: 4	SIZE: C	DESIGN: RADIANT	REV: 3
CHECKED:	PSA	DATED: 3/3/23				
QUALITY CONTROL:	PSA	DATED: 3/15/23				
RELEASED:	N/A	DATED: N/A				

SCALE: <Scale> SHEET: 35 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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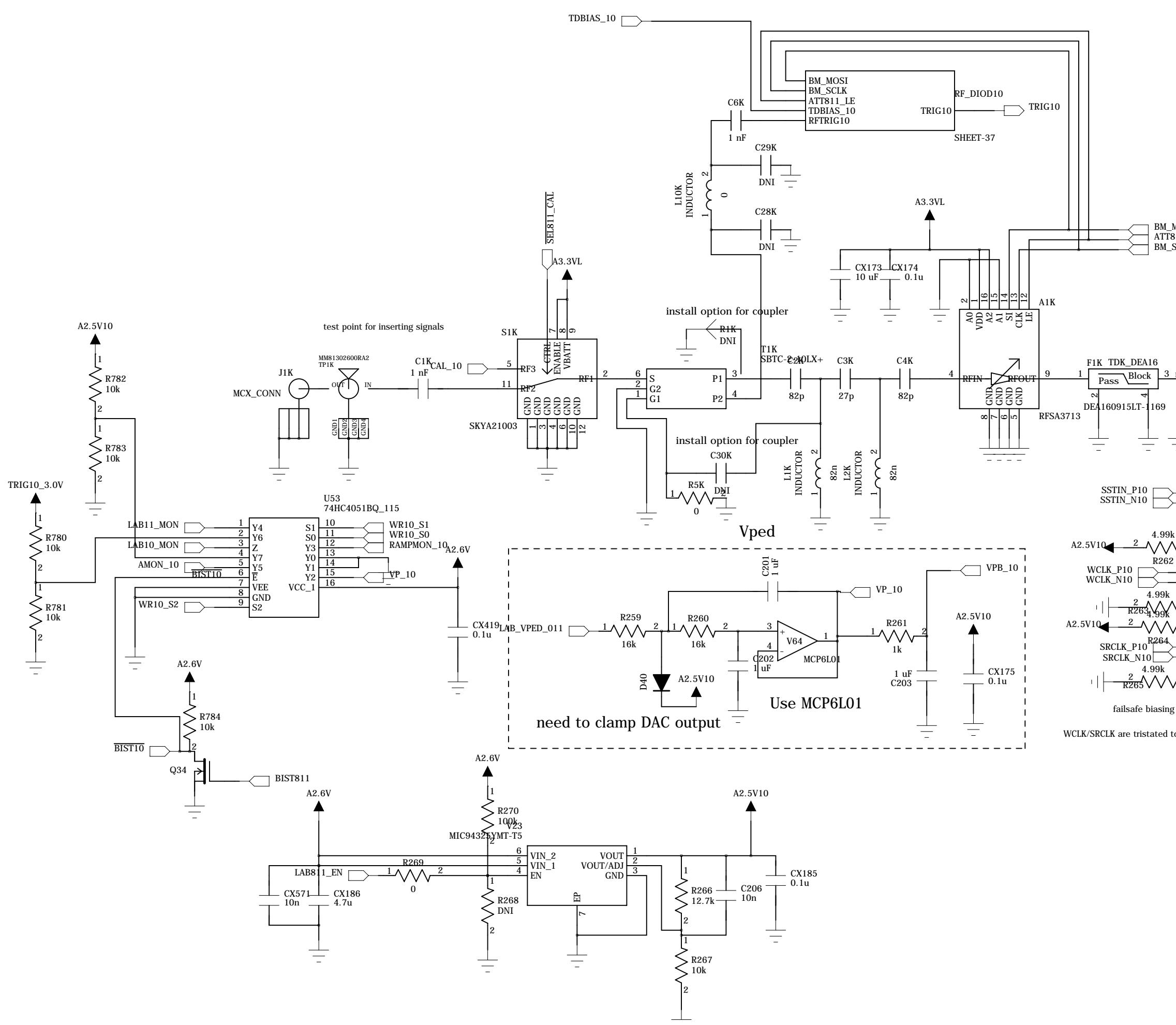
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DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

COMPANY: Ohio State University
 SHEET: RF_CHANNEL10
 CODE: 4 SIZE: C DESIGN: RADIANT REV: 3
 SCALE: <Scale> SHEET: 36 74

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REVISION RECORD

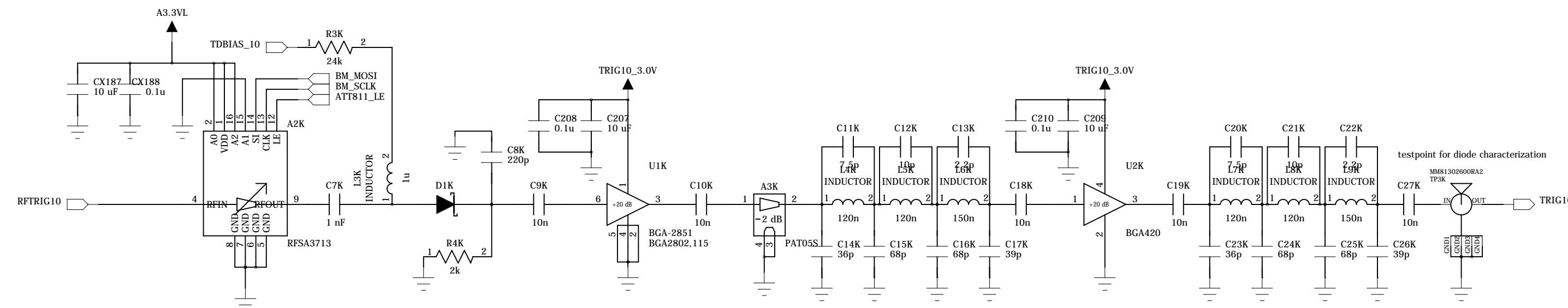
LTR	ECO NO:	APPROVED:	DATE:

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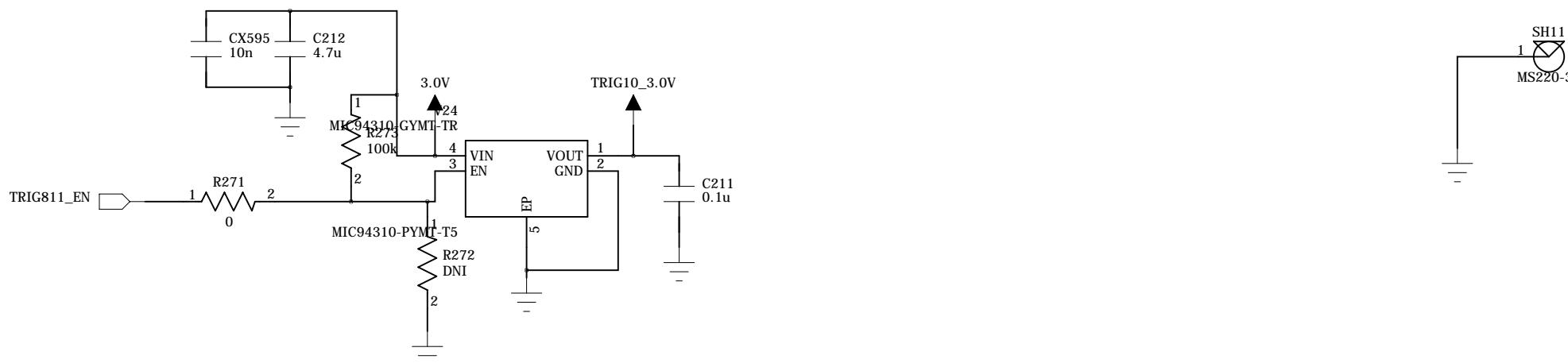
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COMPANY:	Ohio State University		
SHEET:	RF_DIOD10		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		Sheet: 37 74

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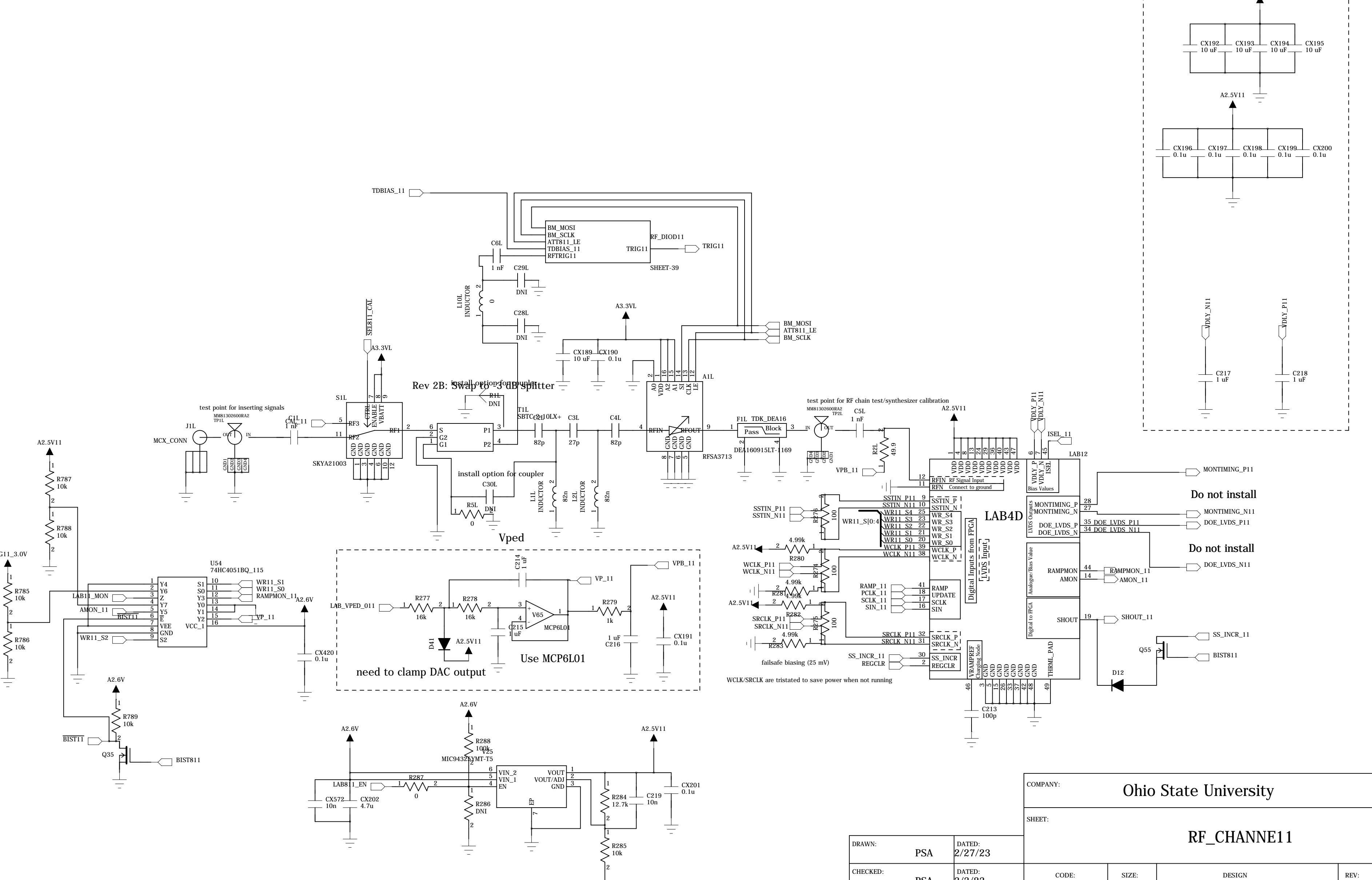
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REVISION RECORD			
R	ECO NO:	APPROVED:	DATE:
	Filtering/bypass capacitors		



Ohio State University

RF_CHANNEL11

DRAWN: PSA	DATED: 2/27/23	RF_CHANNE11			
CHECKED: PSA	DATED: 3/3/23	CODE: 4	SIZE: C	DESIGN RADIANT	REV: 3
QUALITY CONTROL: PSA	DATED: 3/15/23				
RELEASED: N/A	DATED: N/A	SCALE: <Scale>		SHEET: 38 74	

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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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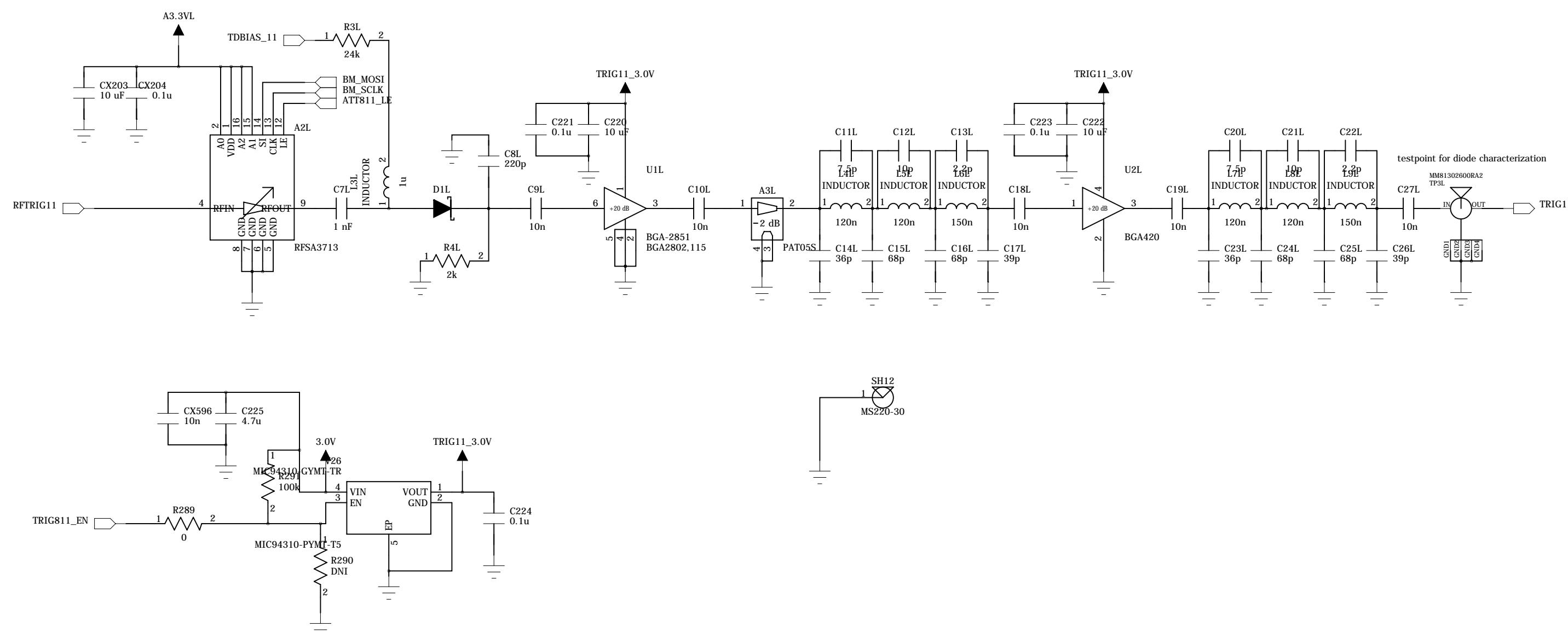
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COMPANY:	Ohio State University		
SHEET:	RF_DIOD11		
CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3
SCALE: <Scale>	SHEET: 39		74

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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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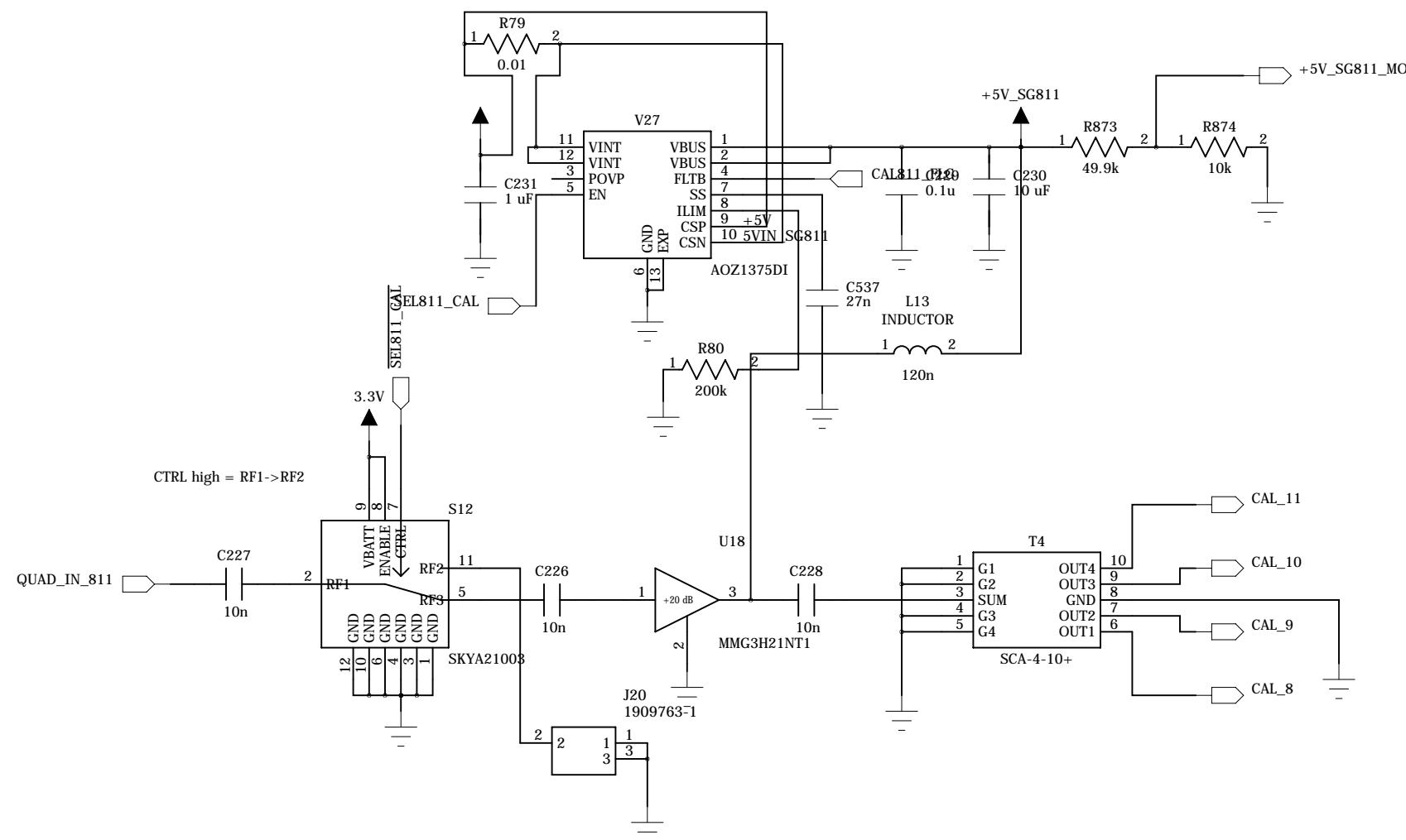
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COMPANY:	Ohio State University		
SHEET:	QUAD_SIG_GENERATOR_2		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	4	SIZE:	DESIGN: RADIANT REV: 3
SCALE: <Scale>			SCALE: 40 74

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there's stuff here, it's just off-sheet cuz it's too big

COMPANY:	Ohio State University		
SHEET:	AUXCPLDS		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
	CODE:	SIZE:	DESIGN
	4	C	RADIANT
	REV:		3
	SCALE: <Scale>		SHEET: 4 74

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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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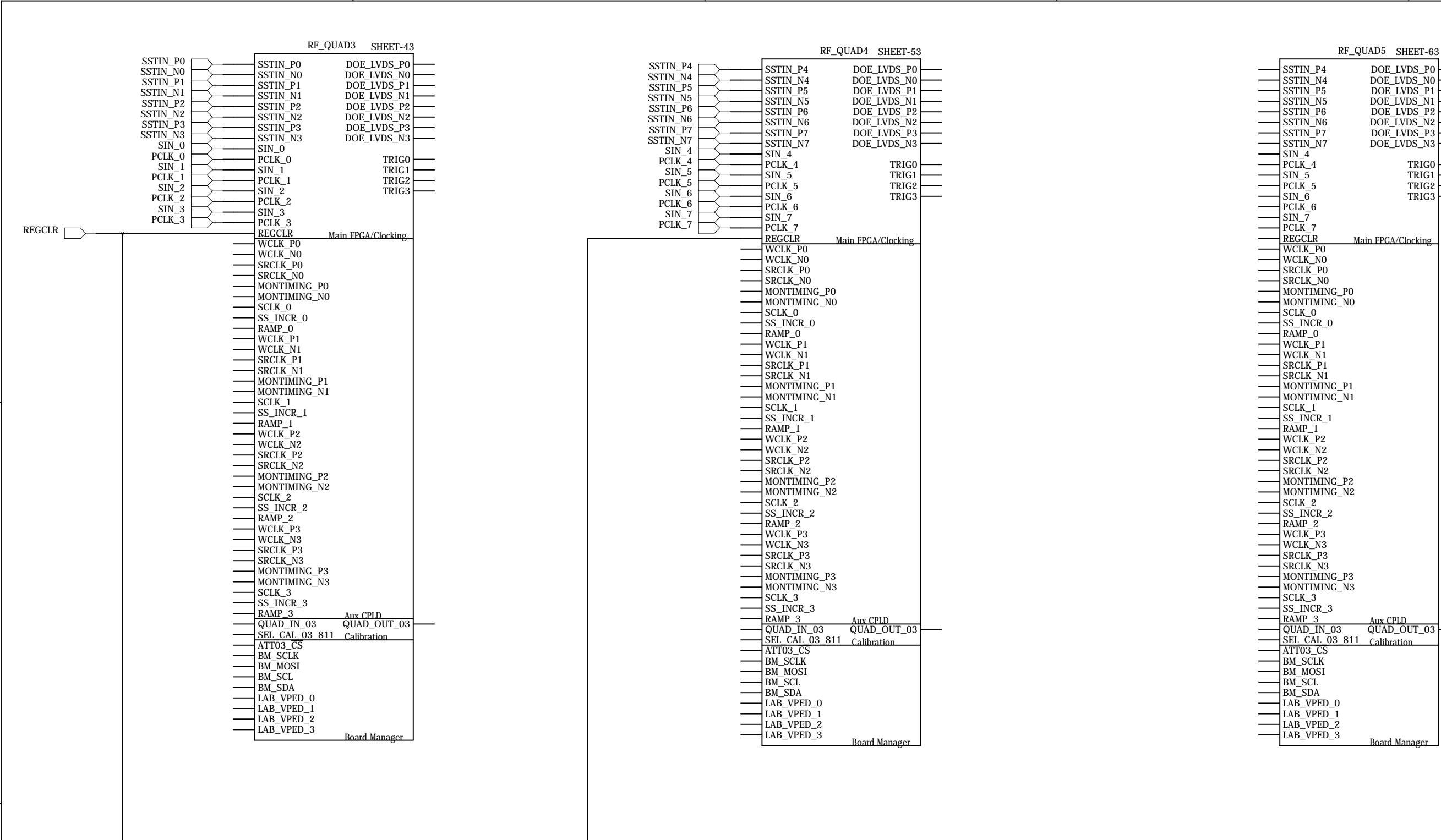
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DRAWN:	PSA	DATED: 2/27/23	CODE: 4	SIZE: C	DESIGN: RADIANT	REV: 3
CHECKED:	PSA	DATED: 3/3/23				
QUALITY CONTROL:	PSA	DATED: 3/15/23				
RELEASED:	N/A	DATED: N/A				
SCALE: <Scale>			SHEET: 42 74			

COMPANY: Ohio State University
SHEET: RF_LEFT0

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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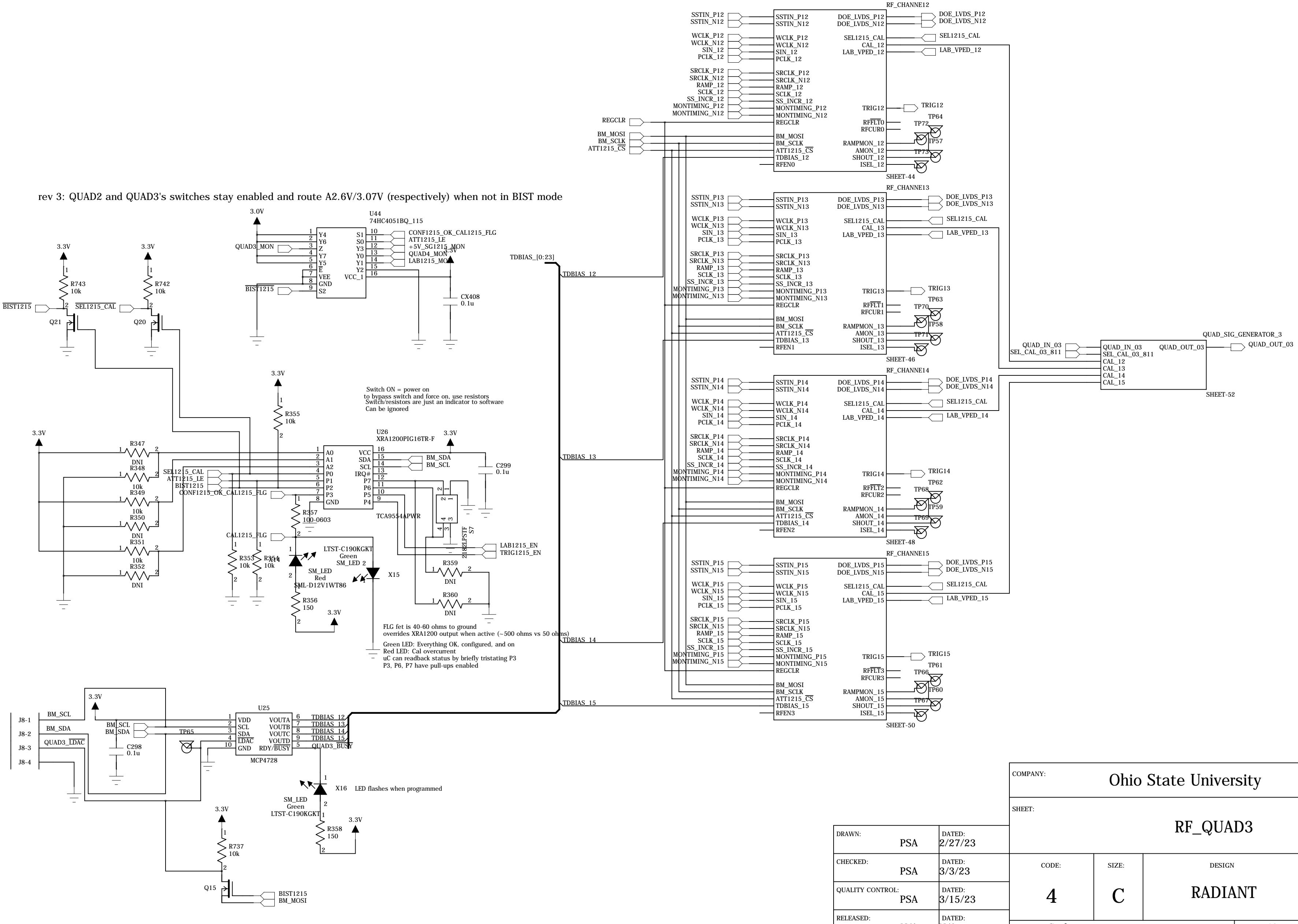
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:
	Filtering/bypass capacitors		

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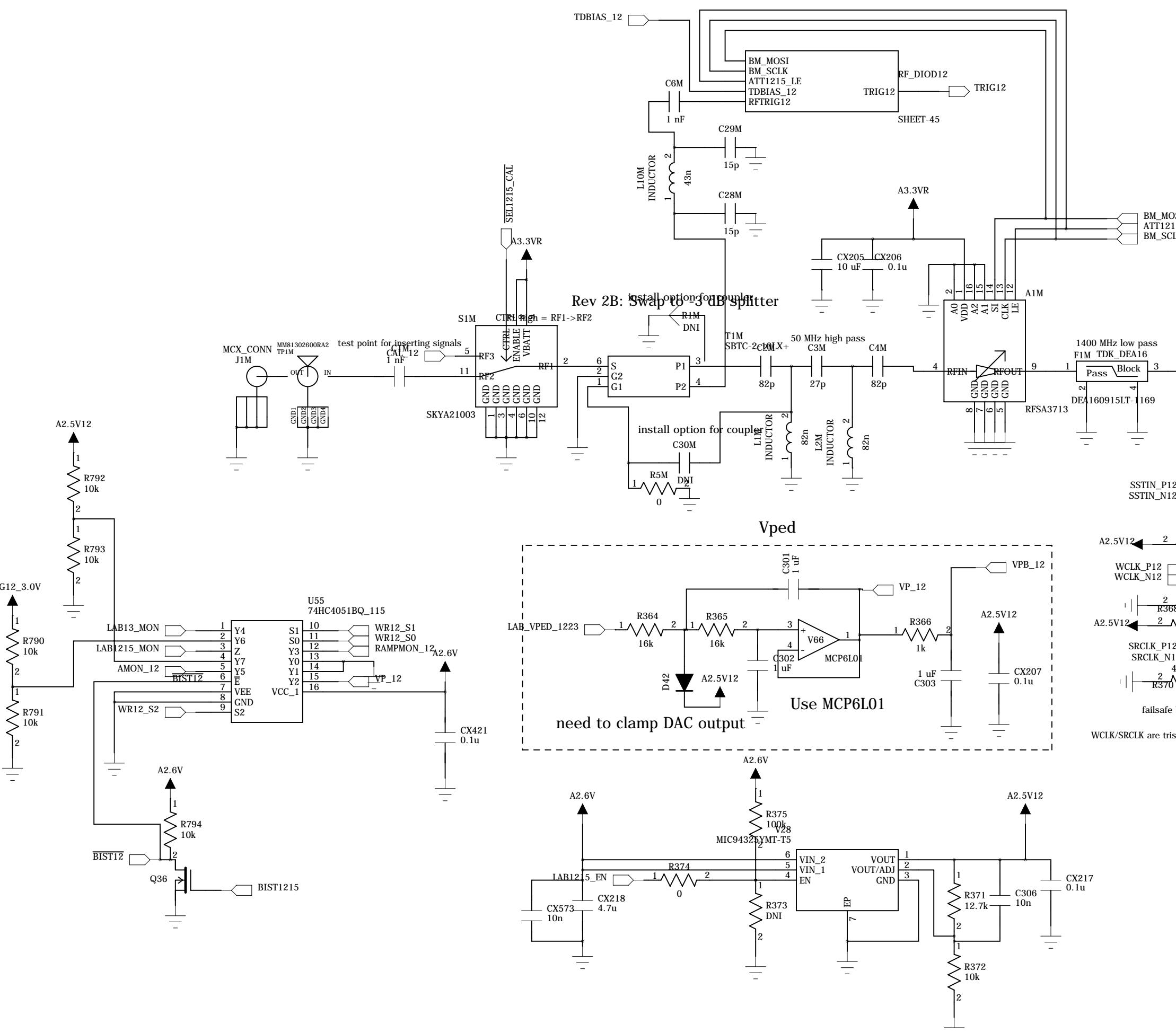
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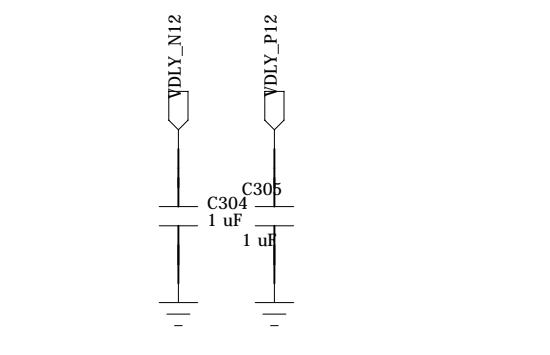
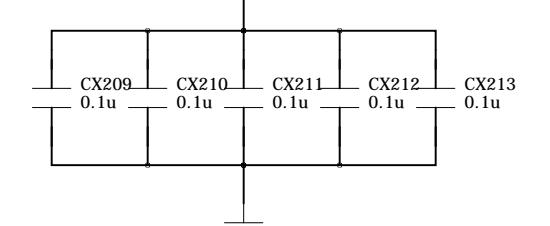
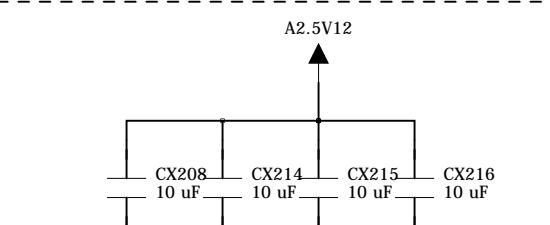
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

CODE: 4 SIZE: C DESIGN: RADIANT REV: 3

COMPANY: Ohio State University

SHEET: RF_CHANNEL12

SCALE: <Scale> SHEET: 44 74



Filtering/bypass capacitors

Do not install

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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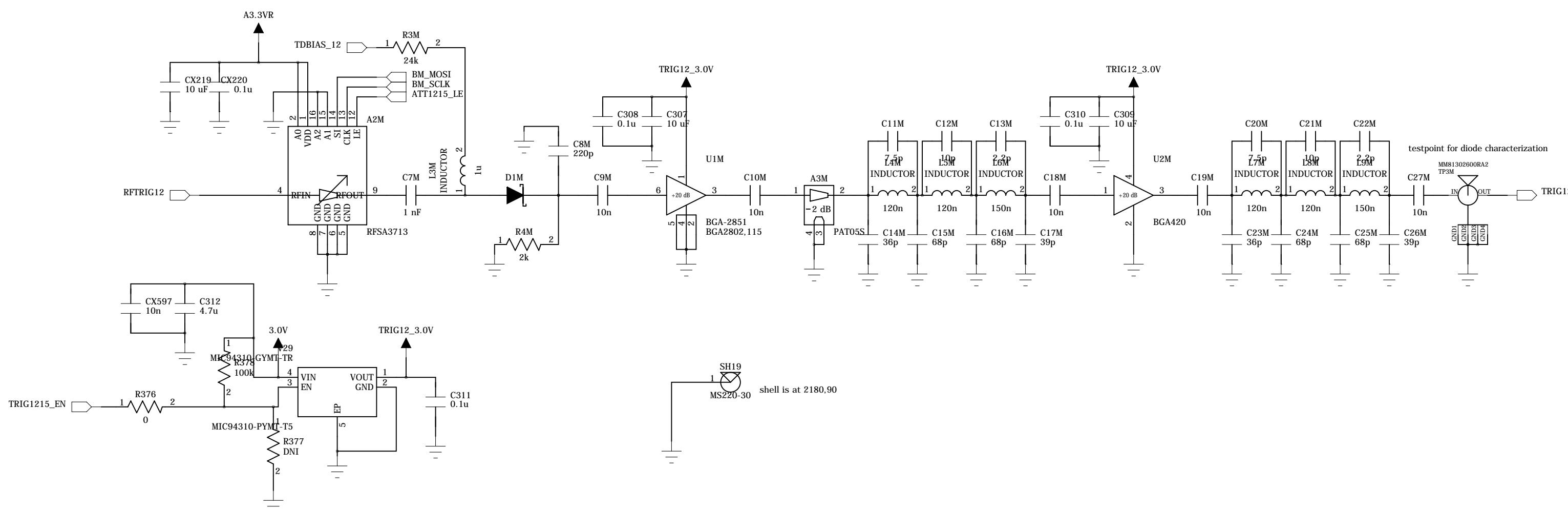
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COMPANY:	Ohio State University		
SHEET:	RF_DIOD12		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
CODE:	4	SIZE:	RADIANT
REV:	3	SCALE: <Scale>	Sheet: 45 74

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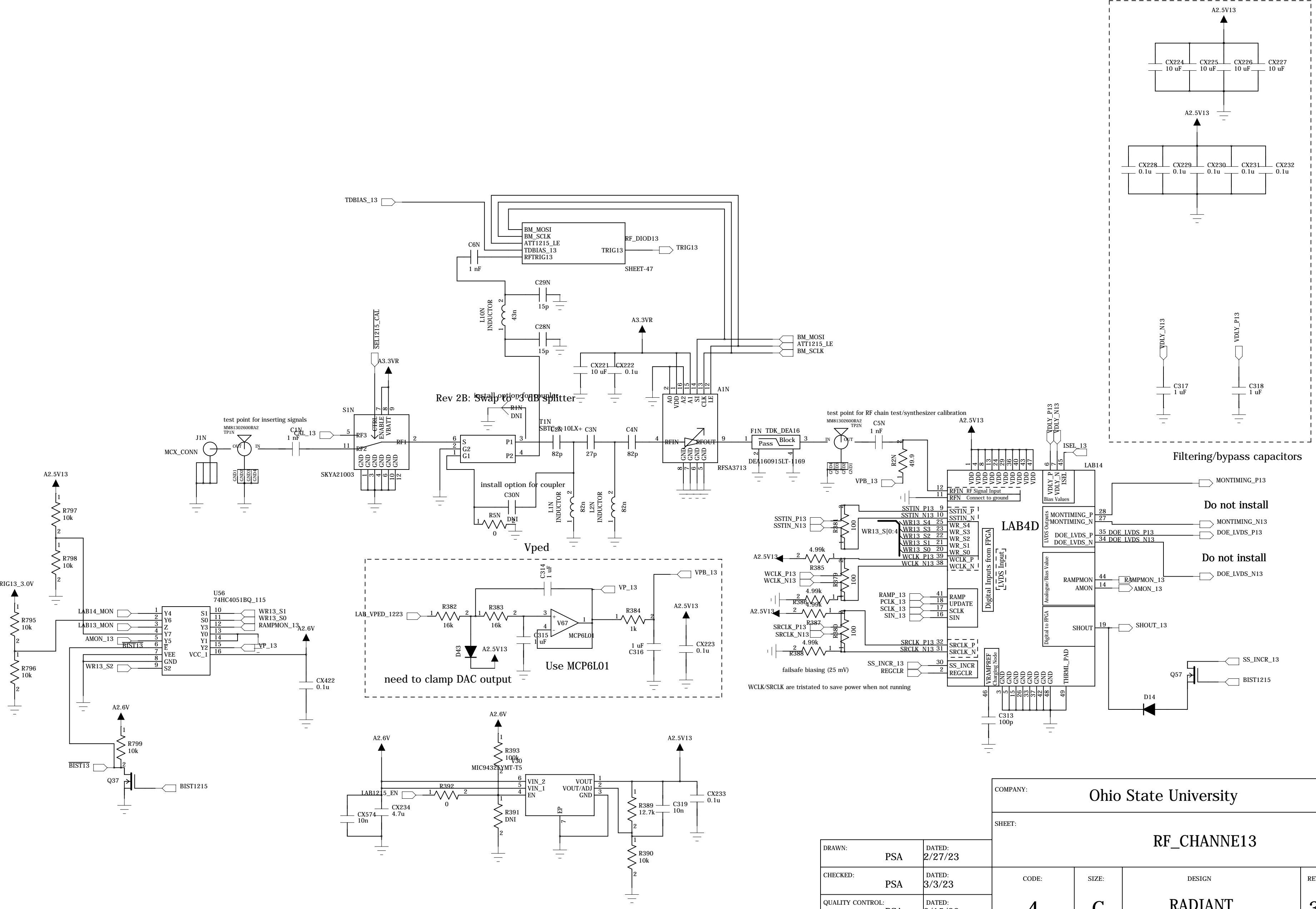
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REVISION RECORD			
R	ECO NO:	APPROVED:	DATE:
	Filtering/bypass capacitors		



Ohio State University

RF_CHANNE13

DRAWN: PSA	DATED: 2/27/23	RF_CHANNE13			
CHECKED: PSA	DATED: 3/3/23	CODE: 4	SIZE: C	DESIGN RADIANT	REV: 3
QUALITY CONTROL: PSA	DATED: 3/15/23				
RELEASED: N/A	DATED: N/A	SCALE: <Scale>			SHEET: 46 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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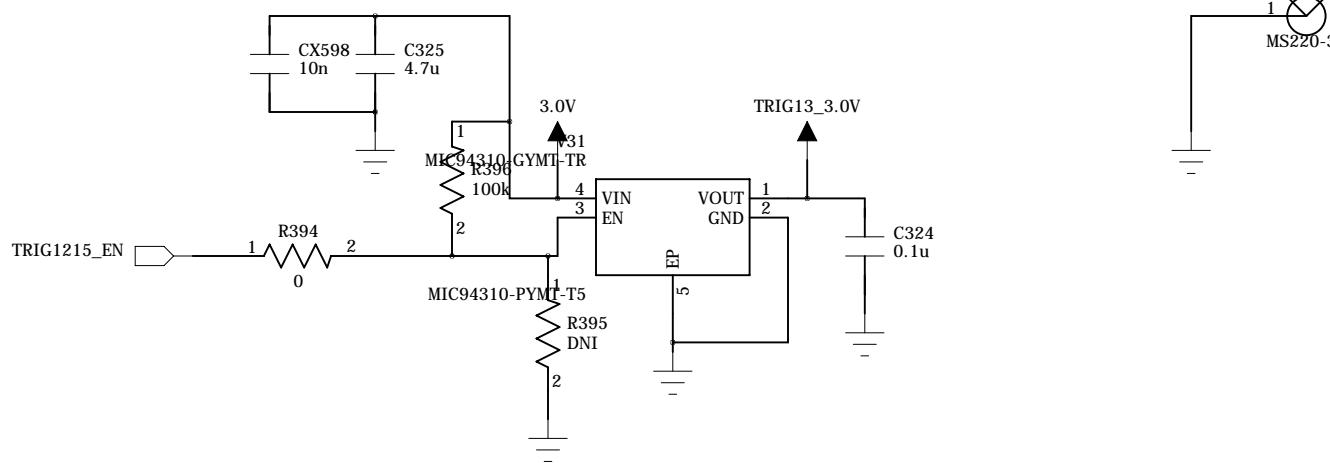
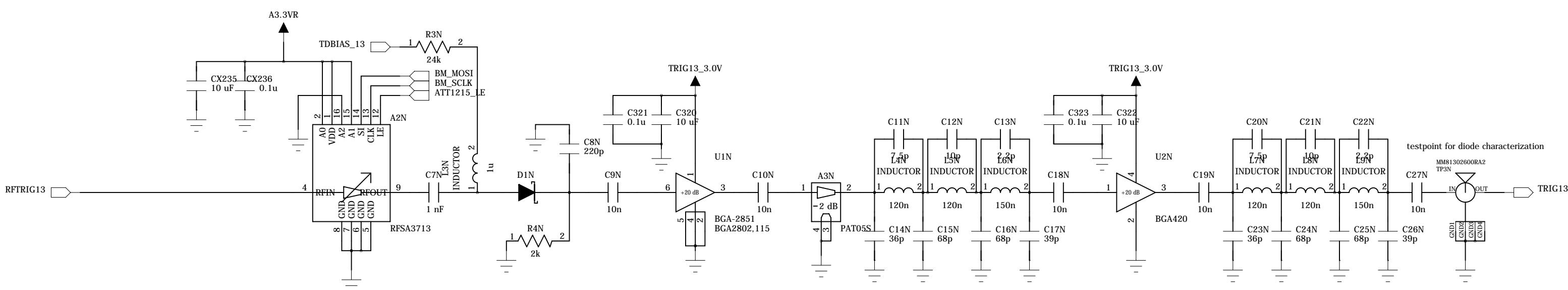
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COMPANY:		Ohio State University	
SHEET:		RF_DIOD13	
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE: <Scale>		SHEET: 47 74	
CODE:	SIZE:	DESIGN	
4	C	RADIANT	
REV:	3		

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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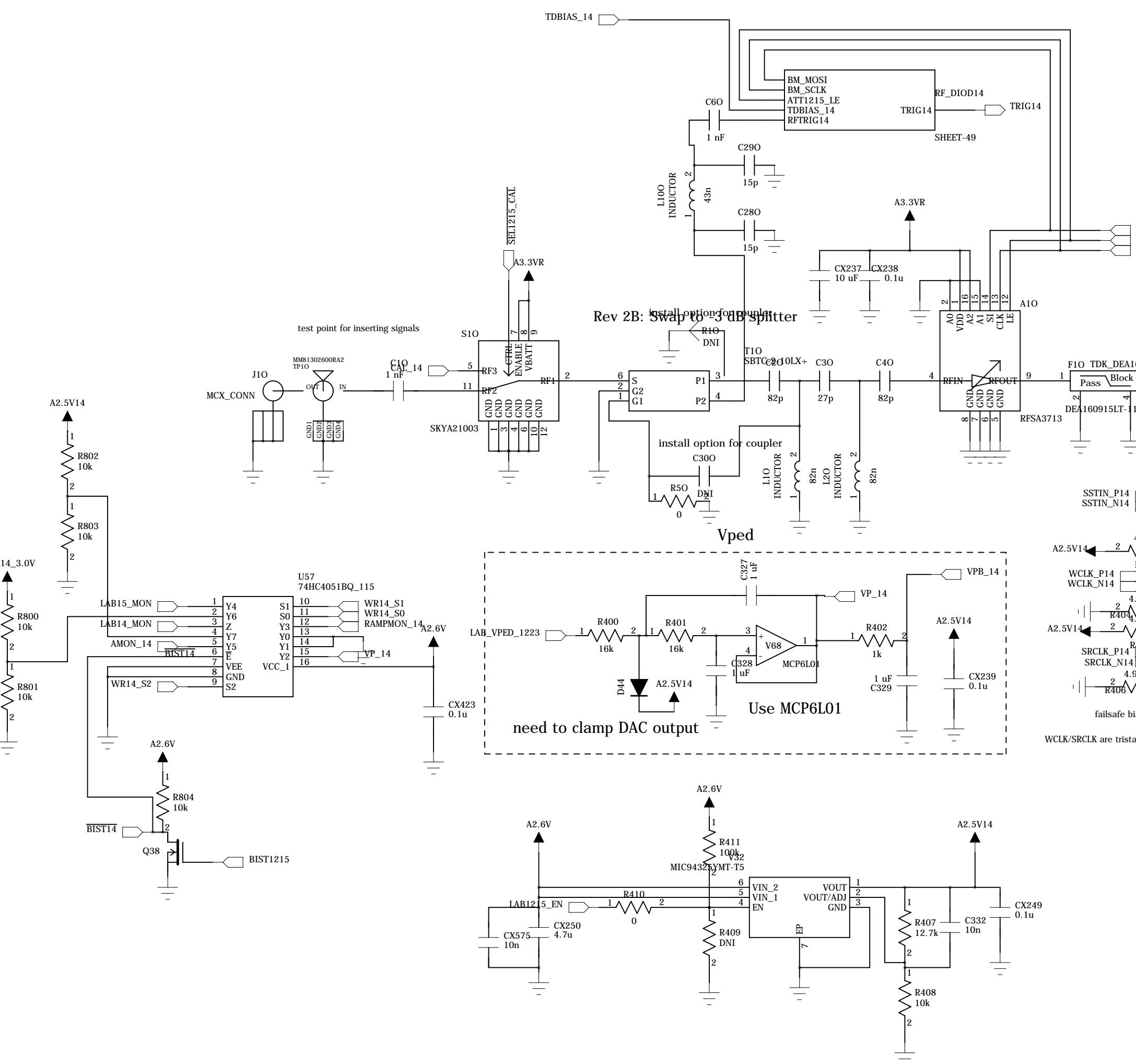
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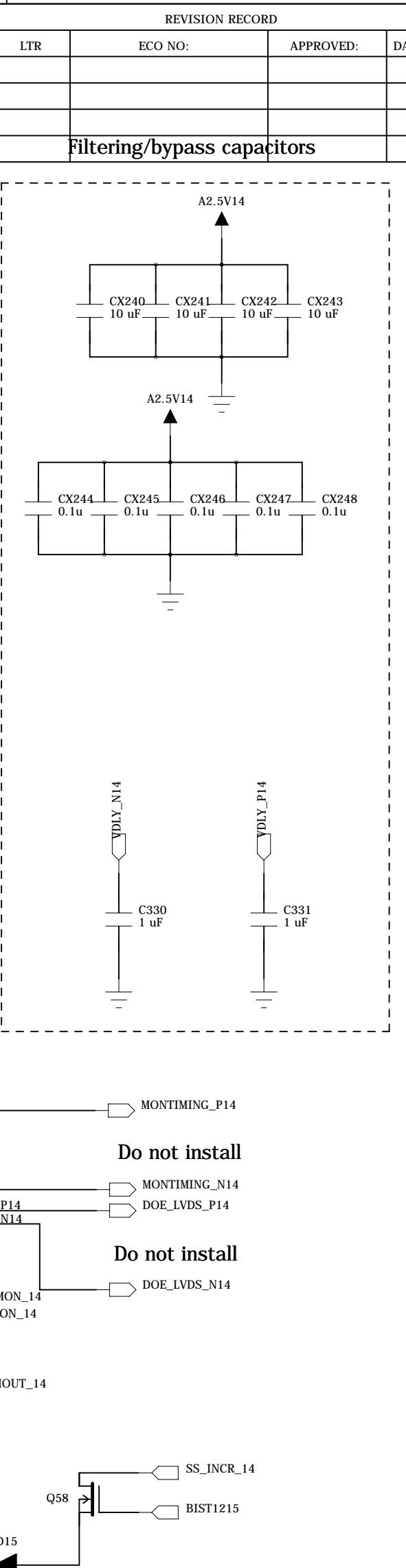
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COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL14		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>	SHEET:	48 74



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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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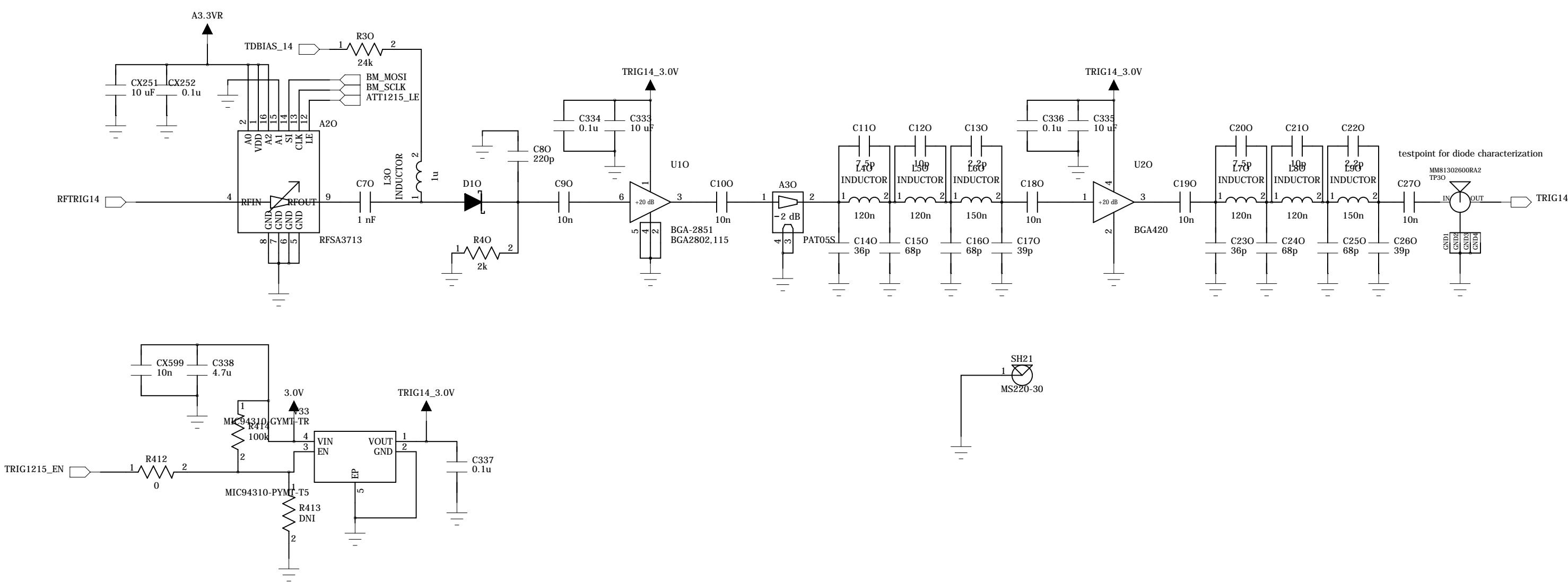
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COMPANY:

Ohio State University

SHEET:

RF_DIOD14

DRAWN:	PSA	DATED: 2/27/23	CODE: 4	SIZE: C	DESIGN: RADIANT	REV: 3
CHECKED:	PSA	DATED: 3/3/23				
QUALITY CONTROL:	PSA	DATED: 3/15/23				
RELEASED:	N/A	DATED: N/A				

SCALE: <Scale> SHEET: 49 74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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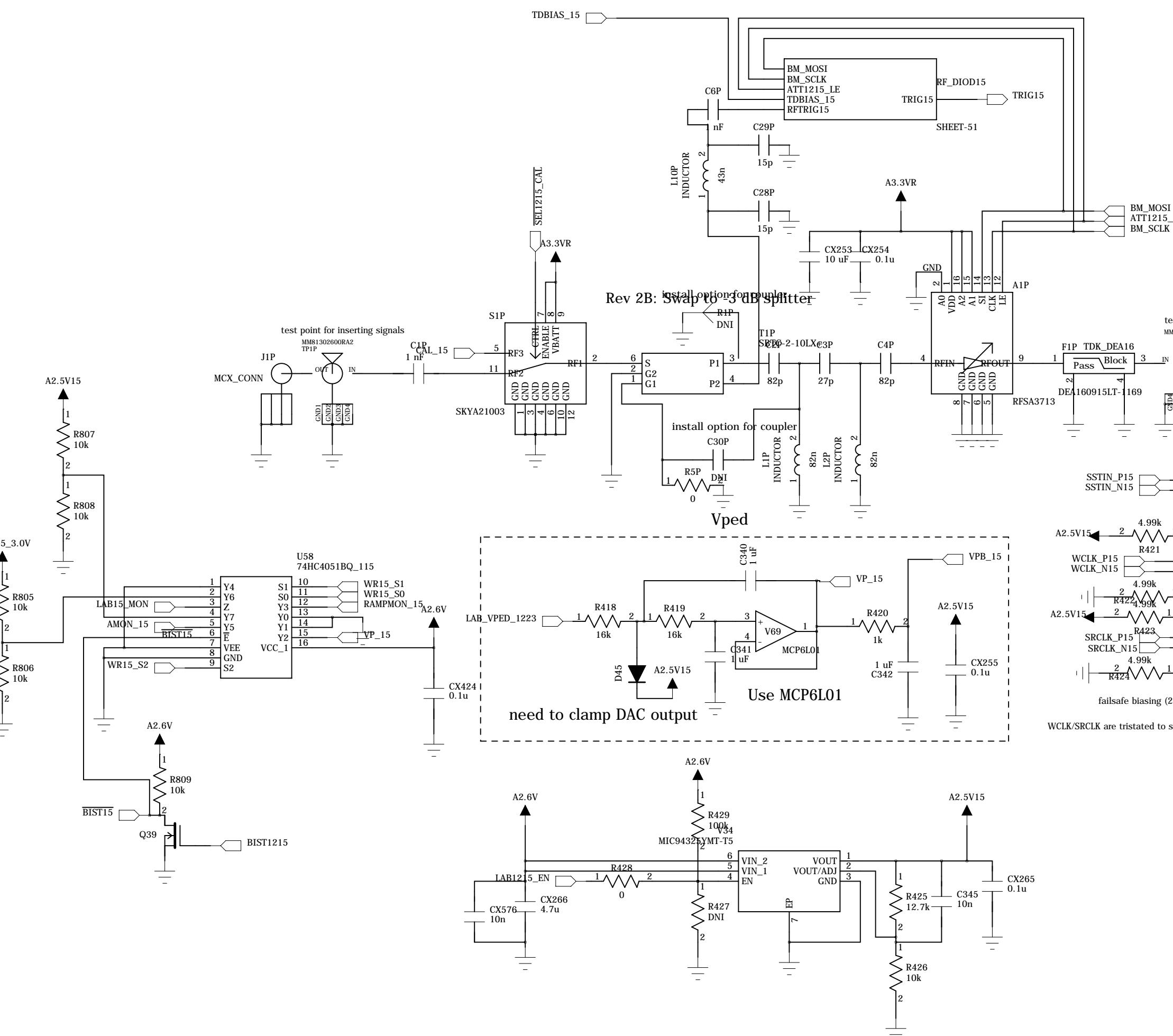
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REVISION RECORD

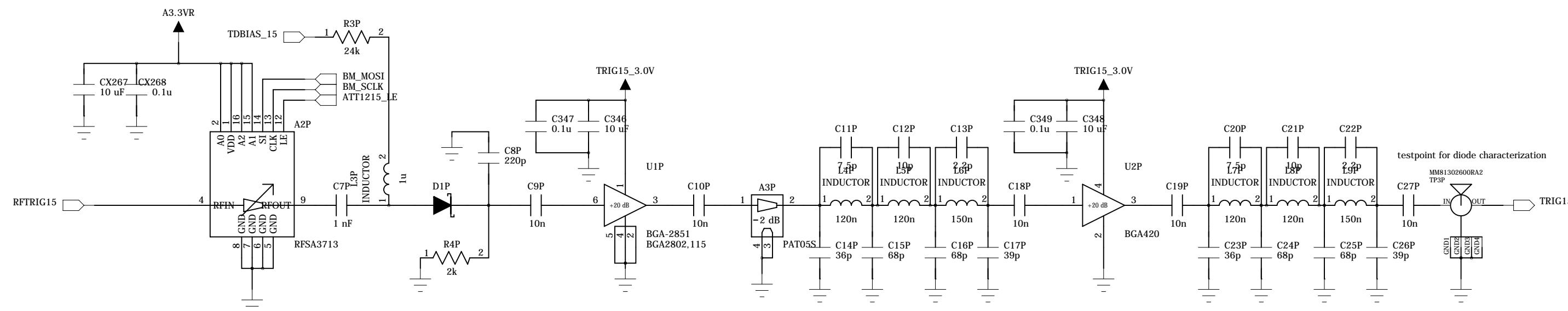
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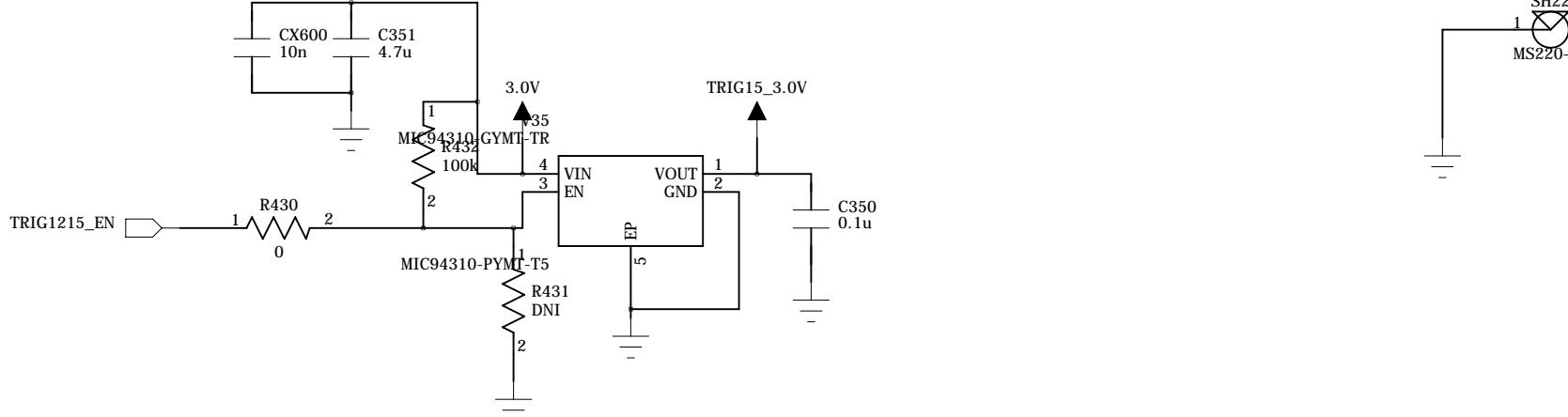
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COMPANY:	Ohio State University		
SHEET:	RF_DIOD15		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		HEET: 51 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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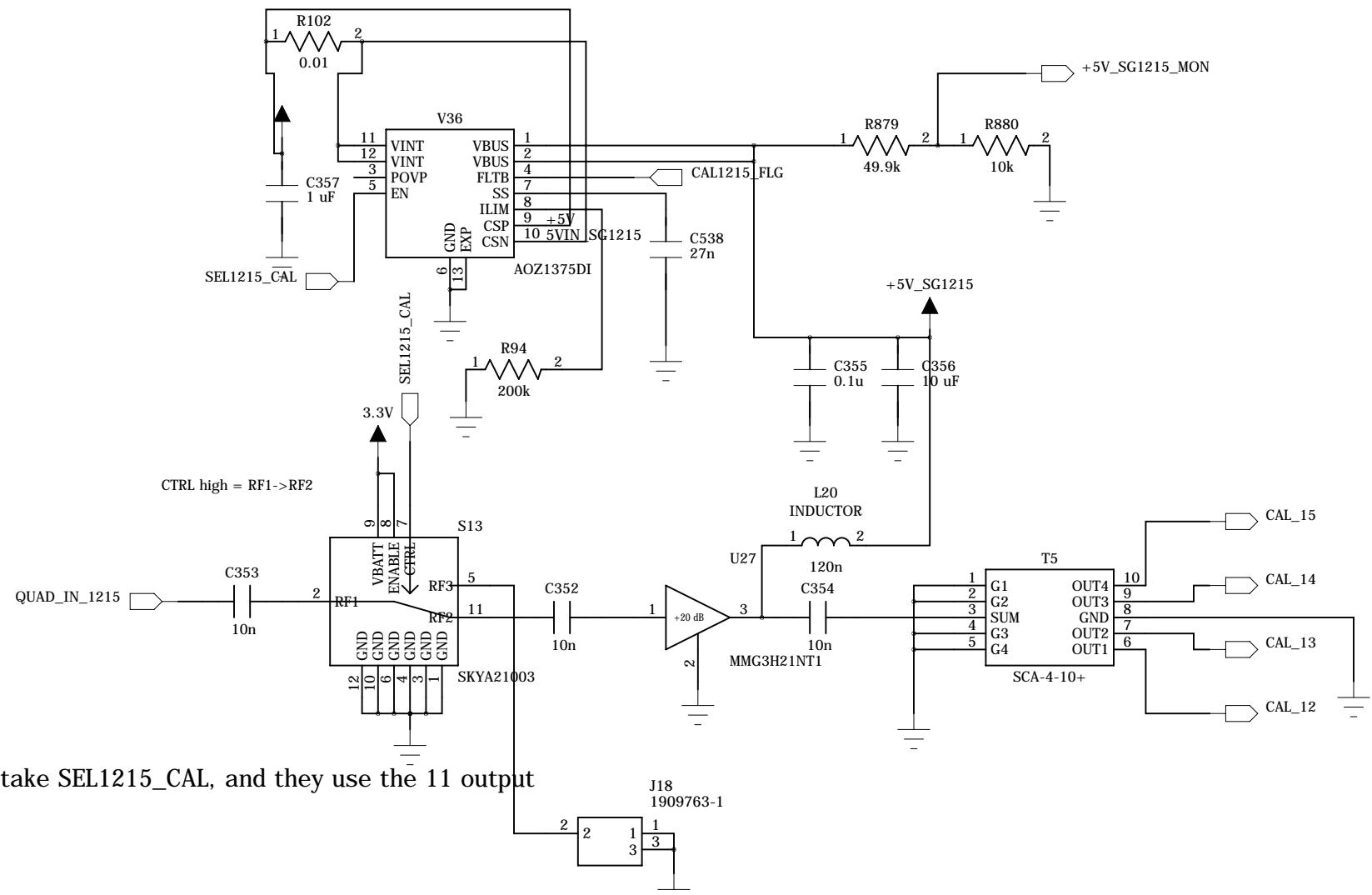
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COMPANY:	Ohio State University		
SHEET:	QUAD_SIG_GENERATOR_3		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	SIZE:	DESIGN:	REV:
4	C	RADIANT	3
SCALE: <Scale>		SCALE: 52	74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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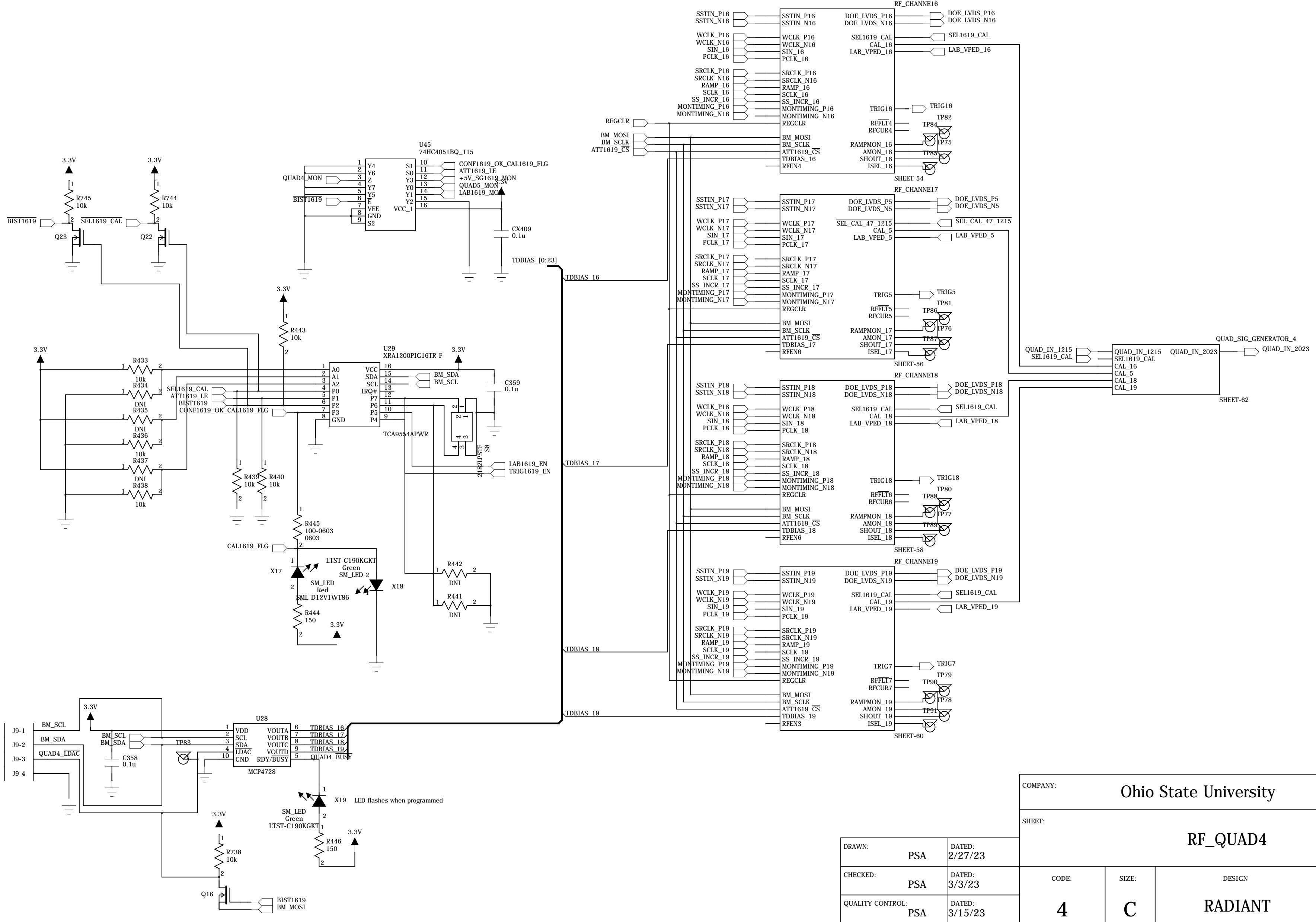
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:
	Filtering/bypass capacitors		

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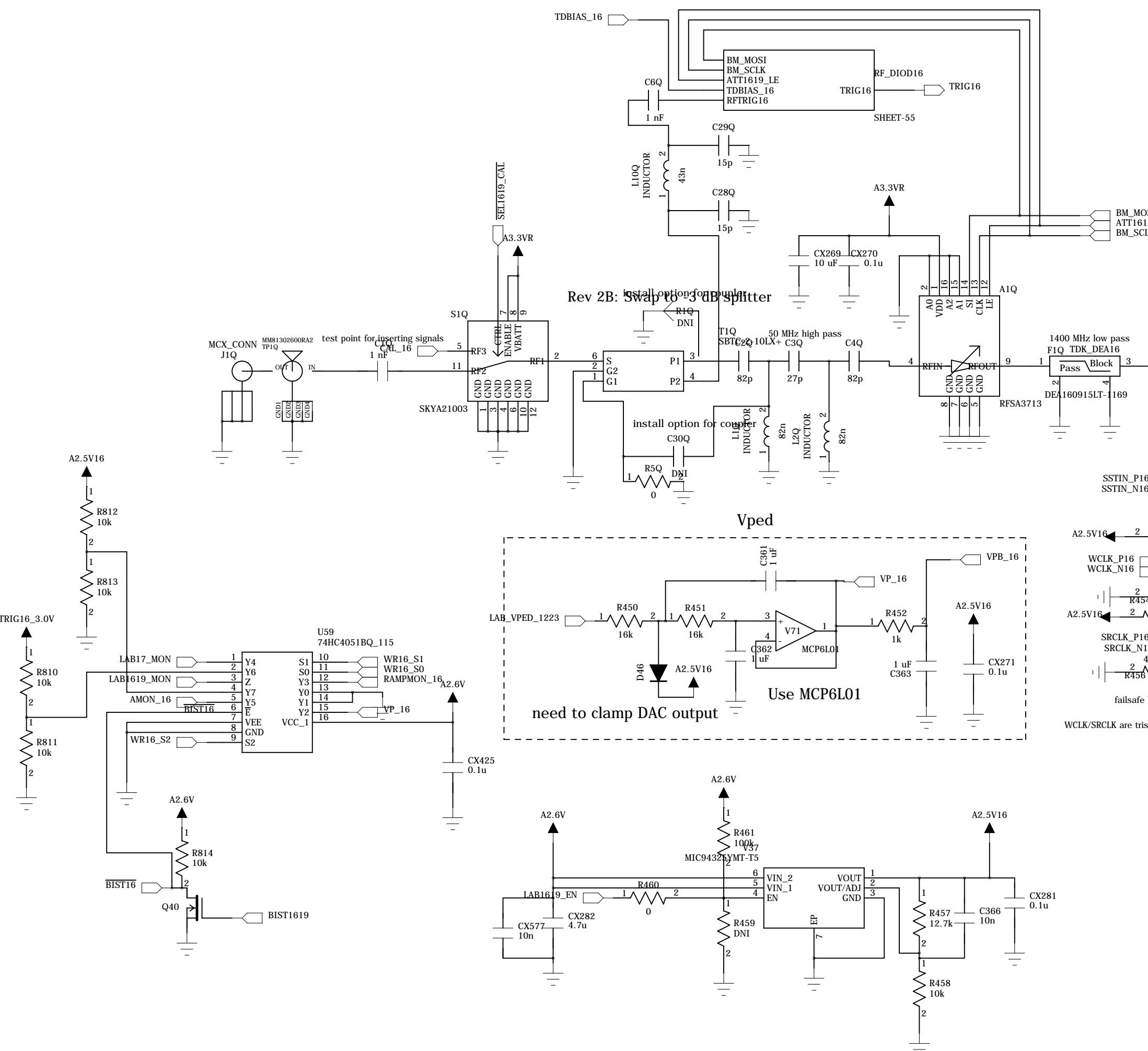
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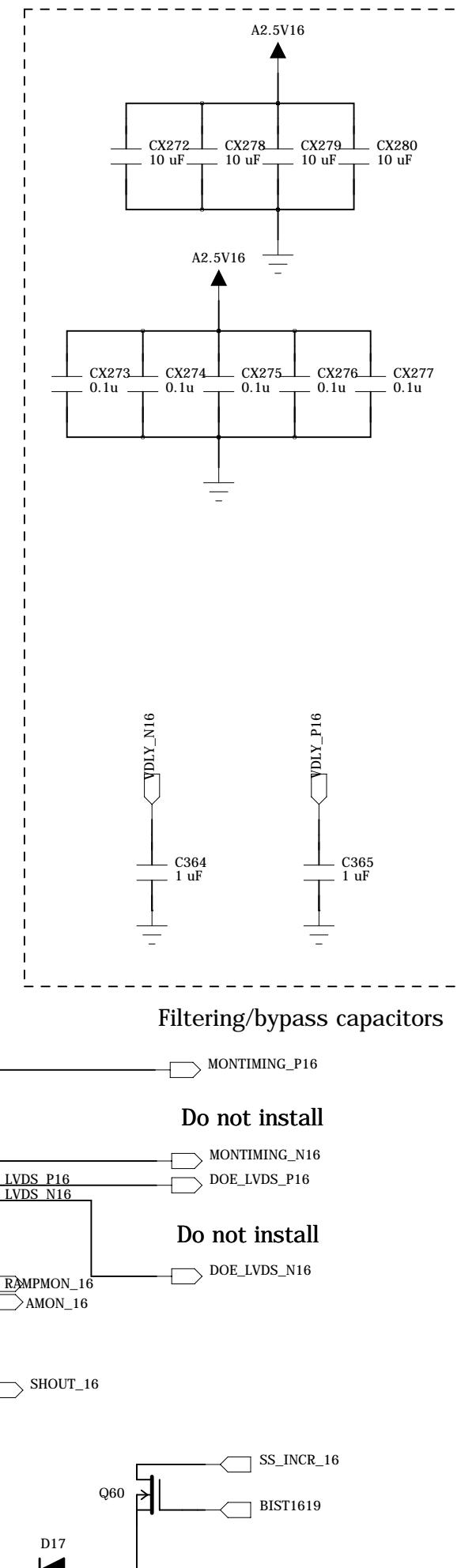
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COMPANY:	Ohio State University		
SHEET:	RF_CHANNEL16		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
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SCALE:	<Scale>	SHEET:	54 74



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REVISION RECORD

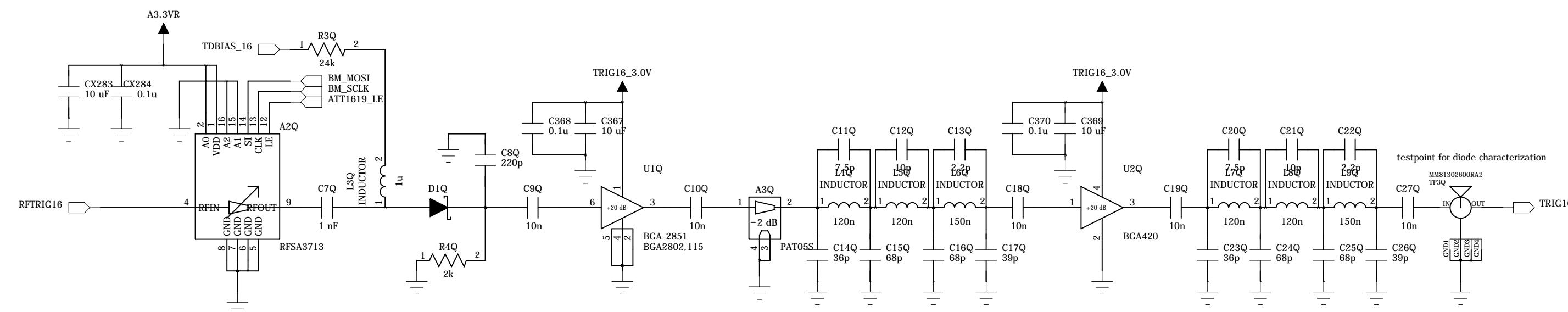
LTR	ECO NO:	APPROVED:	DATE:

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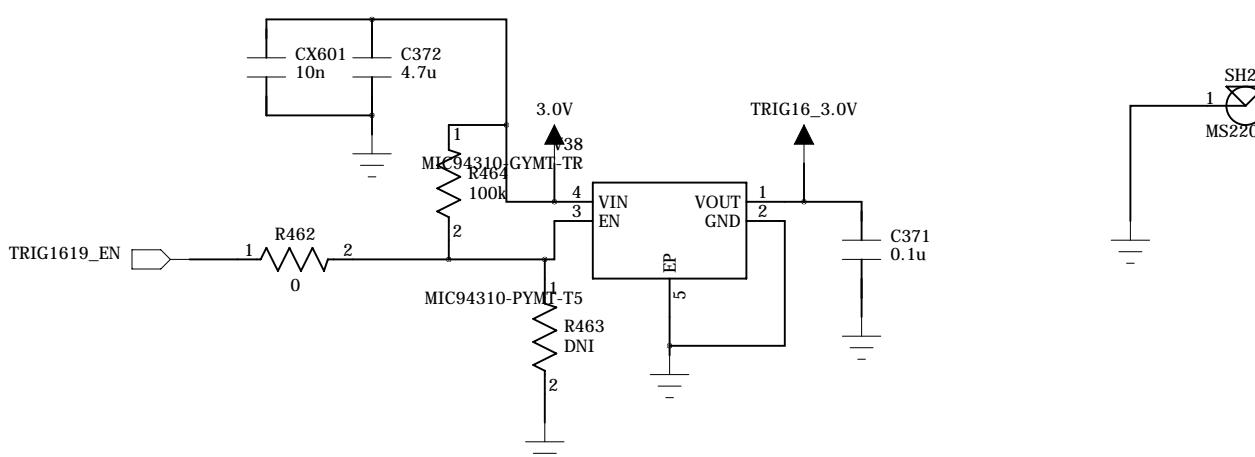
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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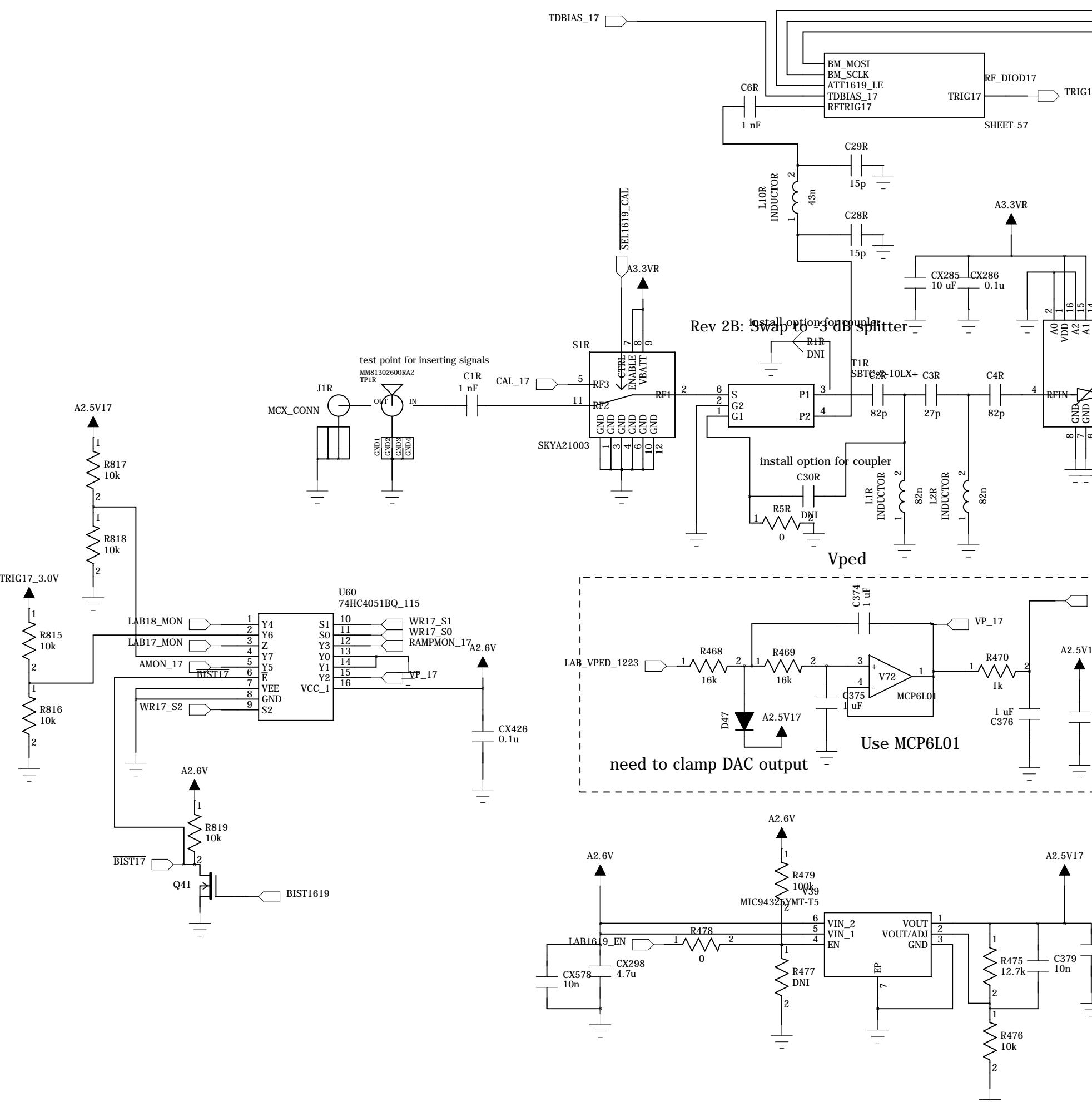
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DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

Ohio State University

RF_CHANNEL17

CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3

SCALE: <Scale> SHEET: 56 74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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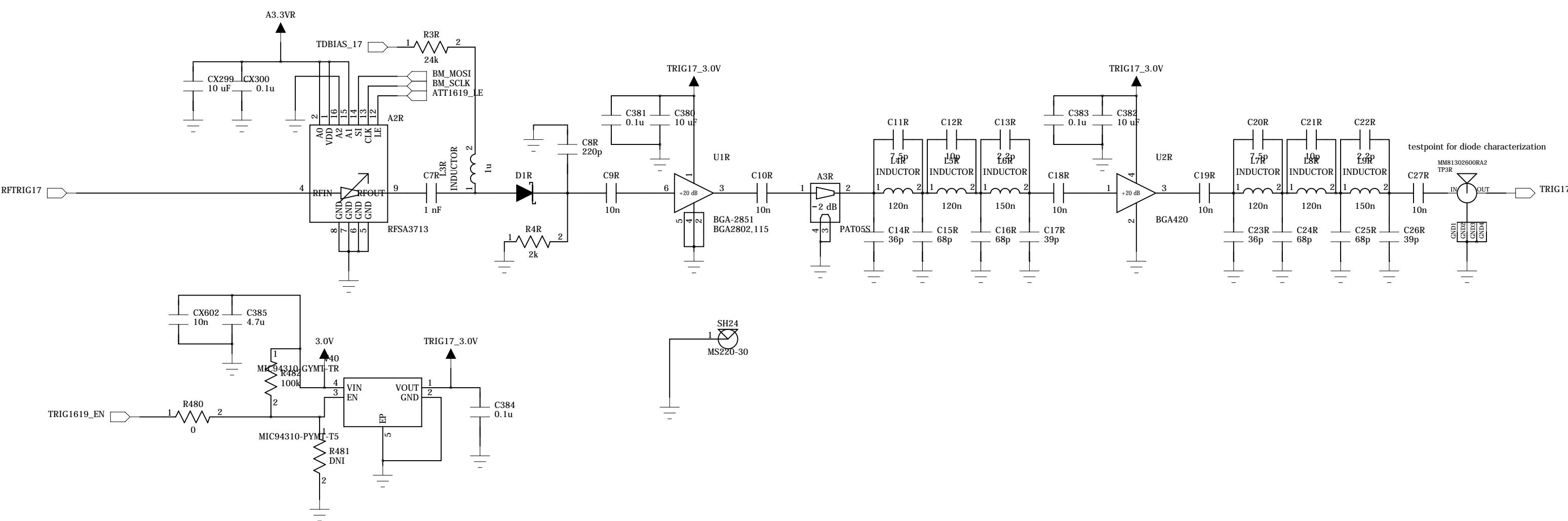
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COMPANY:		Ohio State University	
SHEET:		RF_DIOD17	
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE: <Scale>		CODE: 4	SIZE: C
DESIGN: RADIANT		REV: 3	SHEET: 57 74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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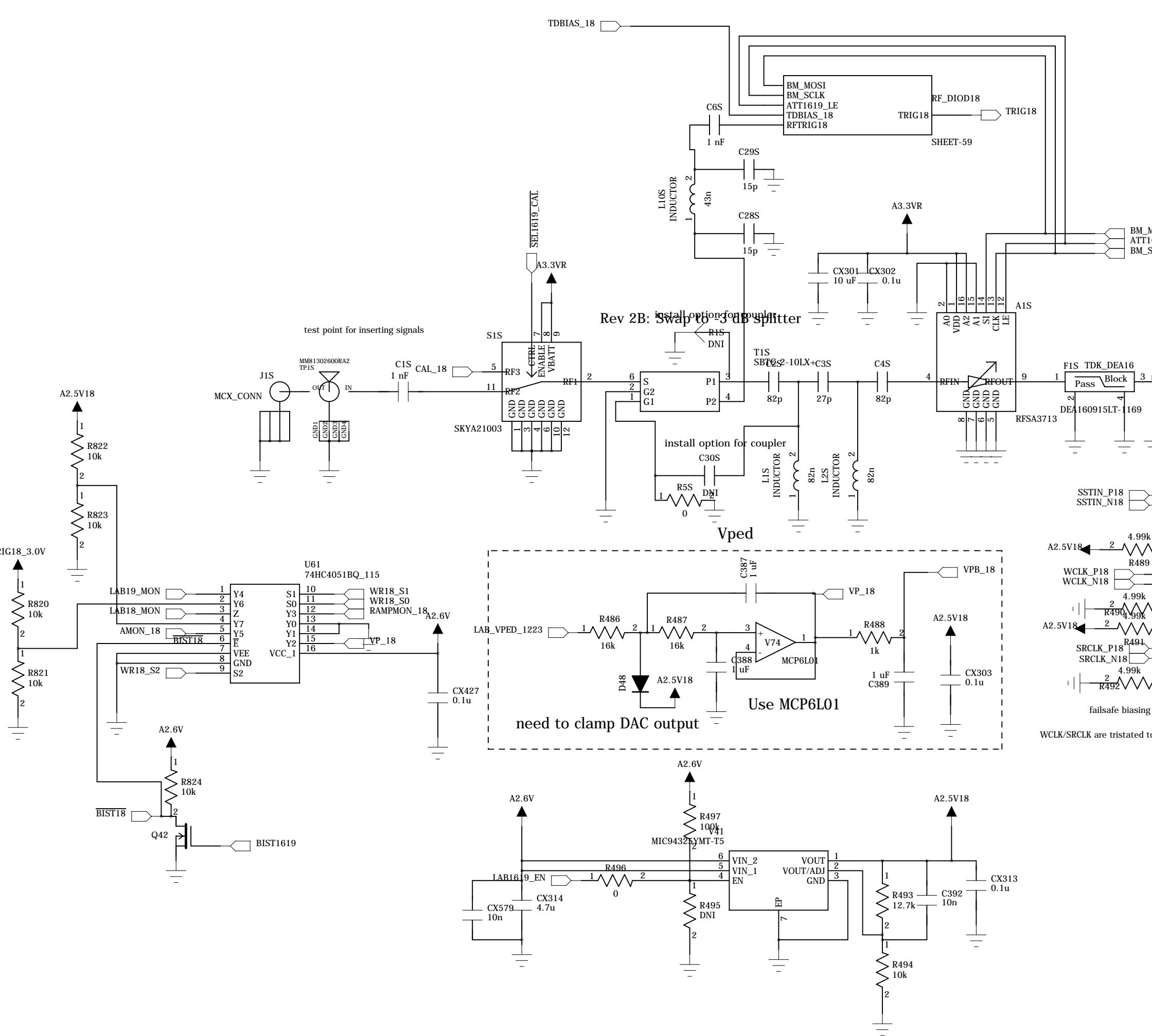
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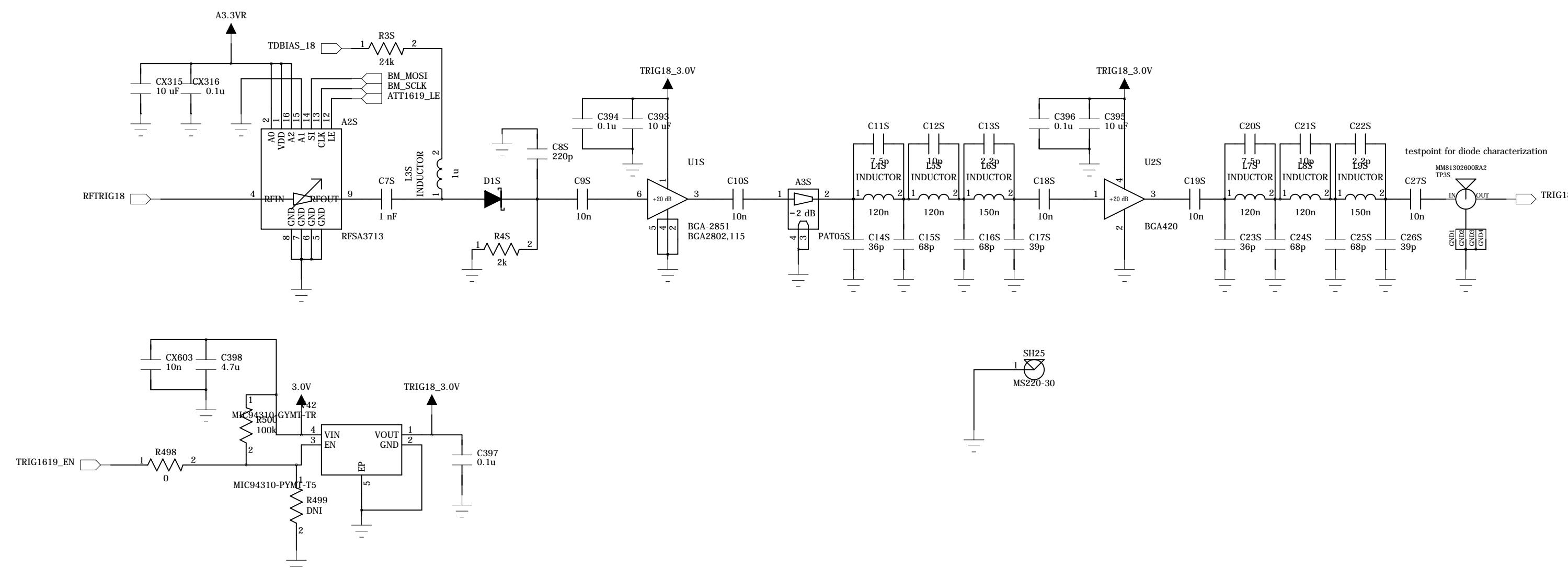
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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY

Ohio State University

SHEET:

RF DIOD18

DRAWN:	PSA	DATED: 2/27/23	RF_DIOD18			
CHECKED:	PSA	DATED: 3/3/23	CODE: 4	SIZE: C	DESIGN RADIANT	REV: 3
QUALITY CONTROL:	PSA	DATED: 3/15/23				
RELEASED:	N/A	DATED: N/A	SCALE: <Scale>			SHEET: 59 74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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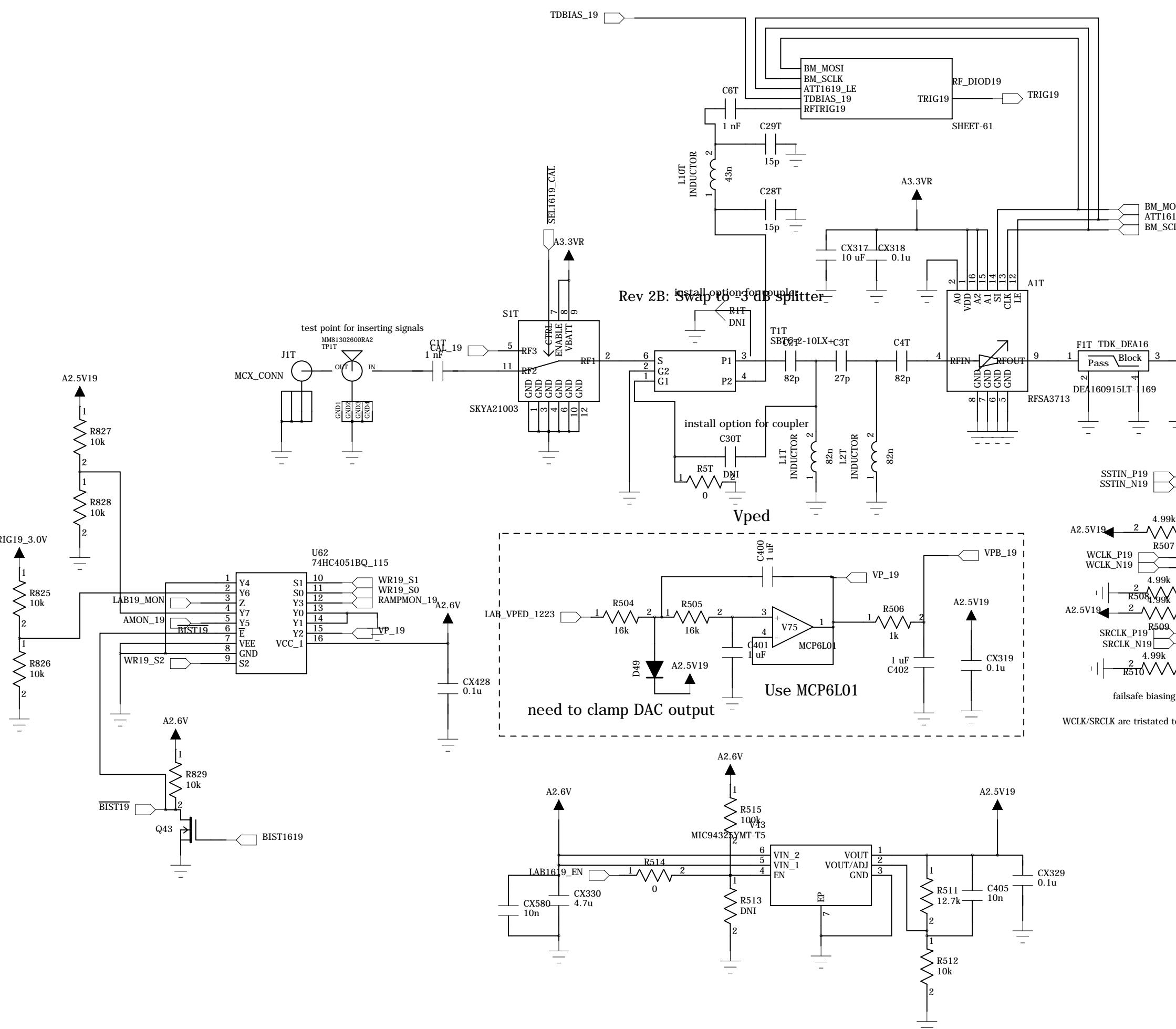
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DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

COMPANY: Ohio State University
SHEET: RF_CHANNEL19
CODE: 4 SIZE: C DESIGN: RADIANT REV: 3
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REVISION RECORD

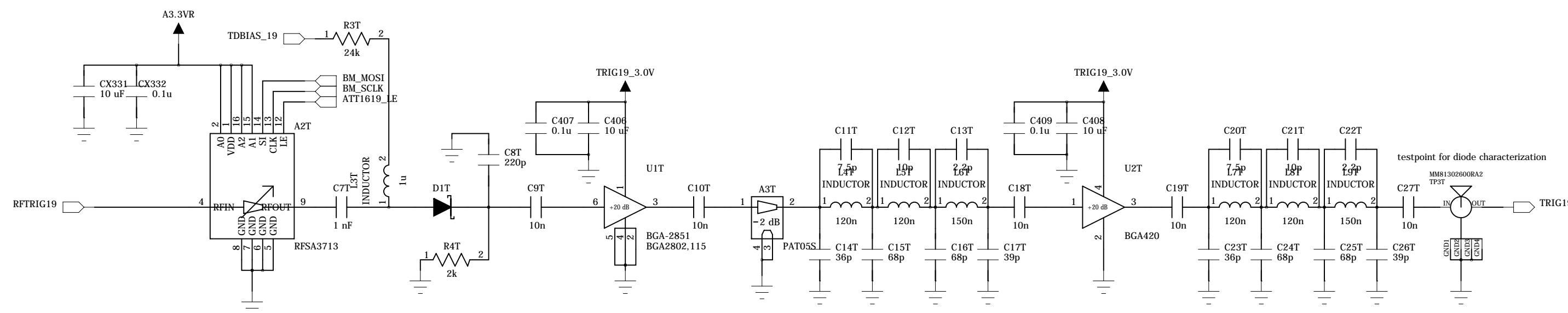
LTR	ECO NO:	APPROVED:	DATE:

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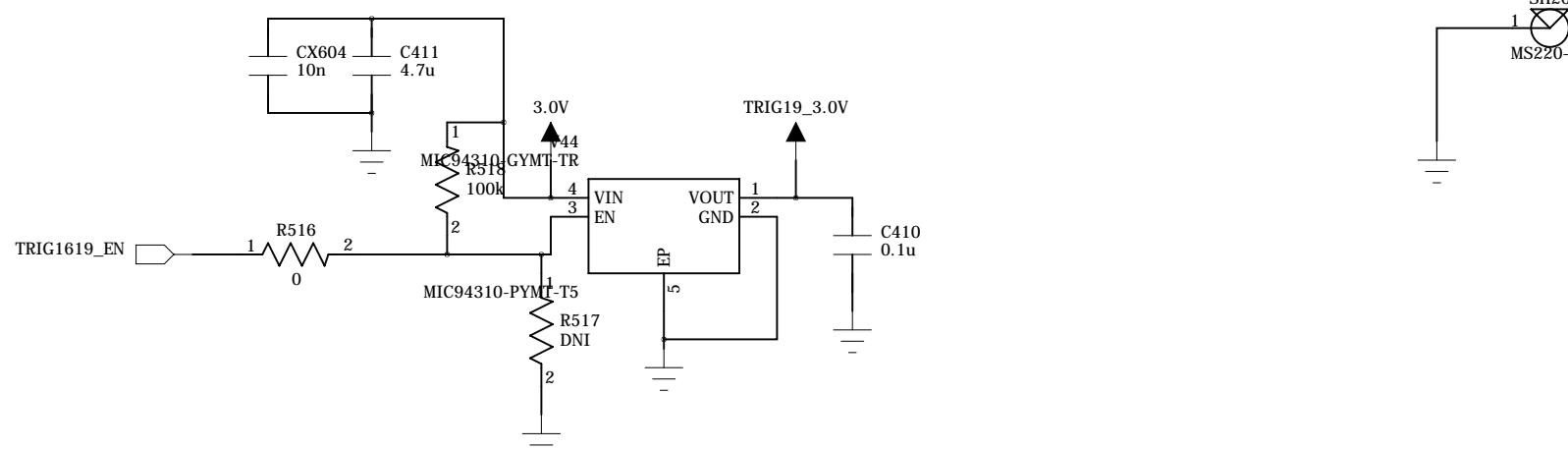
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COMPANY:		Ohio State University	
SHEET:		RF_DIOD19	
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE: <Scale>		SHEET: 61 74	
CODE:	SIZE:	DESIGN	
4	C	RADIANT	
REV:	3		

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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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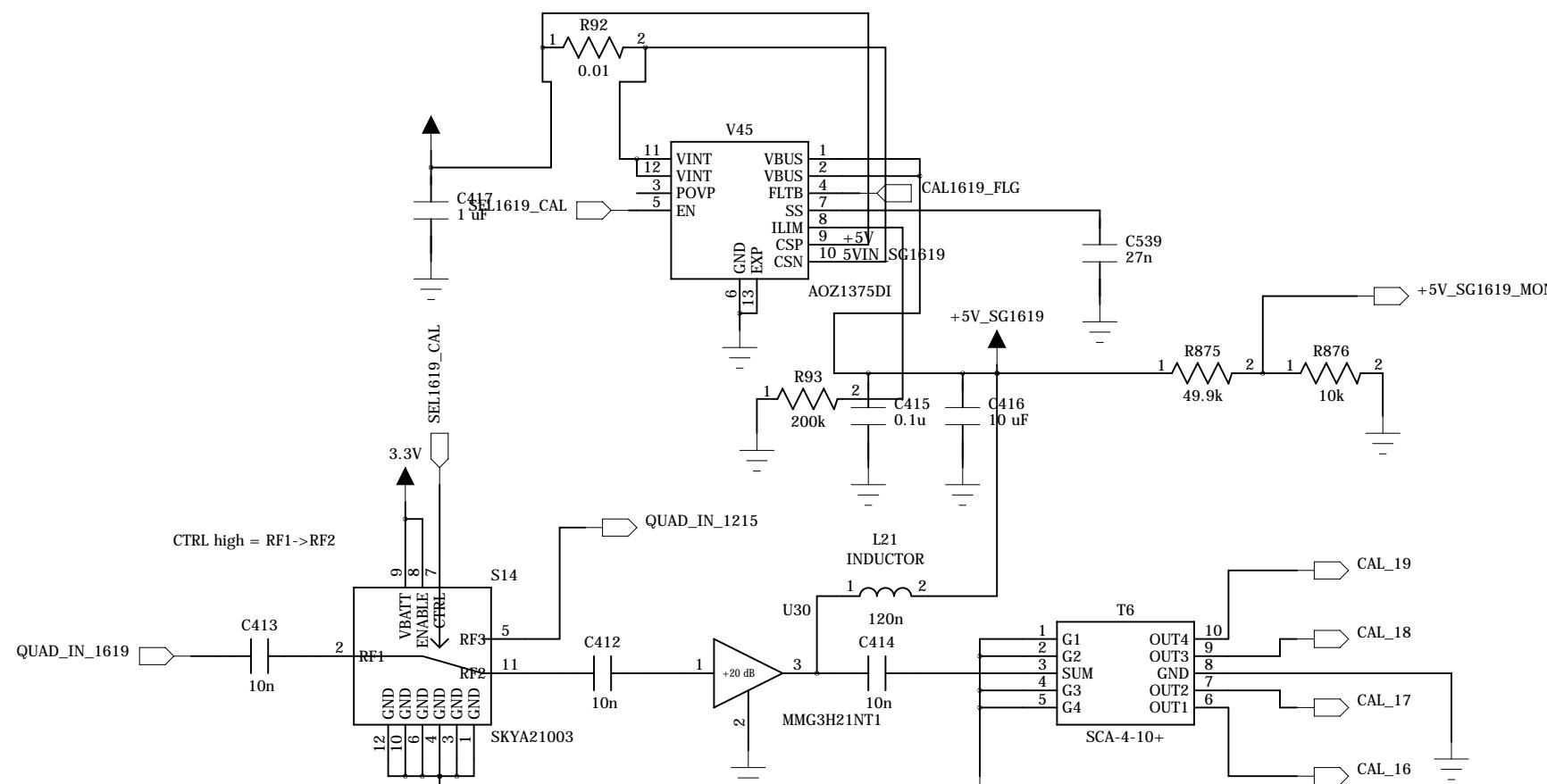
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COMPANY:	Ohio State University		
SHEET:	QUAD_SIG_GENERATOR_4		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	SIZE:	DESIGN:	REV:
4	C	RADIANT	3
SCALE: <Scale>	62	74	

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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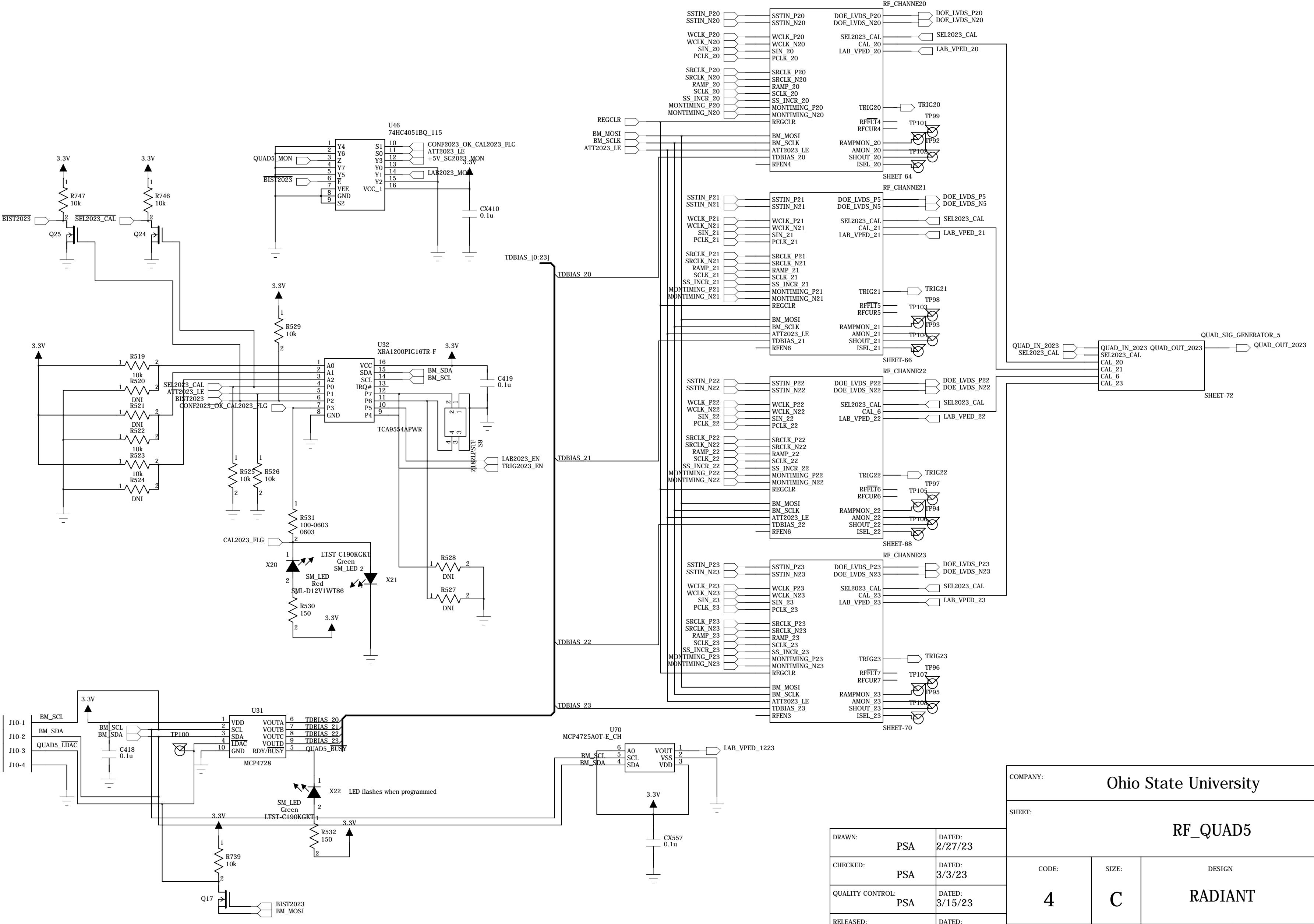
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COMPANY:	Ohio State University		
SHEET:	RF_QUAD5		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
SCALE:	<Scale>		
CODE:	C	SIZE:	DESIGN
REV:	3	RADIANT	4
Sheet:	63	74	

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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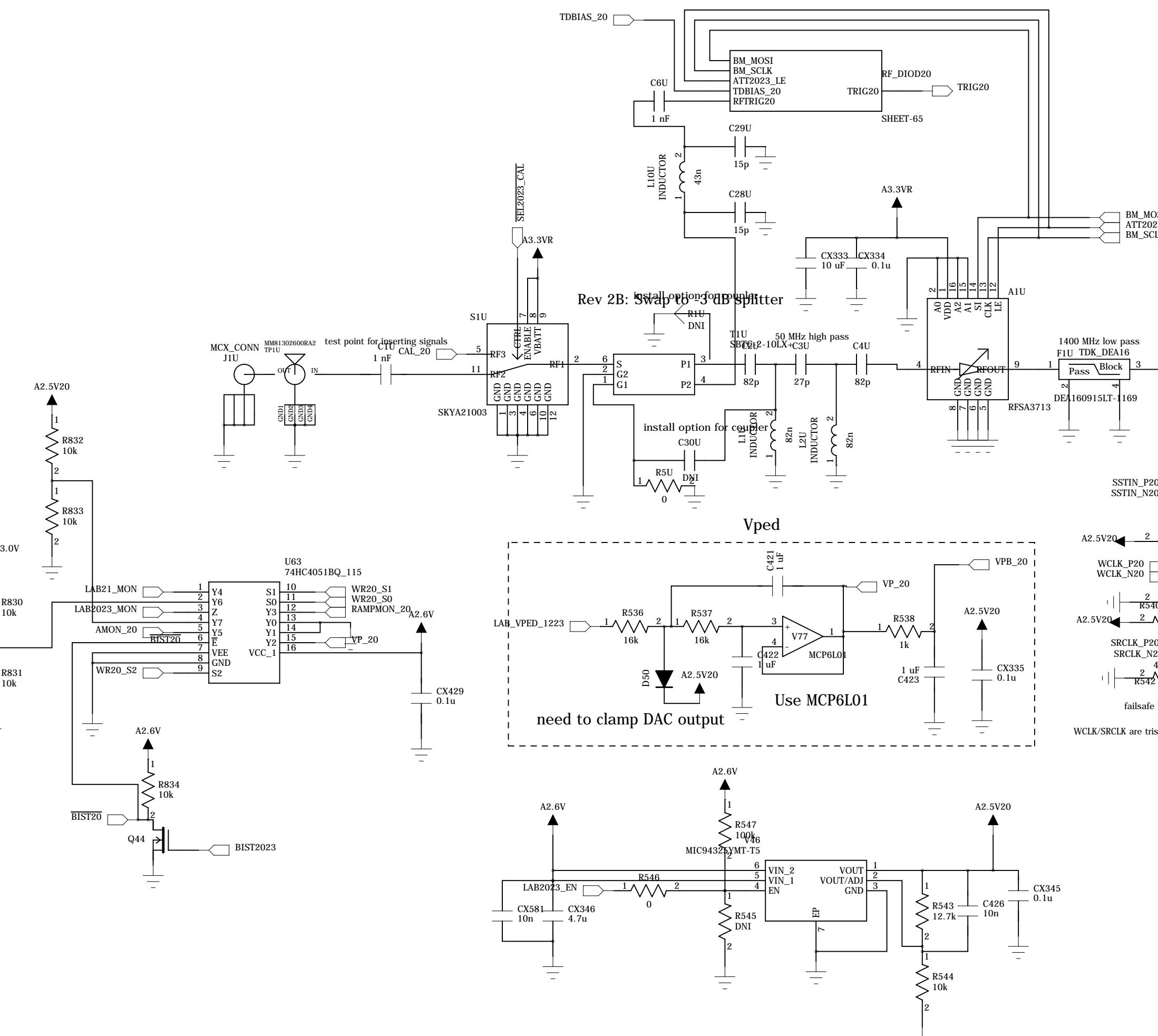
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DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

Ohio State University

RF_CHANNEL20

CODE:	SIZE:	DESIGN	REV:
4	C	RADIANT	3
SCALE: <Scale>	SHEET: 64	74	

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REVISION RECORD

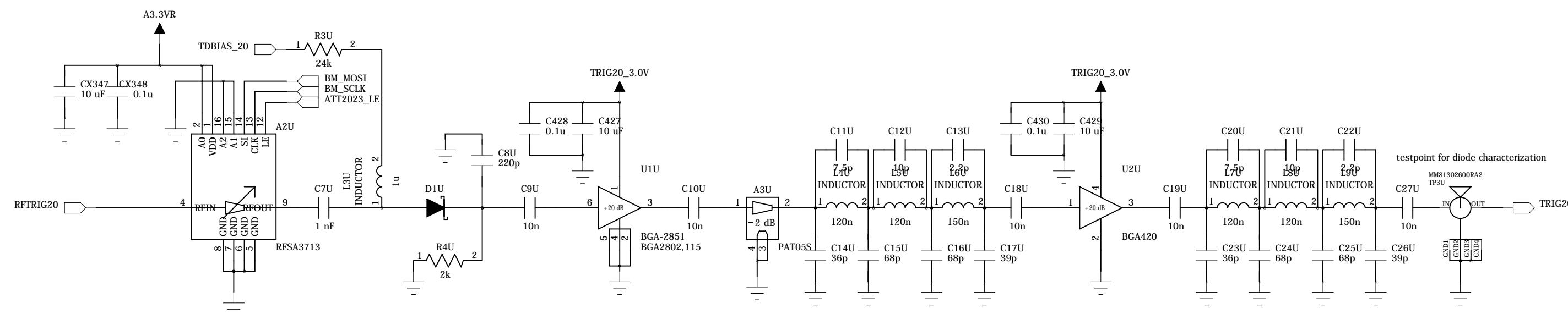
LTR	ECO NO:	APPROVED:	DATE:

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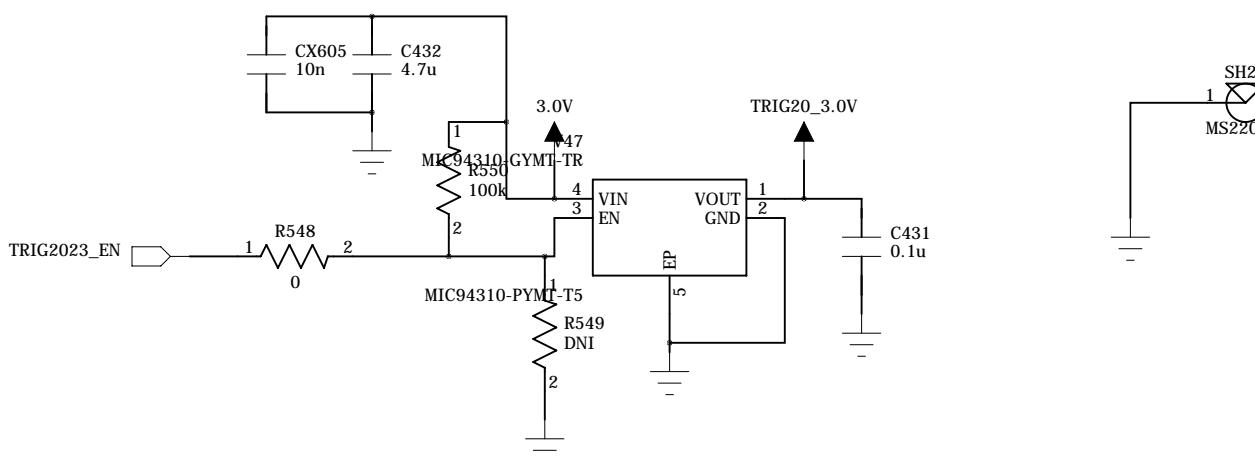
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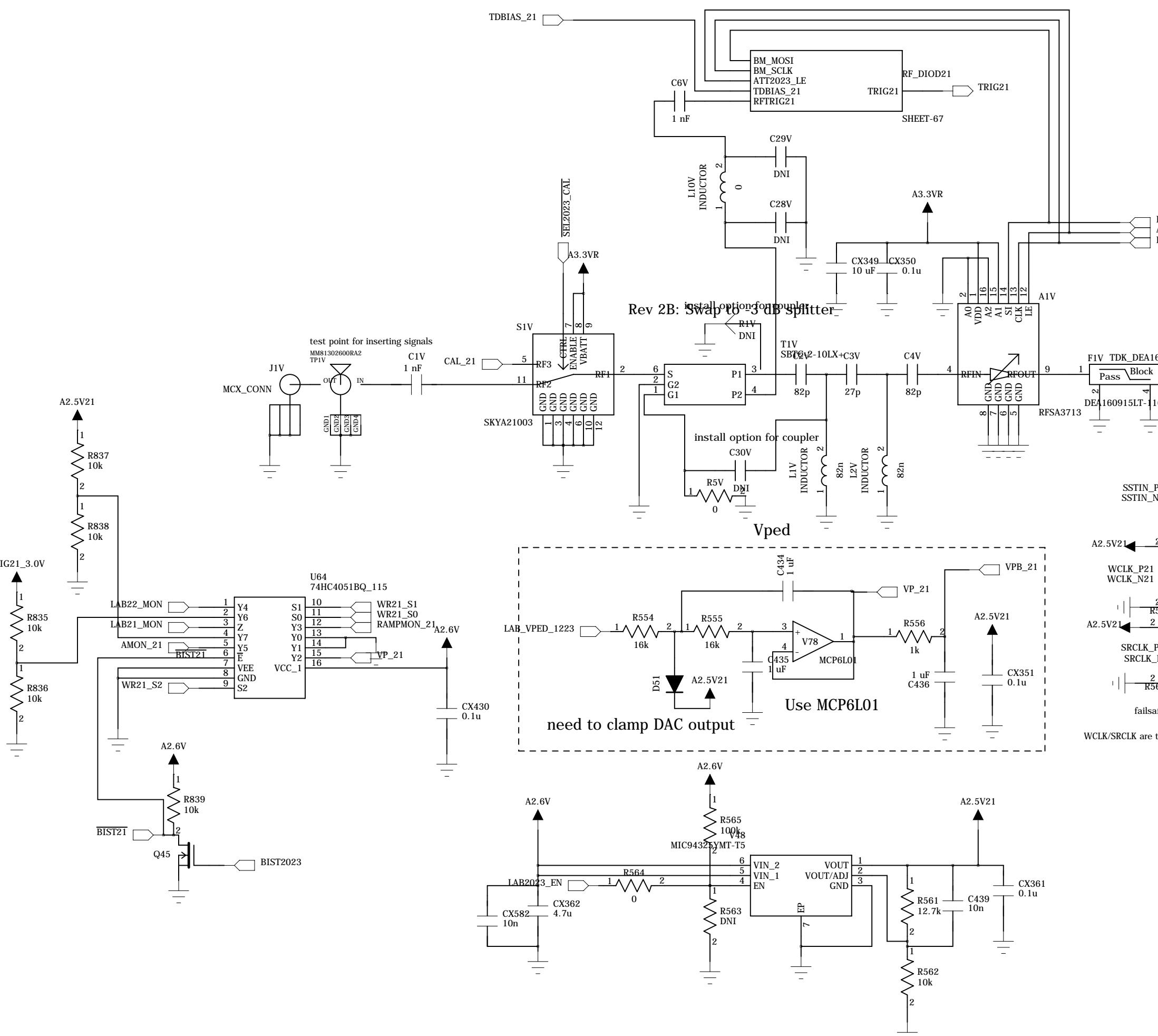
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COMPANY:	Ohio State University		
SHEET:	RF_DIOD20		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
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SCALE:	<Scale>		Sheet: 65 74

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

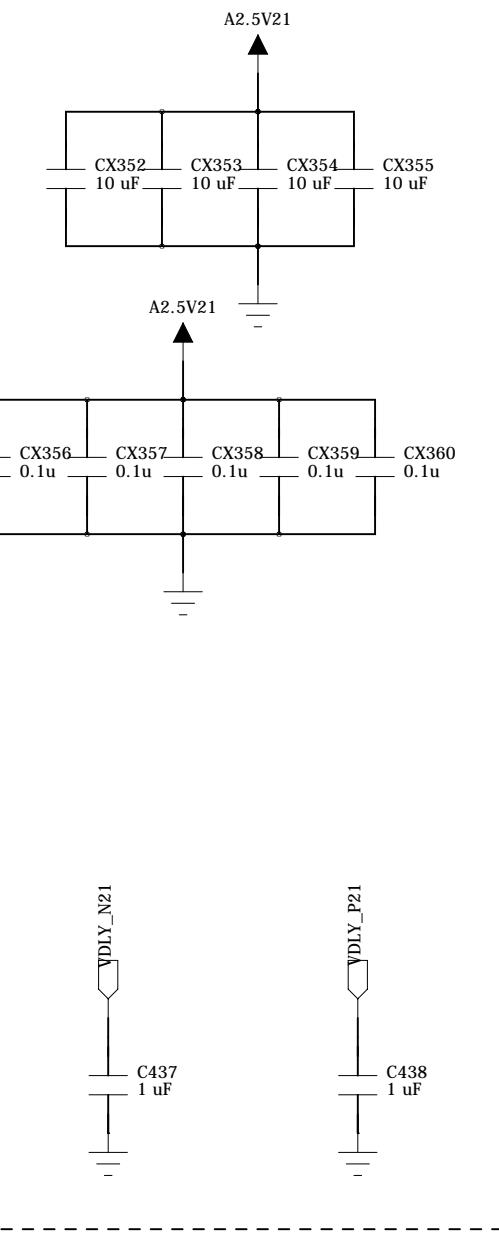
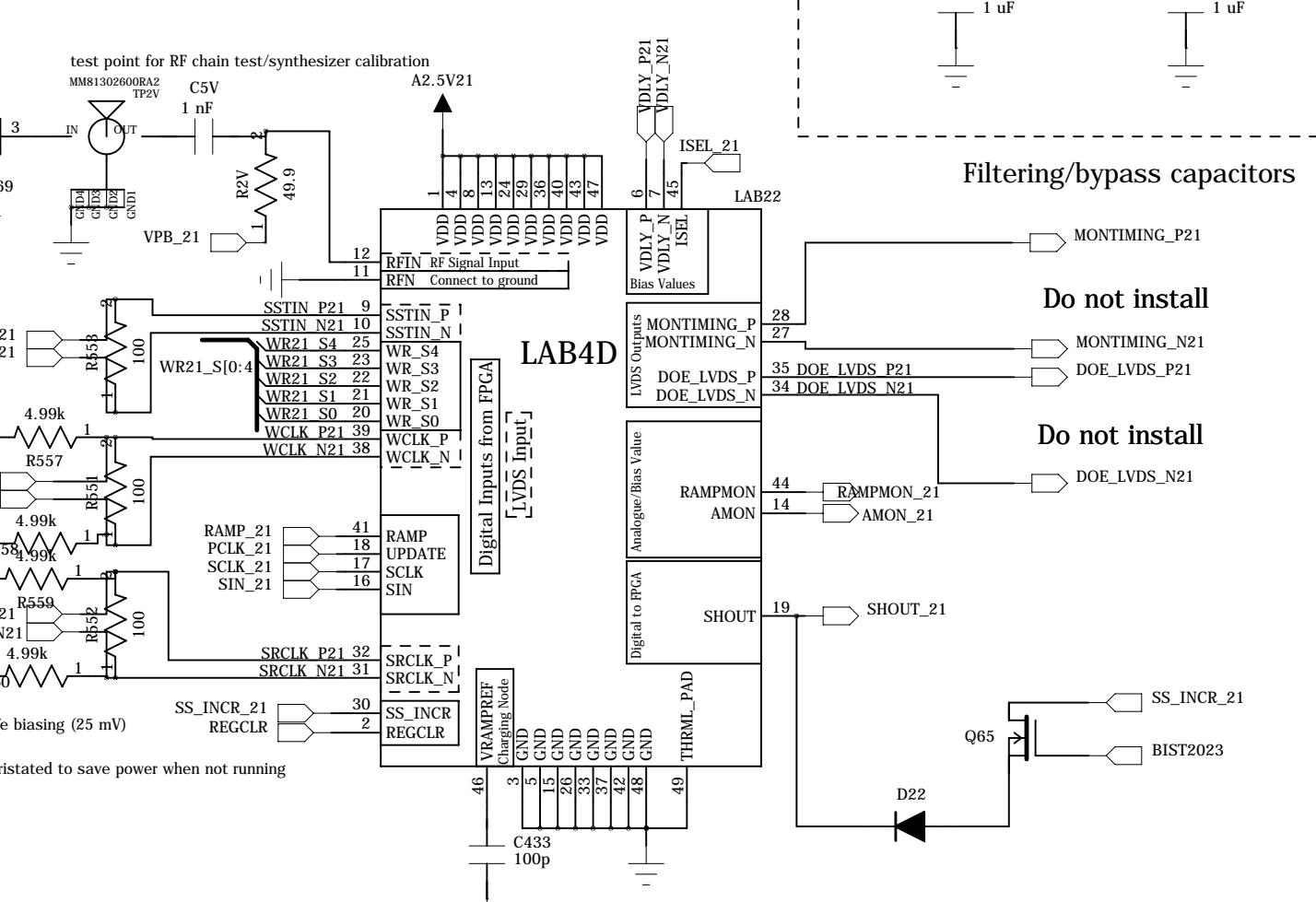
Filtering/bypass capacitors



DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A

Ohio State University

RF_CHANNEL21



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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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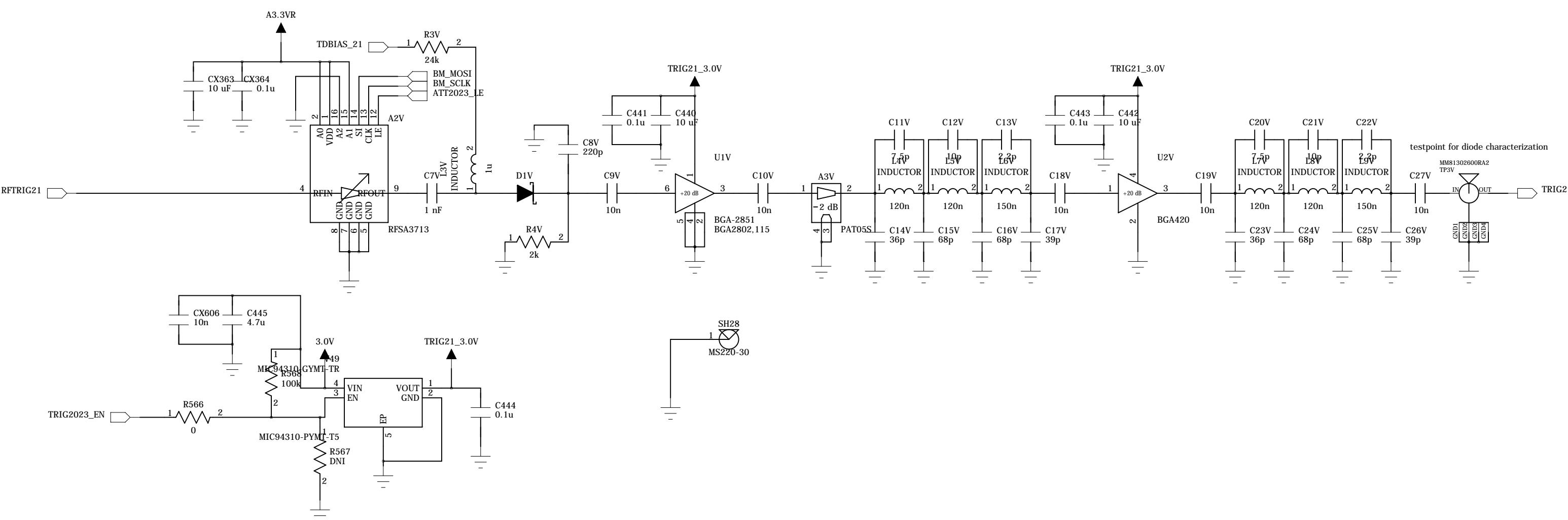
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COMPANY:		Ohio State University	
SHEET:		RF_DIOD21	
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CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
RELEASED:	N/A	DATED:	N/A
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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Filtering/bypass capacitors

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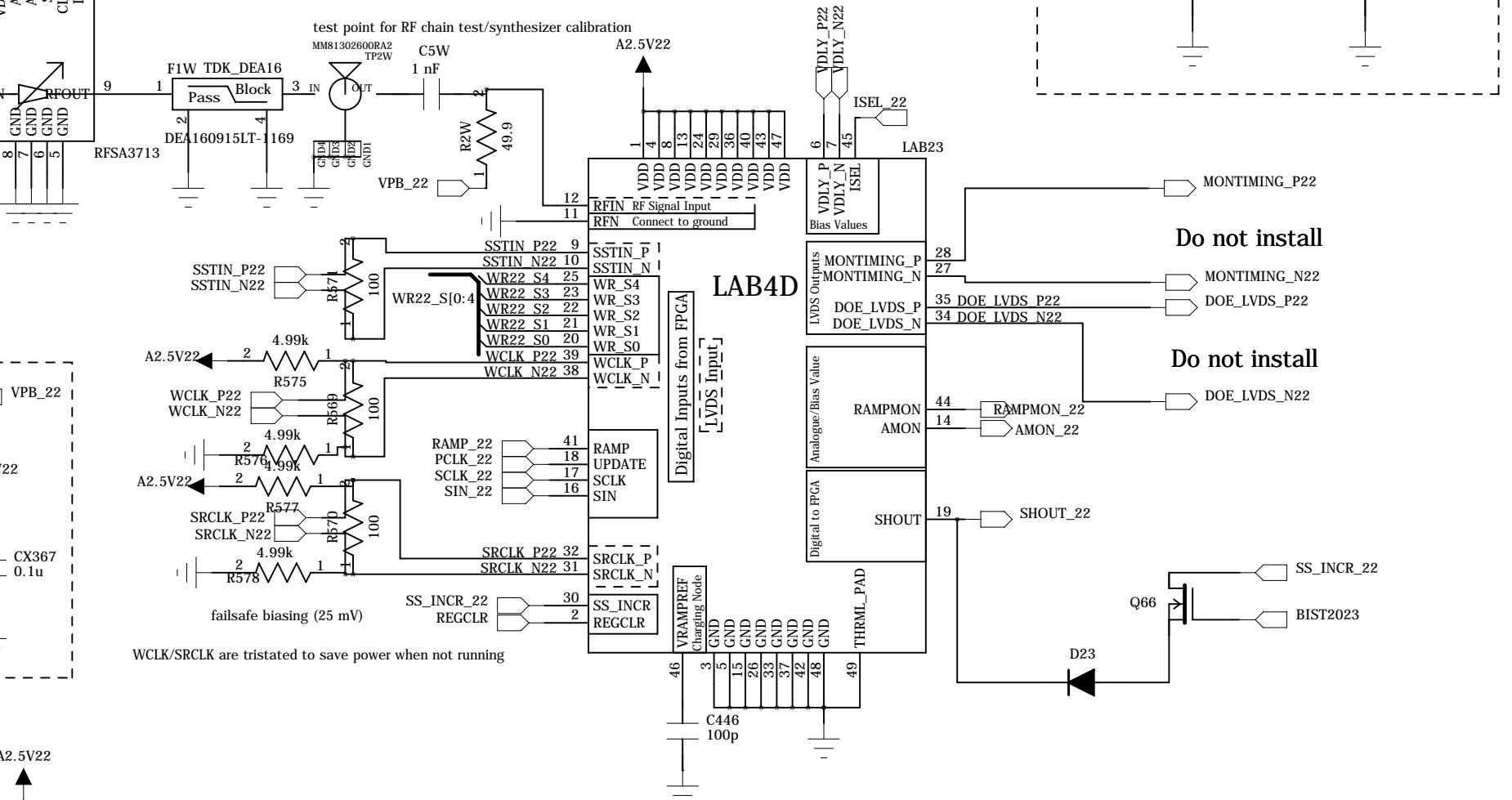
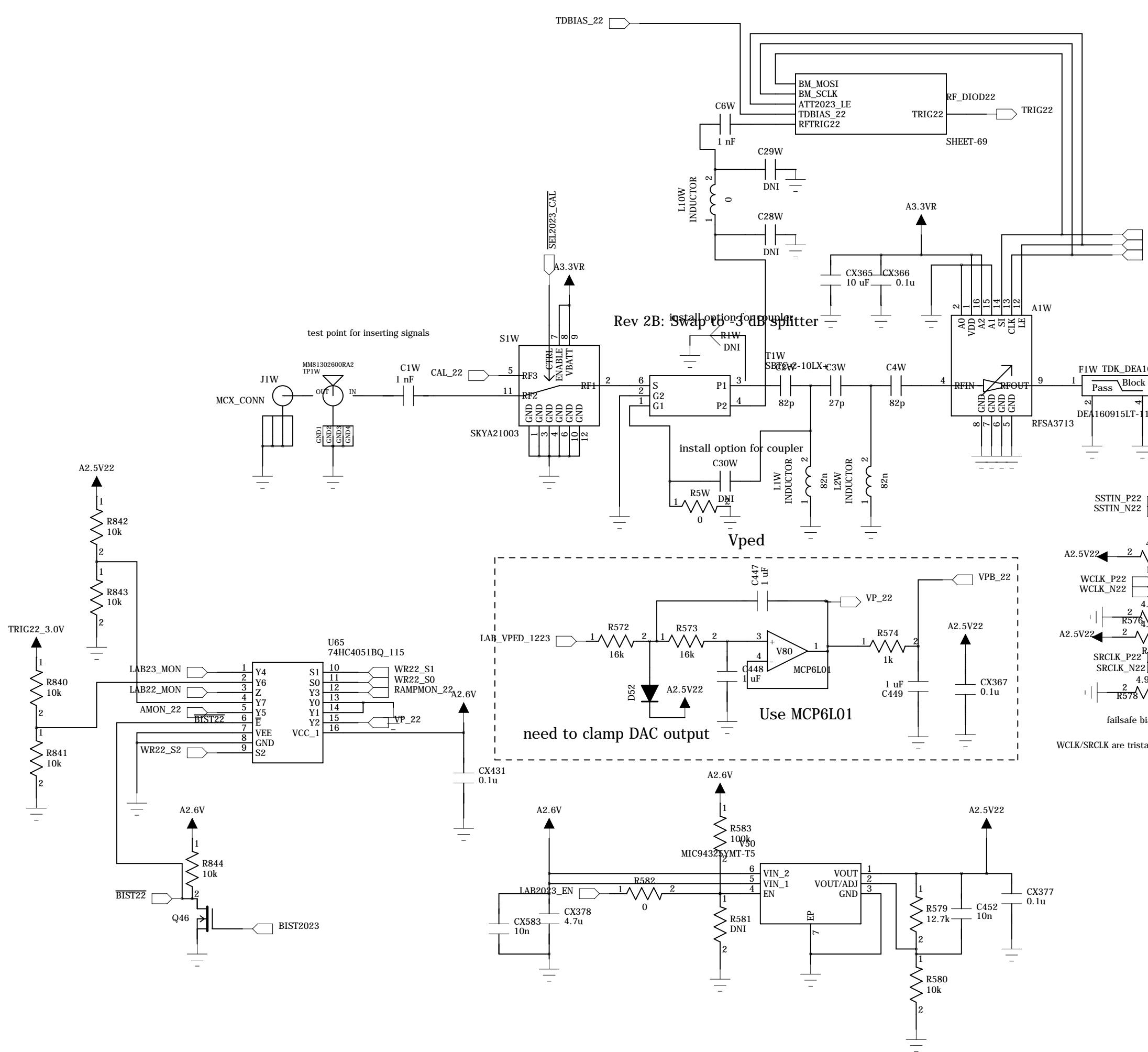
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COMPANY: Ohio State University

SHEET: RF_CHANNEL22

DRAWN:	PSA	DATED: 2/27/23	CODE: 4	SIZE: C	DESIGN: RADIANT	REV: 3
CHECKED:	PSA	DATED: 3/3/23				
QUALITY CONTROL:	PSA	DATED: 3/15/23				
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SCALE: <Scale> SHEET: 68 74

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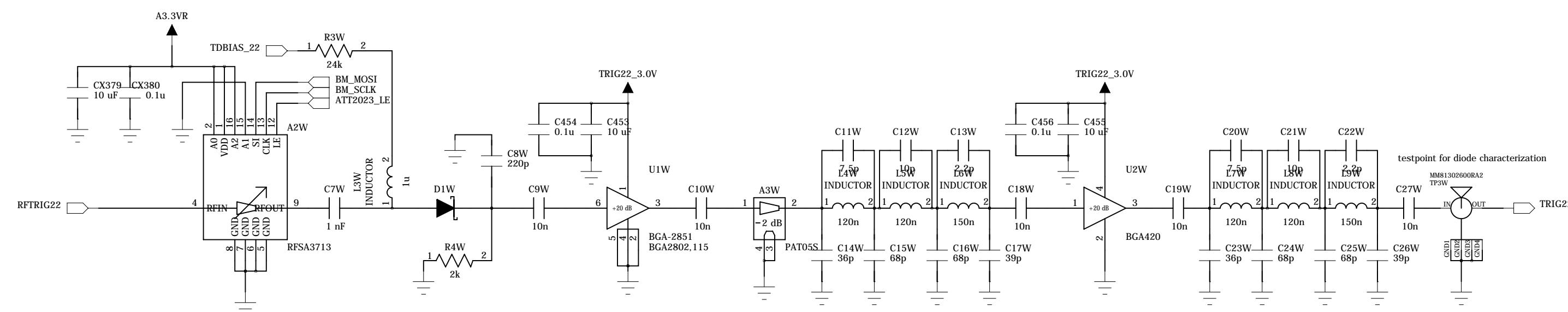
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

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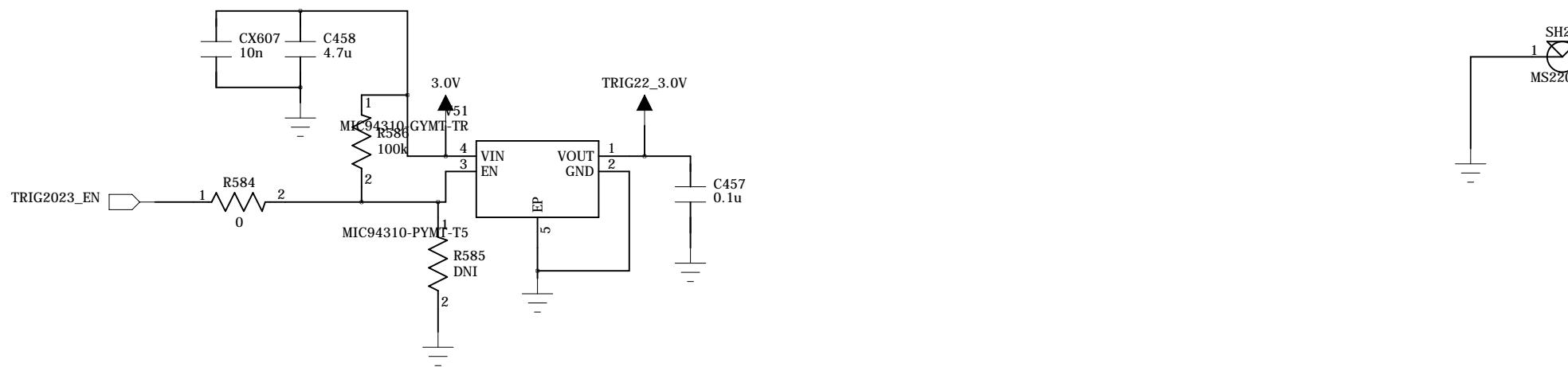
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COMPANY:	Ohio State University		
SHEET:	RF_DIOD22		
DRAWN:	PSA	DATED:	2/27/23
CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
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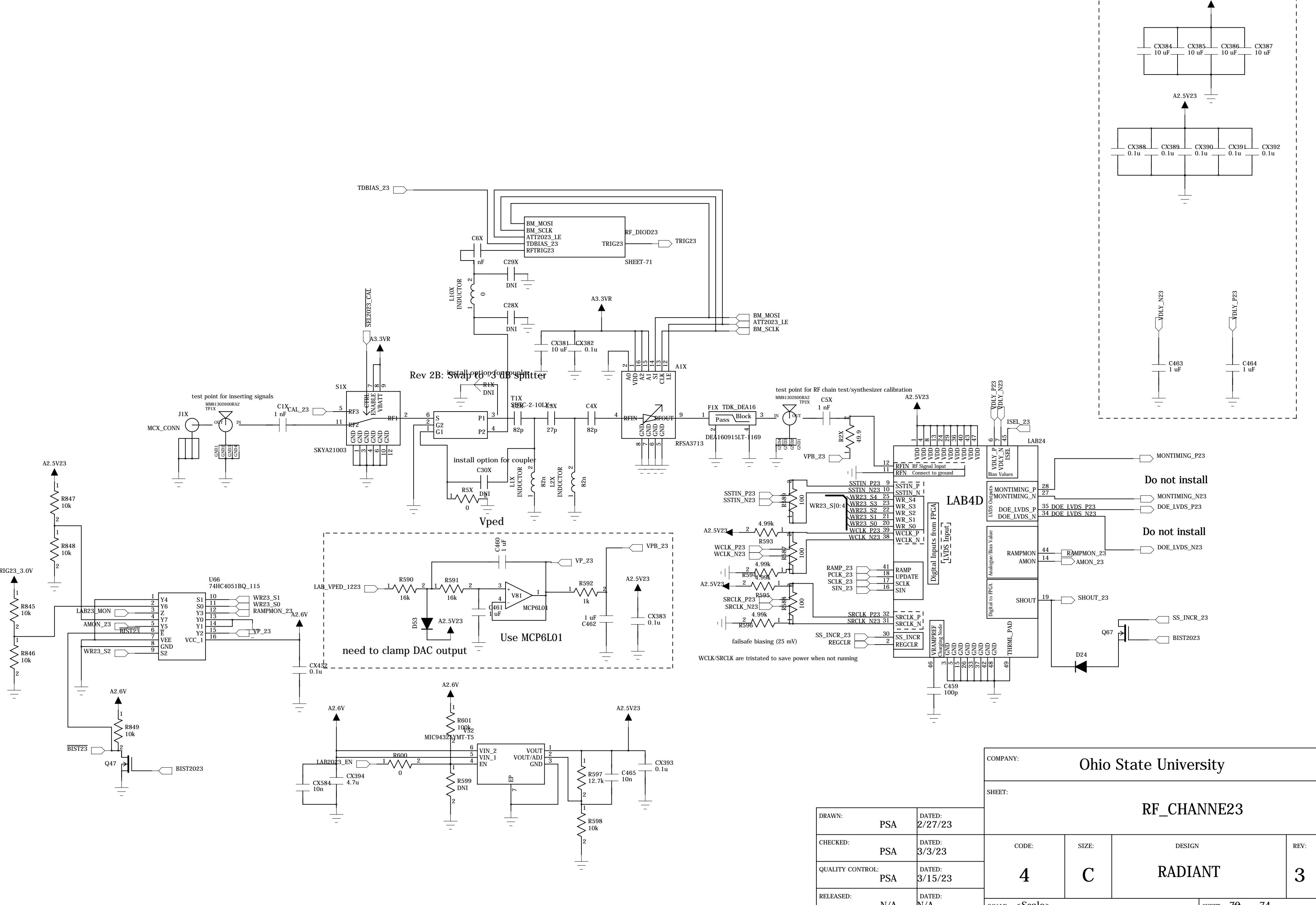
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REVISION RECORD			
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	Filtering/bypass capacitors		



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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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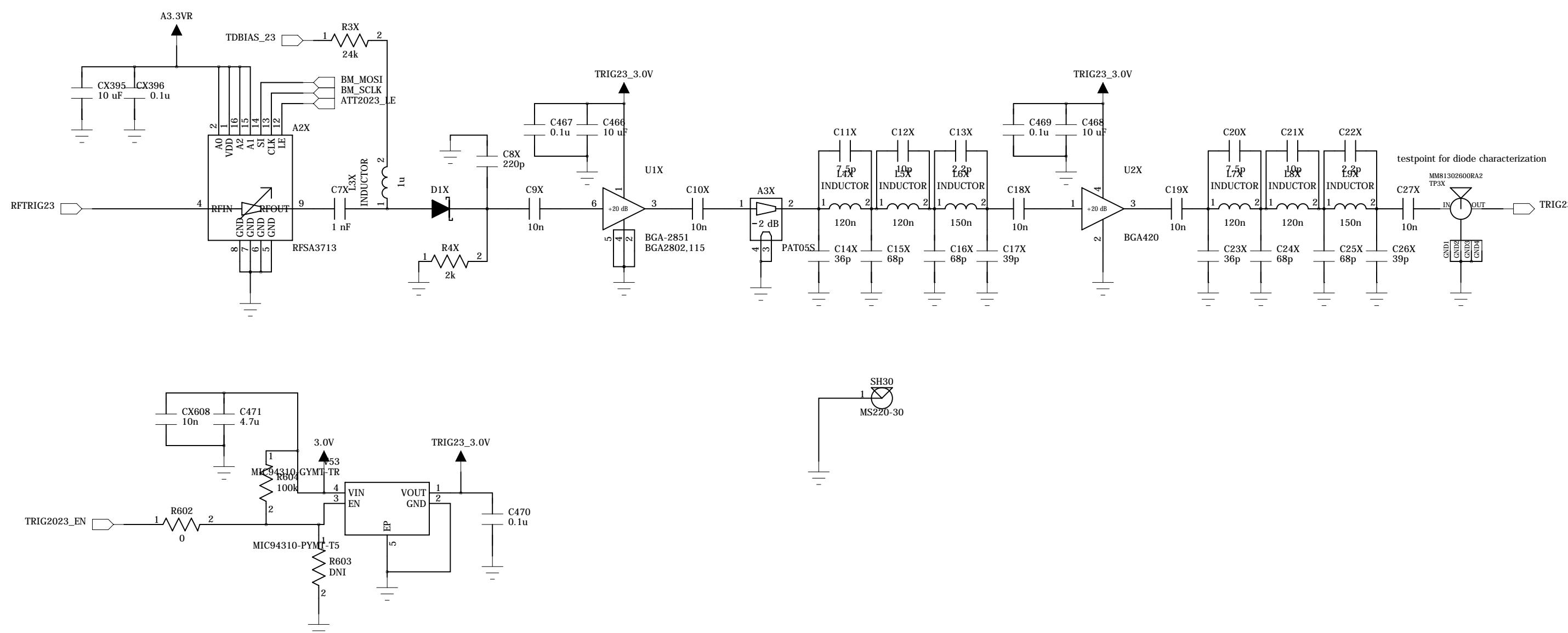
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COMPANY:		Ohio State University	
SHEET:		RF_DIOD23	
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CHECKED:	PSA	DATED:	3/3/23
QUALITY CONTROL:	PSA	DATED:	3/15/23
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CODE:	SIZE:	DESIGN:	REV:
4	C	RADIANT	3
SCALE: <Scale>	74	74	74

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REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

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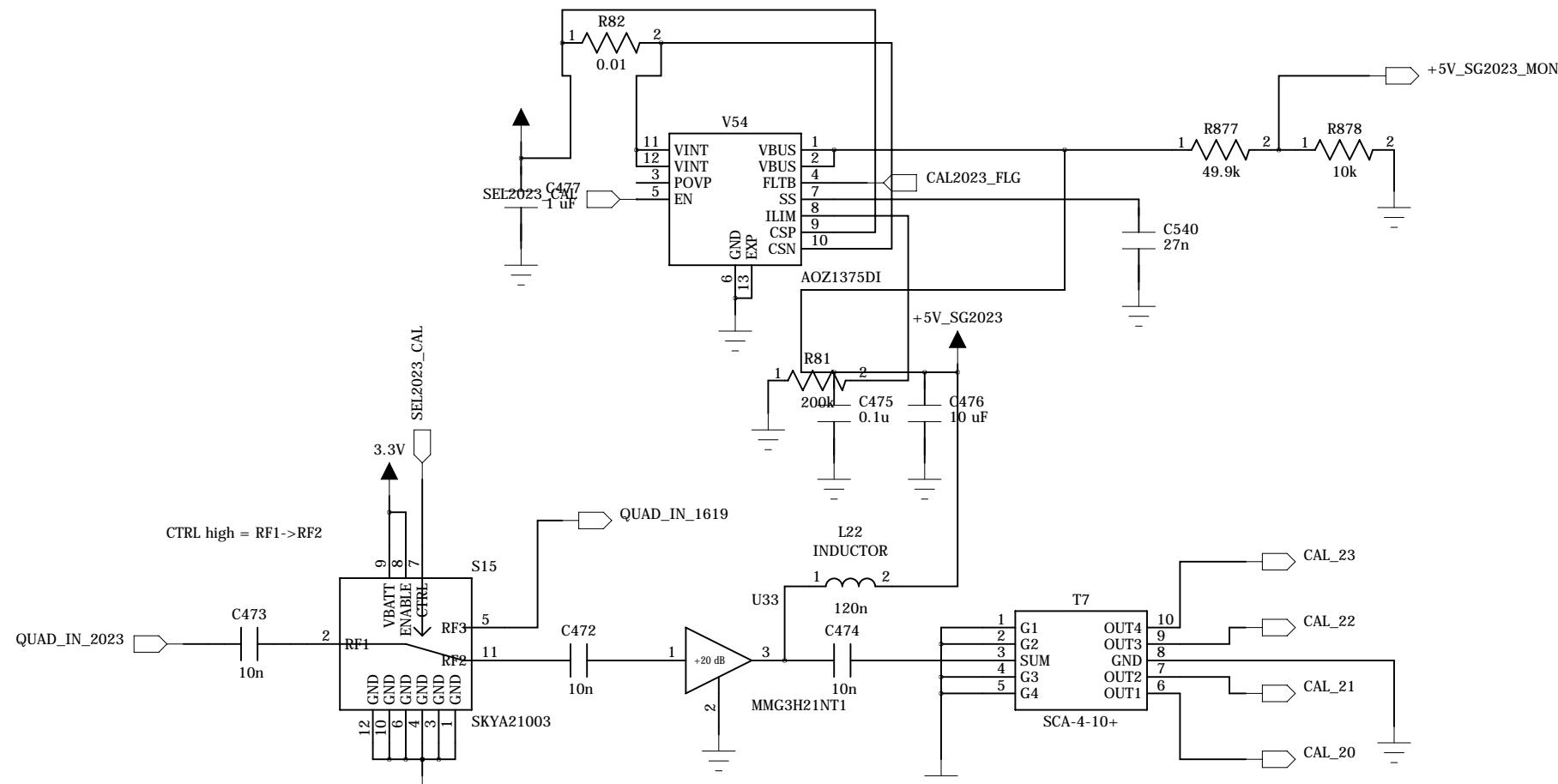
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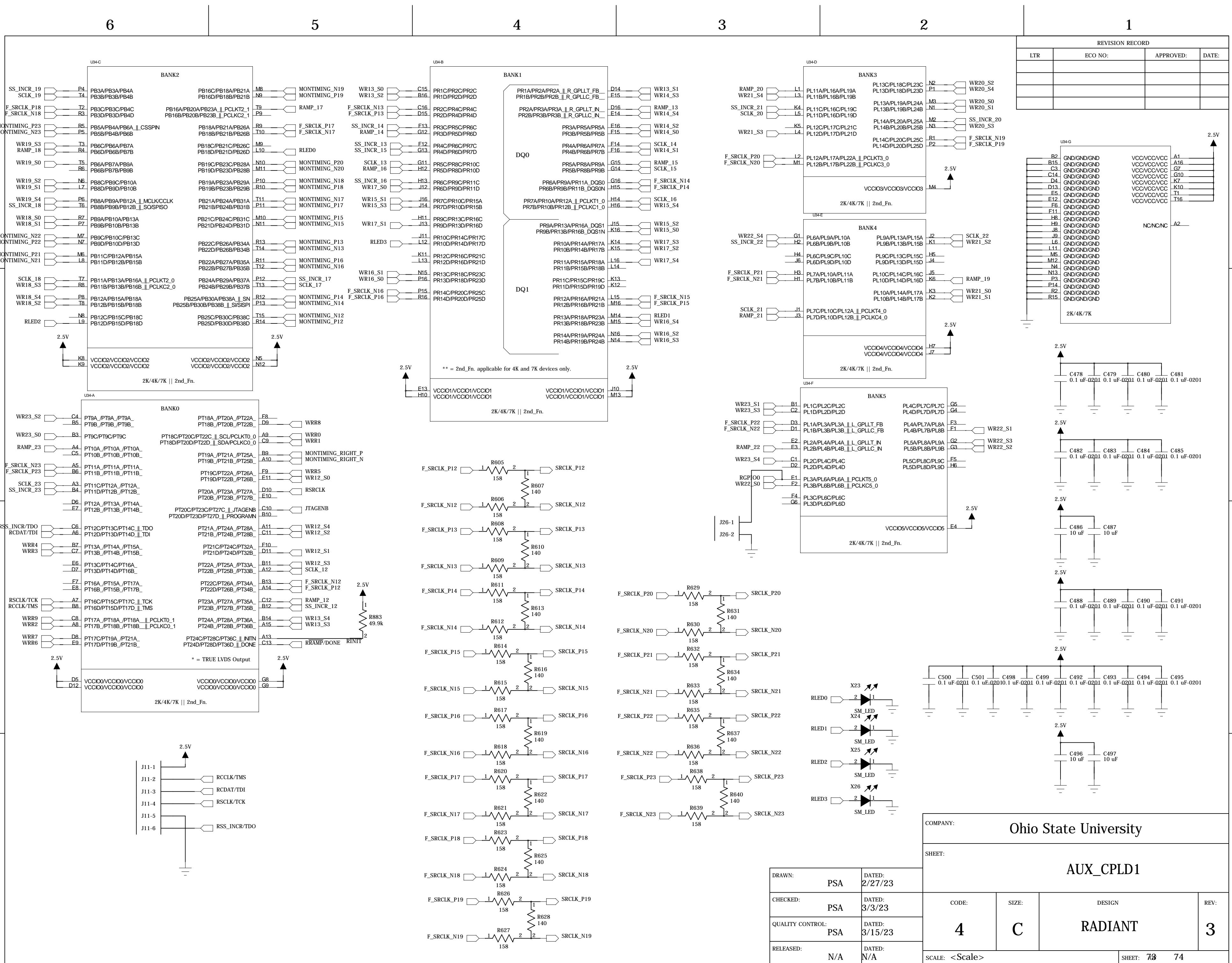
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COMPANY:	Ohio State University		
SHEET:	QUAD_SIG_GENERATOR_5		
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE:	SIZE:	DESIGN:	REV:
4	C	RADIANT	3
SCALE: <Scale>		74	74



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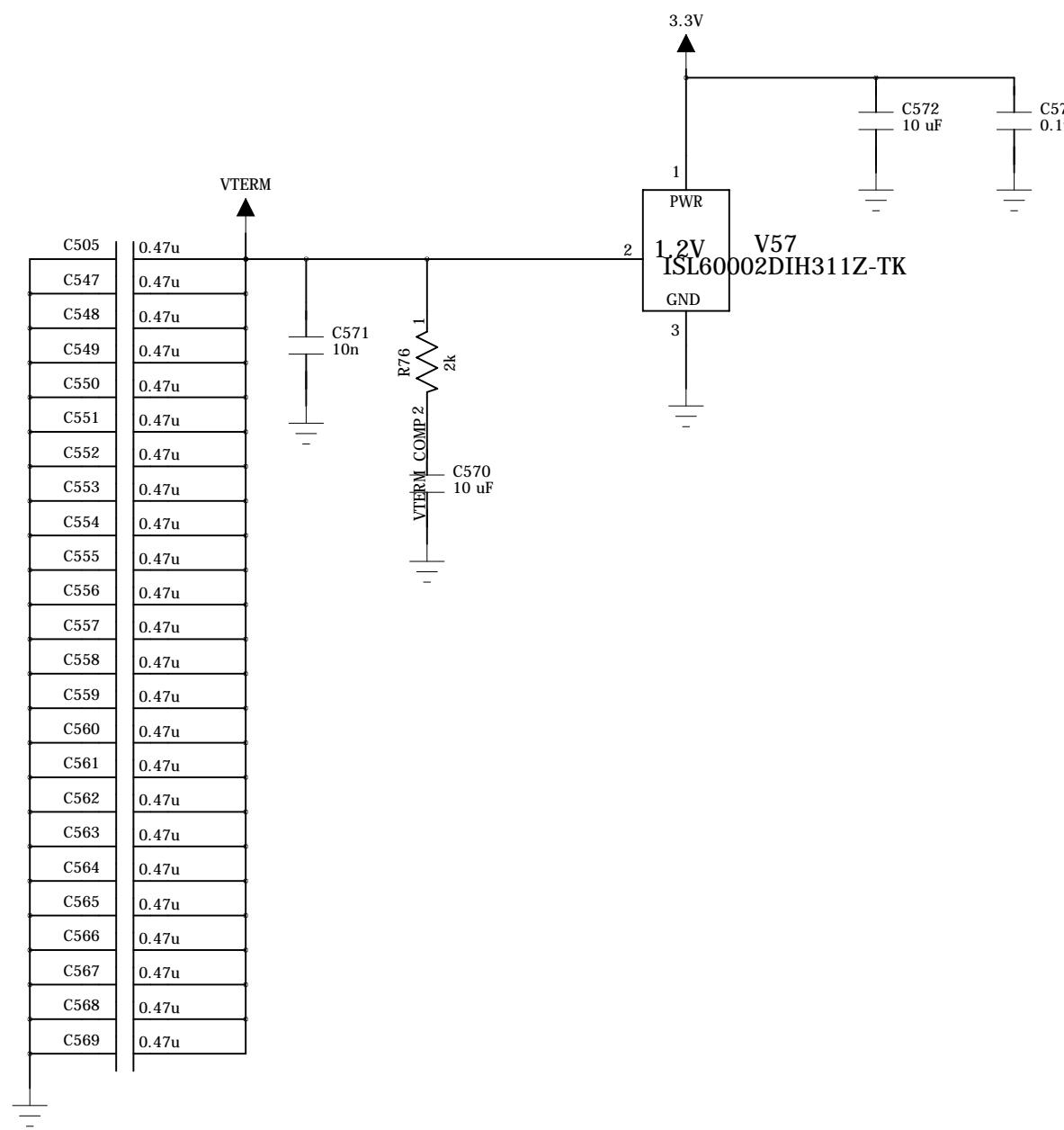
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COMPANY:		Ohio State University	
SHEET:		VTERM	
DRAWN:	PSA	DATED: 2/27/23	
CHECKED:	PSA	DATED: 3/3/23	
QUALITY CONTROL:	PSA	DATED: 3/15/23	
RELEASED:	N/A	DATED: N/A	
CODE: 4		SIZE: C	DESIGN: RADIANT
REV: 3			
SCALE: <Scale>		SHEET: 74 74	