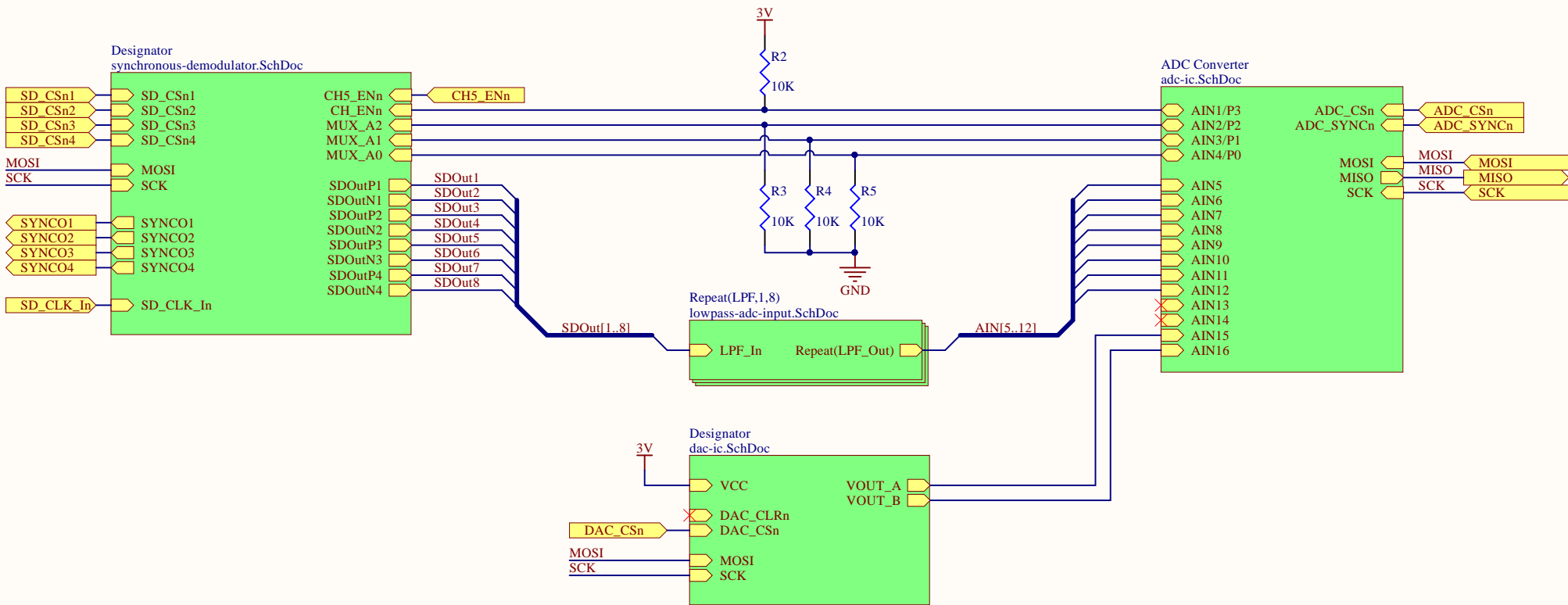
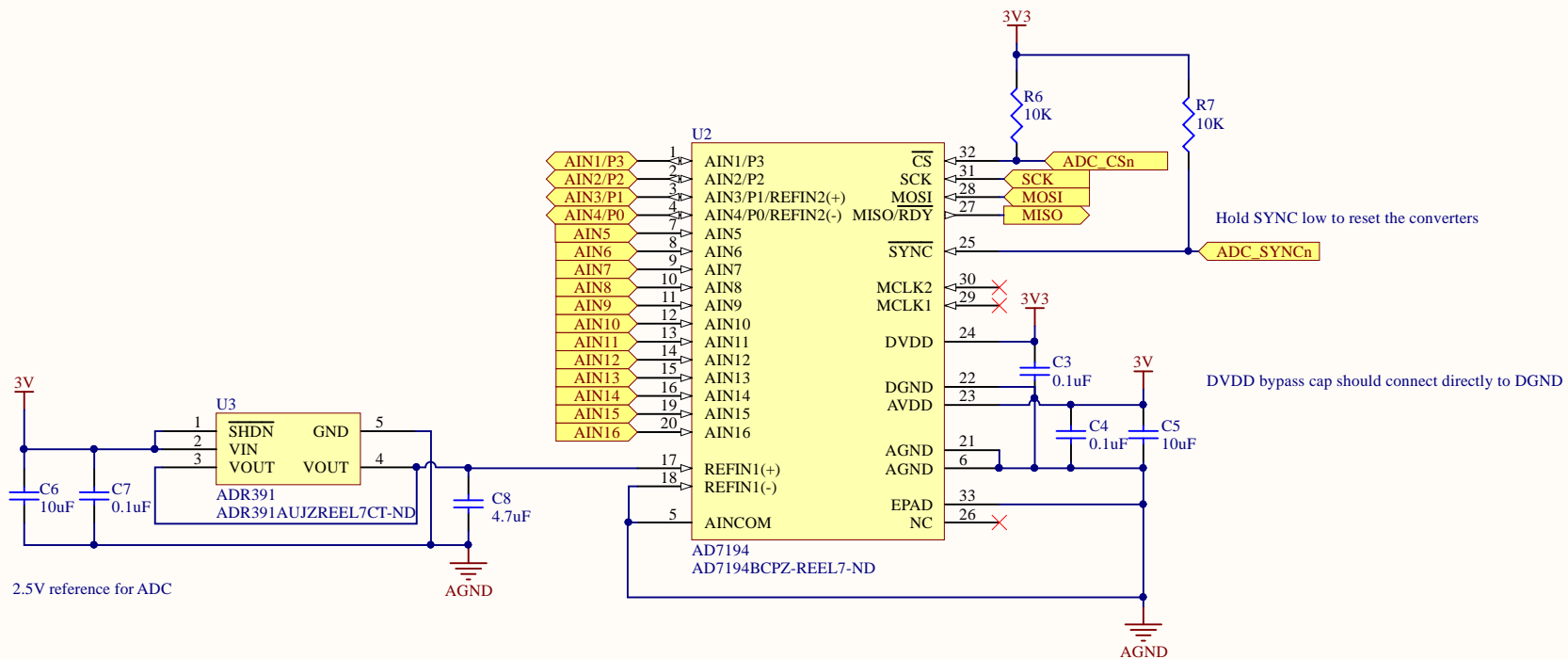


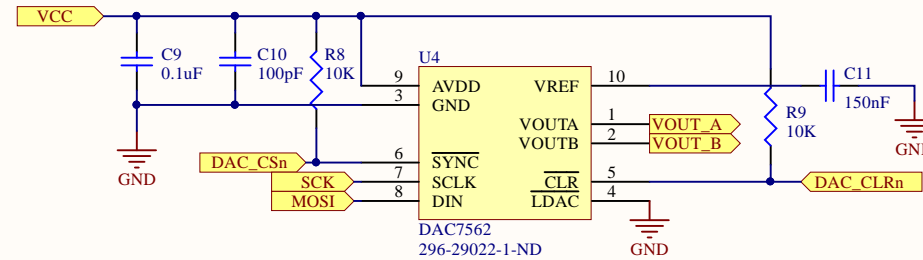
Title		
PAY Optical Top Level		
Size	Number	Revision
A4	1	2
Date:	2018-08-18	Sheet 1 of 13
File:	C:\Users\...\pay-optical-toplevel.SchDoc	Drawn By: Dylan Vogel



Title		
ADC Top Level		
Size	Number	Revision
A4	2	2
Date:	2018-08-18	Sheet 2 of 13
File:	C:\Users\...\analog-to-digital-stage.SchDoc Drawn By: Dylan Vogel	

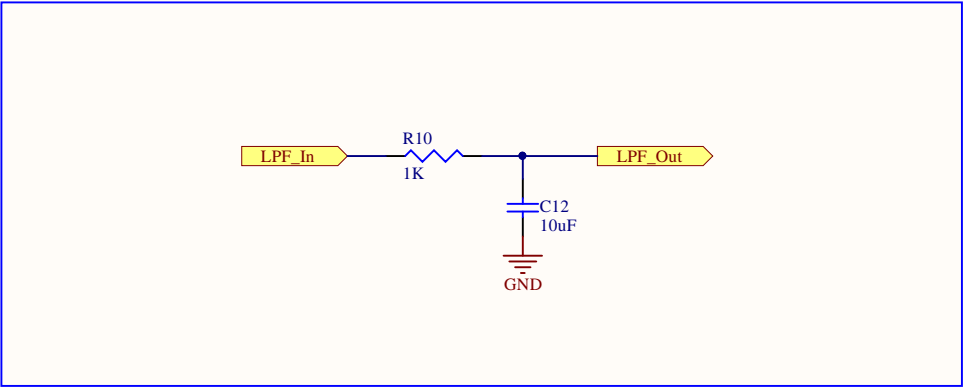


Title		
AD7194		
Size	Number	Revision
A4	3	2
Date:	2018-08-18	Sheet 3 of 13
File:	C:\Users\...\adc-ic.SchDoc	Drawn By: Dylan Vogel

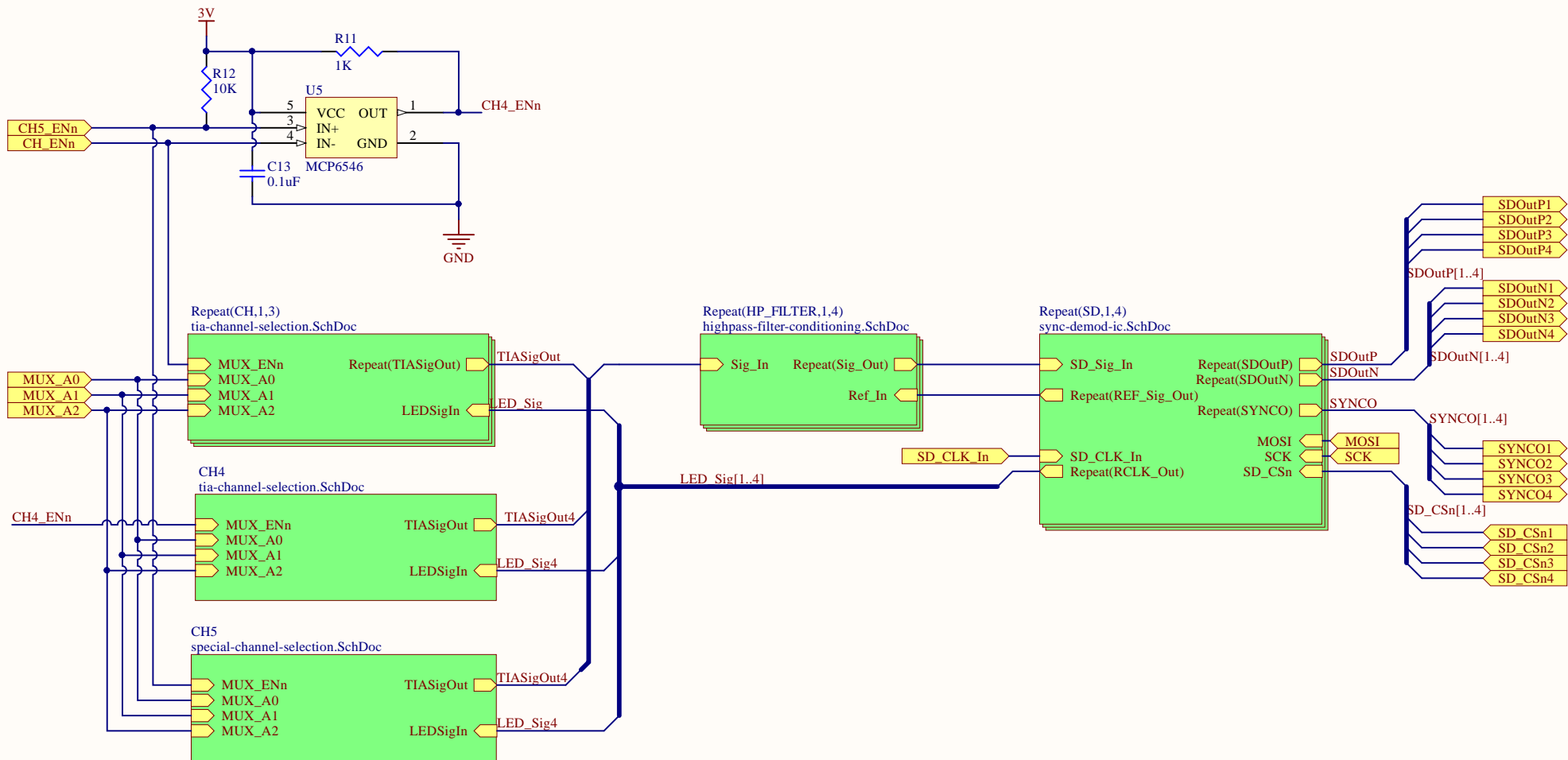


Title		
DAC7562		
Size	Number	Revision
A4	4	1
Date:	2018-08-18	Sheet 4 of 13
File:	C:\Users\...\dac-ic.SchDoc	Drawn By: Dylan Vogel

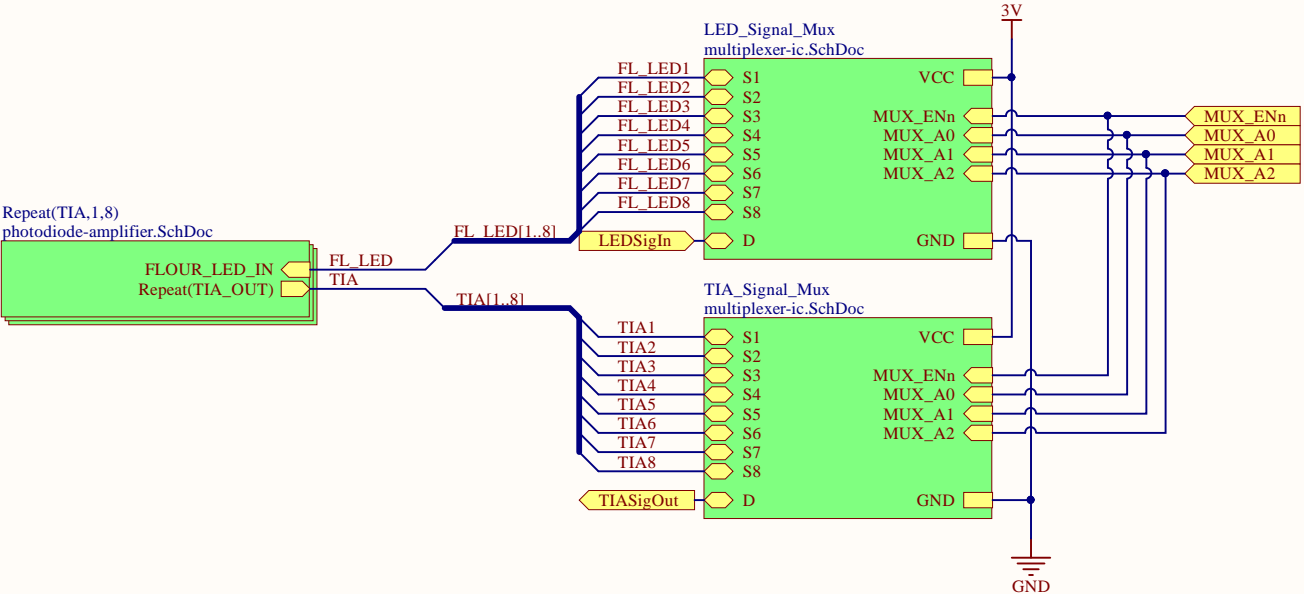
RC LOWPASS FILTER W/ -3dB OF 15.9 Hz



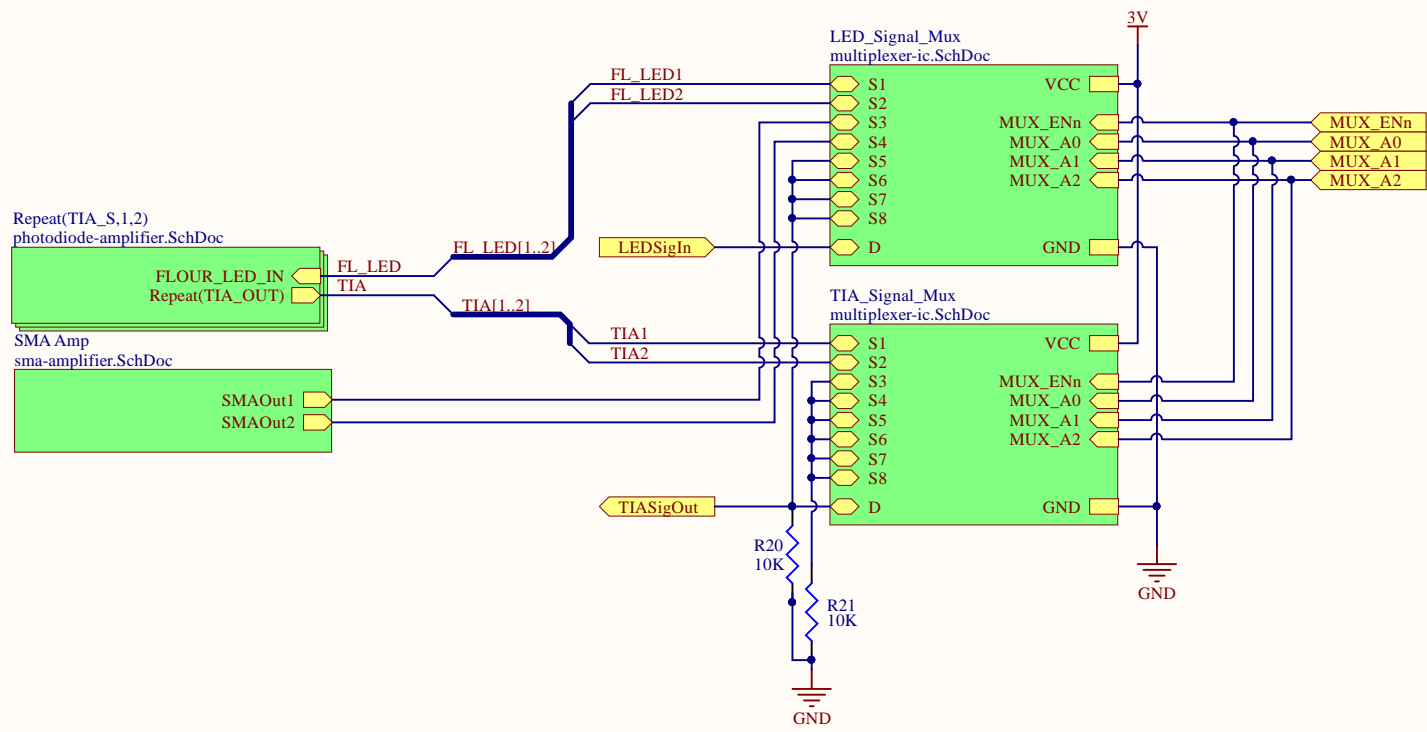
Title		
ADC Input Lowpass		
Size	Number	Revision
A4	5	2
Date:	2018-08-18	Sheet 5 of 13
File:	C:\Users\...\lowpass-adc-input.SchDoc	Drawn By: Dylan Vogel



Title		
SD Top Level		
Size	Number	Revision
A4	6	2
Date:	2018-08-18	Sheet 6 of 13
File:	C:\Users\...\synchronous-demodulator.SchDoc	
Drawn By:		Dylan Vogel



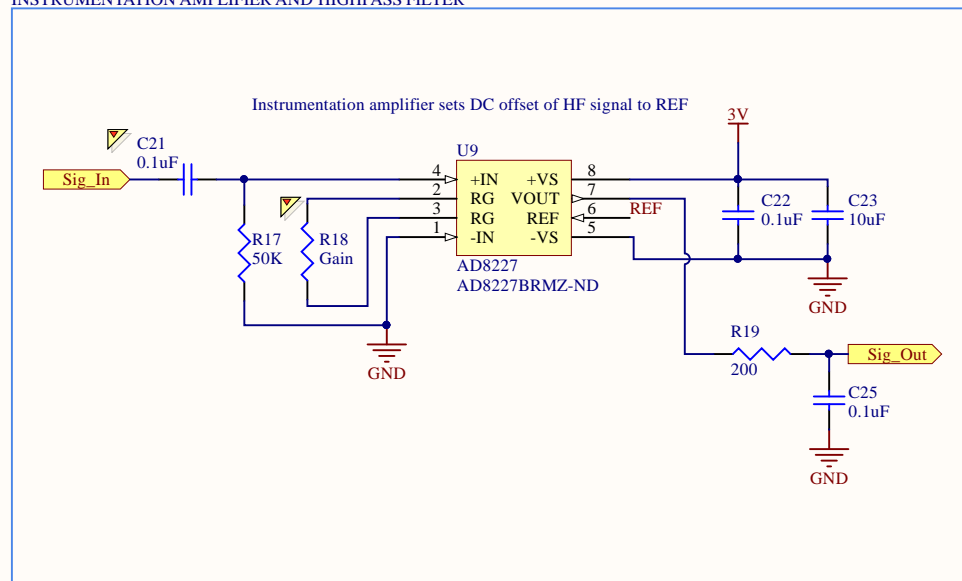
Title		
TIA Channel Selection		
Size	Number	Revision
A4	7	2
Date:	2018-08-18	Sheet 7 of 13
File:	C:\Users\...\tia-channel-selection.SchDoc	Drawn By: Dylan Vogel



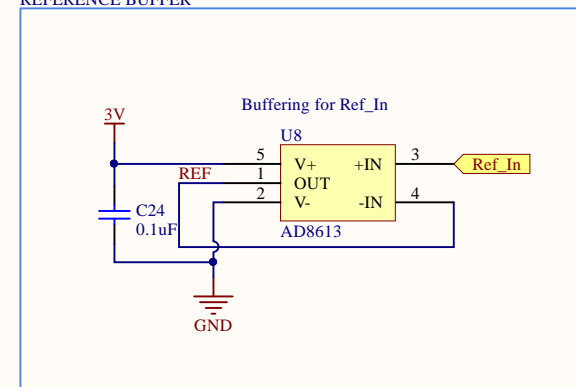
Title		
Special Channel Selection		
Size	Number	Revision
A4	8	2
Date:	2018-08-18	Sheet 8 of 13
File:	C:\Users\...\special-channel-selection.SchDoc	



# INSTRUMENTATION AMPLIFIER AND HIGHPASS FILTER



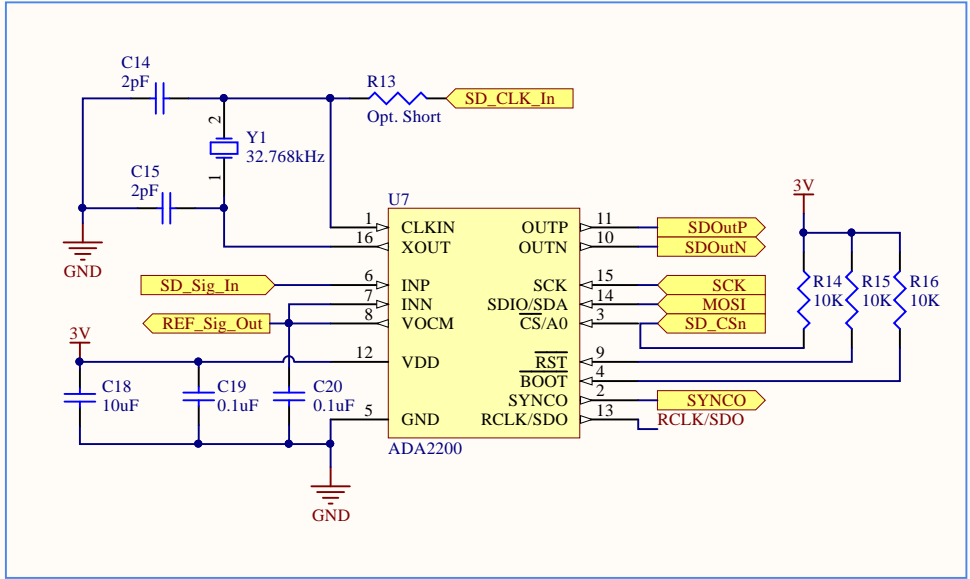
# REFERENCE BUFFER



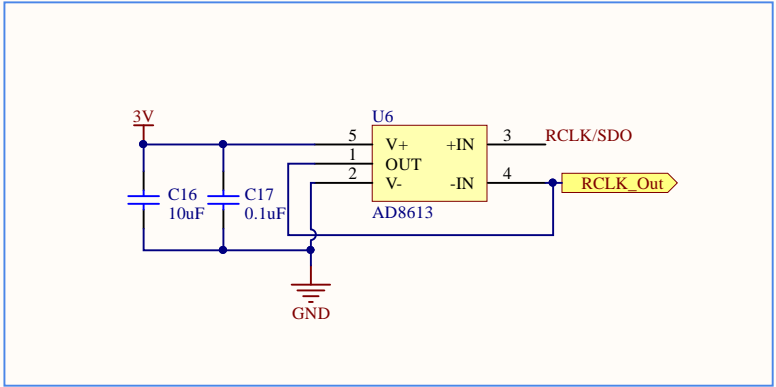
## SCHEMATIC NOTES

Title			
SD Input Highpass			
Size	Number	Revision	
A4	9	2	
Date:	2018-08-18	Sheet	9 of 13
File:	C:\Users\...highpass-filter-conditioning.sch		
Drawn By:		Dylan Vogel	

SYNCHRONOUS DEMODULATOR IC



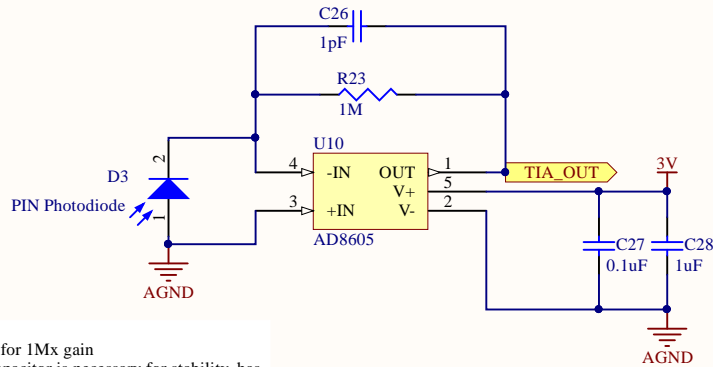
RCLK SIGNAL CONDITIONING



Text

Title		
ADA2200		
Size	Number	Revision
A4	10	2
Date:	2018-08-18	Sheet 10 of 13
File:	C:\Users\...\sync-demod-ic.SchDoc	Drawn By: Dylan Vogel

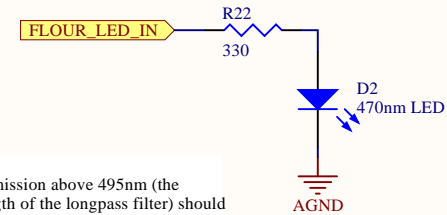
PHOTODIODE TRANSIMPEDANCE AMPLIFIER



NOTES:

- Configured for 1Mx gain
- Feedback capacitor is necessary for stability, has been selected through calculations
- Op-amp used should have low current input noise

FLUORESCENCE EXCITATION LED

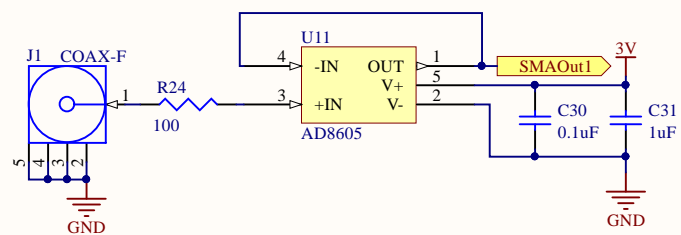


NOTES:

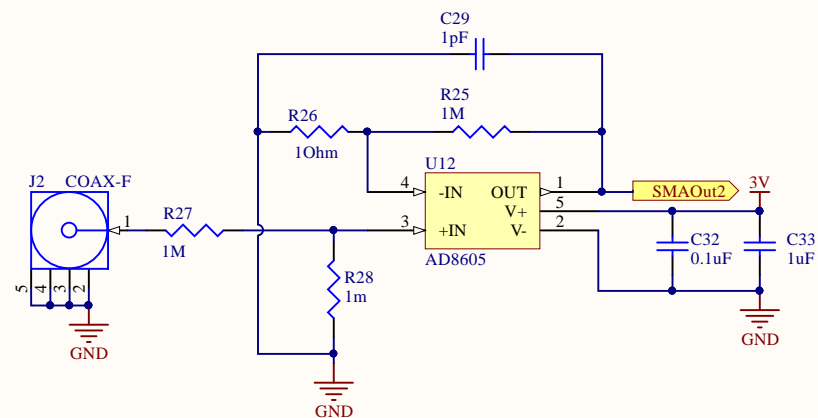
- LED emission above 495nm (the wavelength of the longpass filter) should be minimized

Title		
Photodiode Transimpedance Amplifier		
Size	Number	Revision
A4	11	2
Date:	2018-08-18	Sheet 11 of 13
File:	C:\Users\...\photodiode-amplifier.SchDoc	Drawn By: Dylan Vogel

STRAIGHT VOLTAGE MIRROR

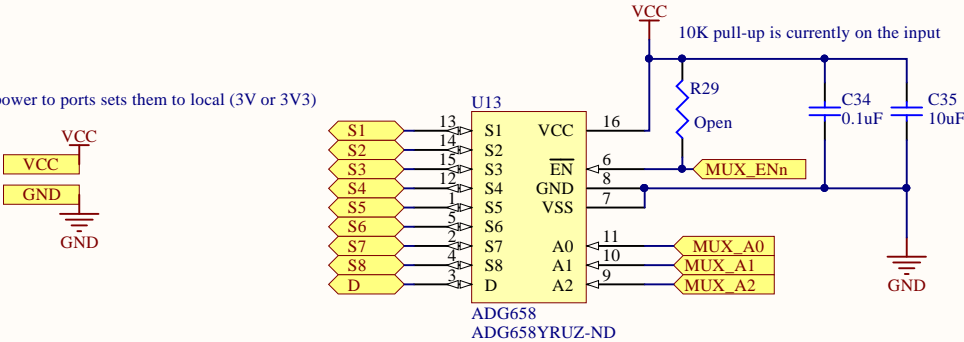


SMA VOLTAGE DIVIDER



Title			
SMA Amplifier			
Size	Number	Revision	
A4	12	2	
Date:	2018-08-18	Sheet	12 of 13
File:	C:\Users\...\sma-amplifier.SchDoc	Drawn By:	Dylan Vogel

Connecting the power to ports sets them to local (3V or 3V3)



Title		
ADG658		
Size	Number	Revision
A4	13	2
Date:	2018-08-18	Sheet 13 of 13
File:	C:\Users\...\multiplexer-ic.SchDoc	Drawn By: Dylan Vogel



A

B

C

D

E

Table of Contents

Index	Title
1	PAY Optical Top Level
2	ADC Top Level
3	AD7194
4	DAC7562
5	ADC Input Lowpass
6	SD Top Level
7	TIA Channel Selection
8	Special Channel Selection
9	ADA2200
10	SD Input Highpass
11	Photodiode Transimpedance Amplifier
12	SMA Amplifier
13	ADG658

A

B

C

D

E