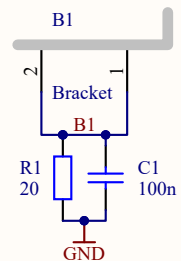
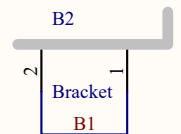




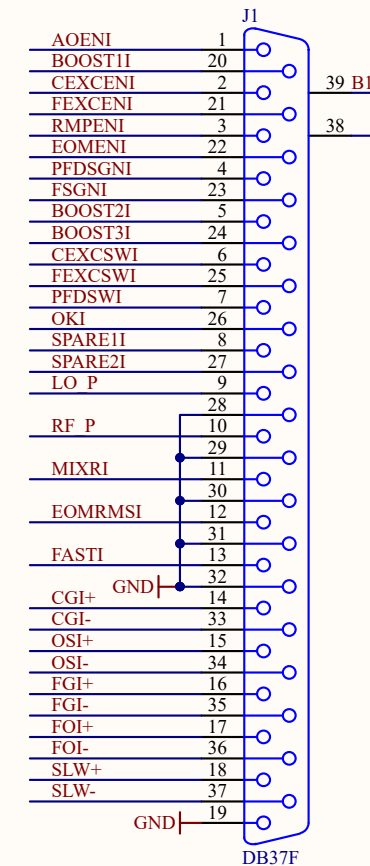
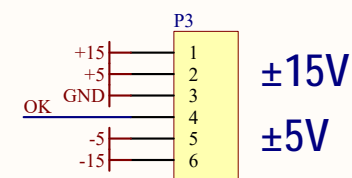
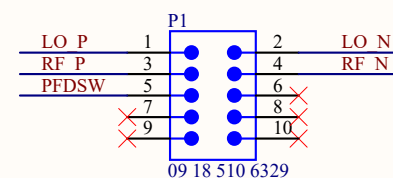
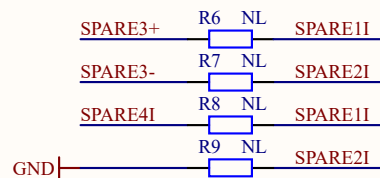
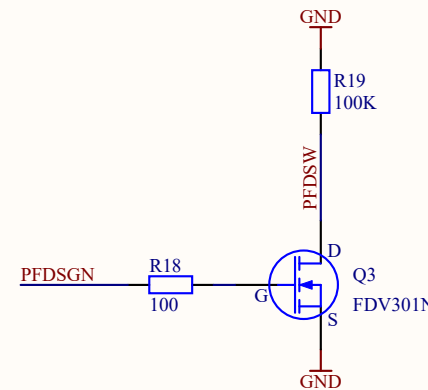
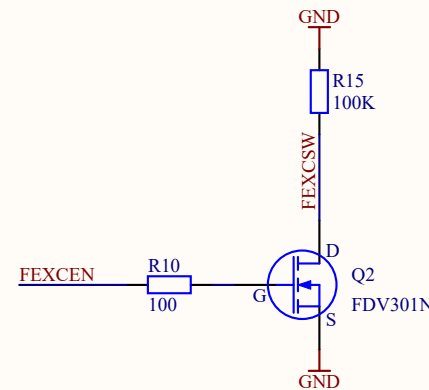
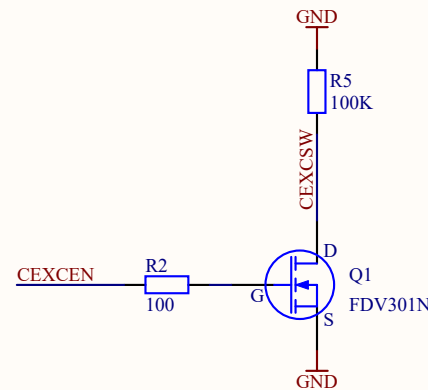
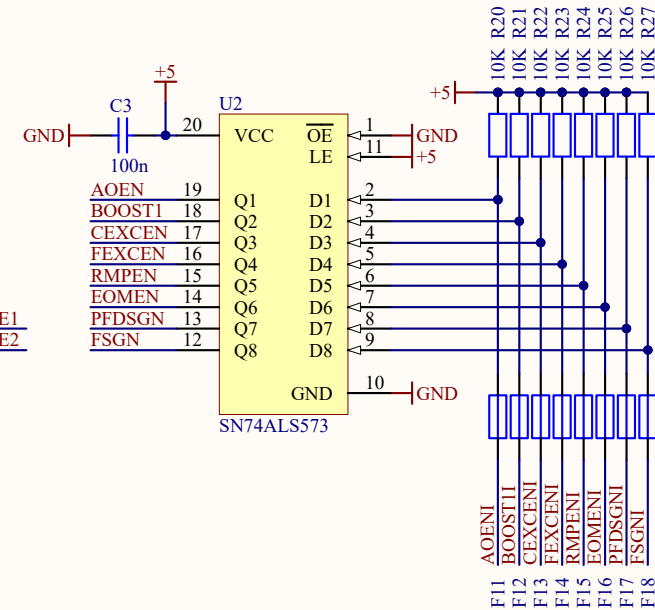
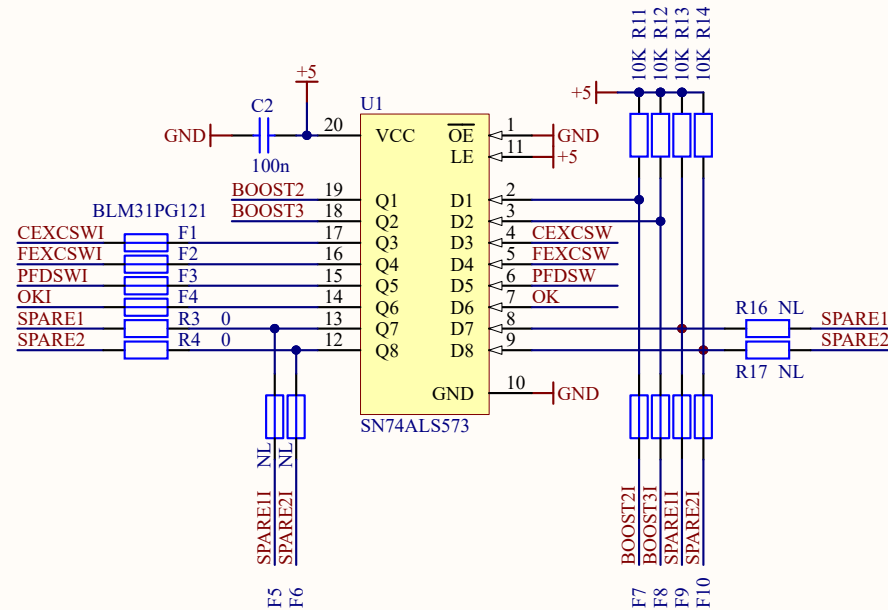
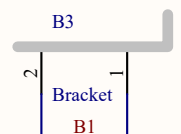
- H1 #4 screw, 3/8"
- H2 #4 screw, 3/8"
- McMaster-Carr 90272A108
- H3 #4 lock washer
- H4 #4 lock washer
- McMaster-Carr 91113A005
- H5 #4 nut
- H6 #4 nut
- McMaster-Carr 90480A005



- H7 #4 screw, 3/8"
- H8 #4 screw, 3/8"
- McMaster-Carr 90272A108
- H9 #4 lock washer
- H10 #4 lock washer
- H11 #4 nut
- H12 #4 nut



- H13 #4 screw, 3/8"
- H14 #4 screw, 3/8"
- McMaster-Carr 90272A108
- H15 #4 lock washer
- H16 #4 lock washer
- H17 #4 nut
- H18 #4 nut



Digital controls:

- 1 - Additive offset enable
- 20 - Boost 1 enable
- 2 - Common excitation enable
- 21 - Fast excitation enable
- 3 - Ramp enable
- 22 - EOM path enable
- 4 - PFD/mixer sign
- 23 - Fast path sign
- 5 - Boost 2 enable
- 24 - Boost 3 enable
- 8 - Spare 1
- 27 - Spare 2

Digital readbacks:

- 6 - Common excitation state
- 25 - Fast excitation state
- 7 - PFD/mixer sign state
- 26 - Supply OK

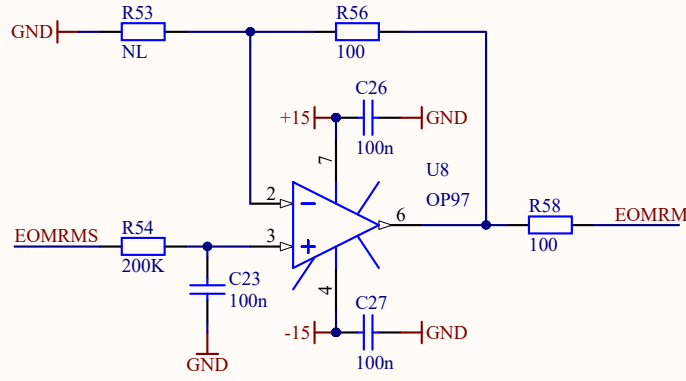
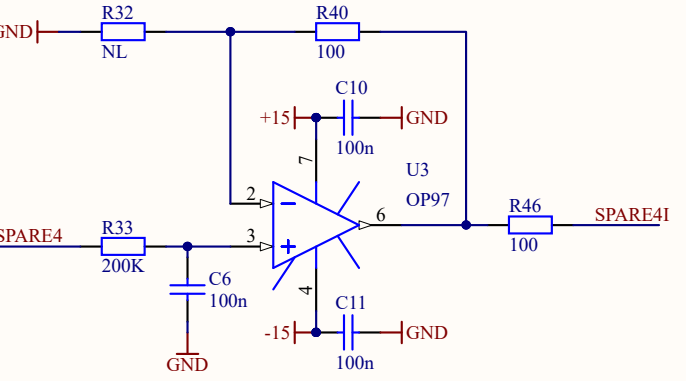
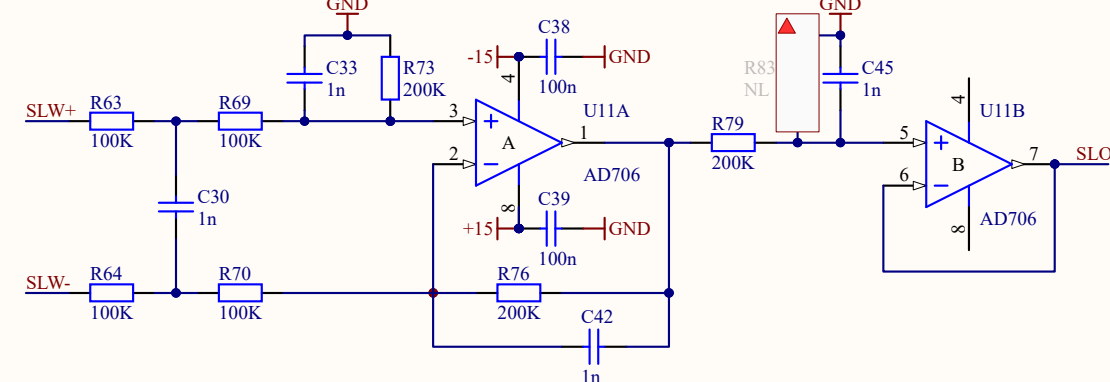
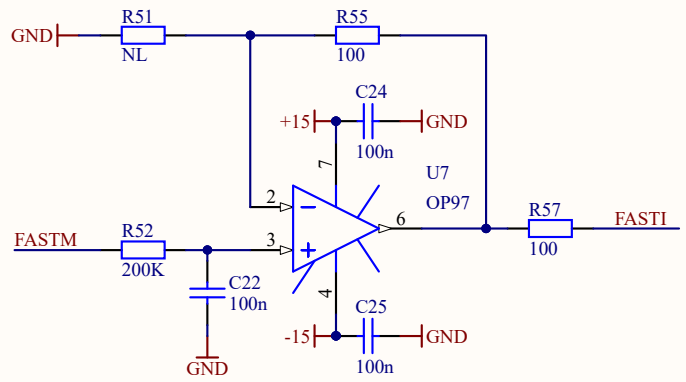
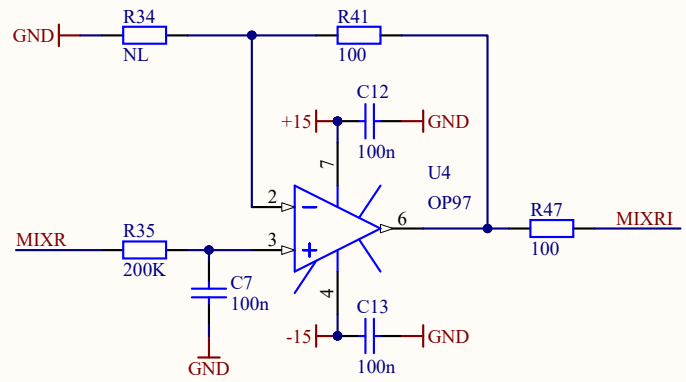
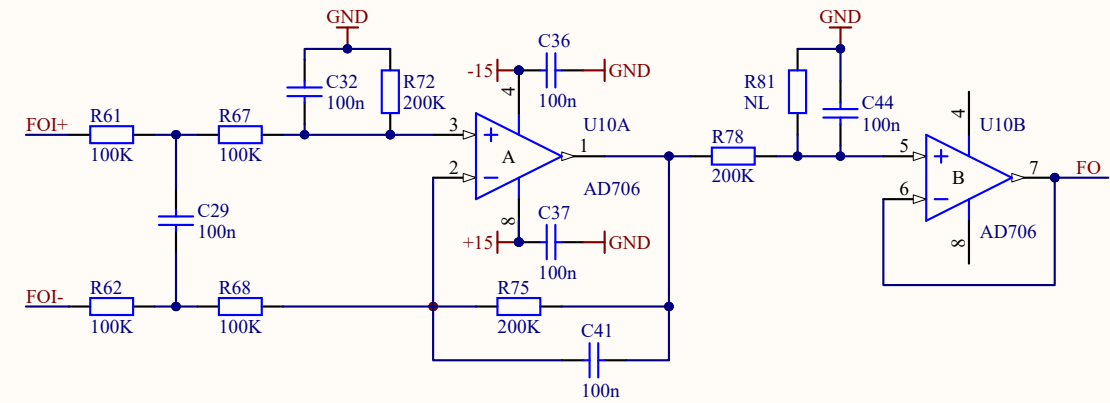
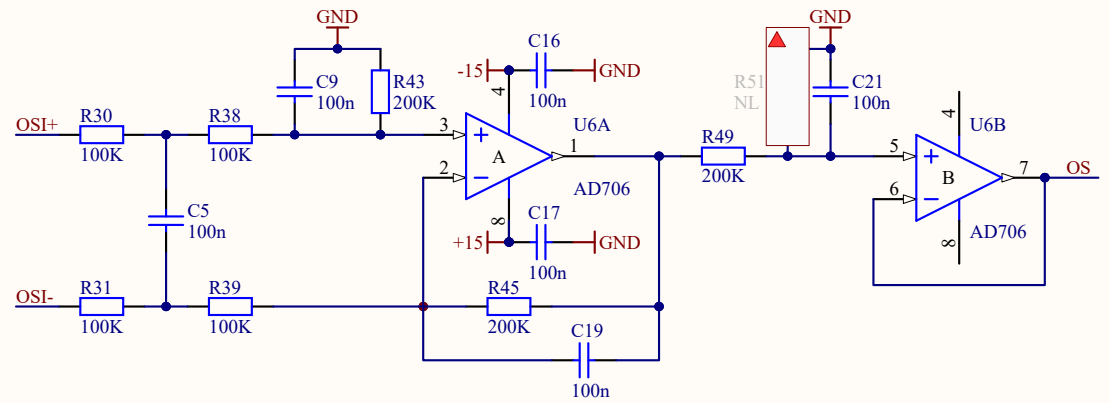
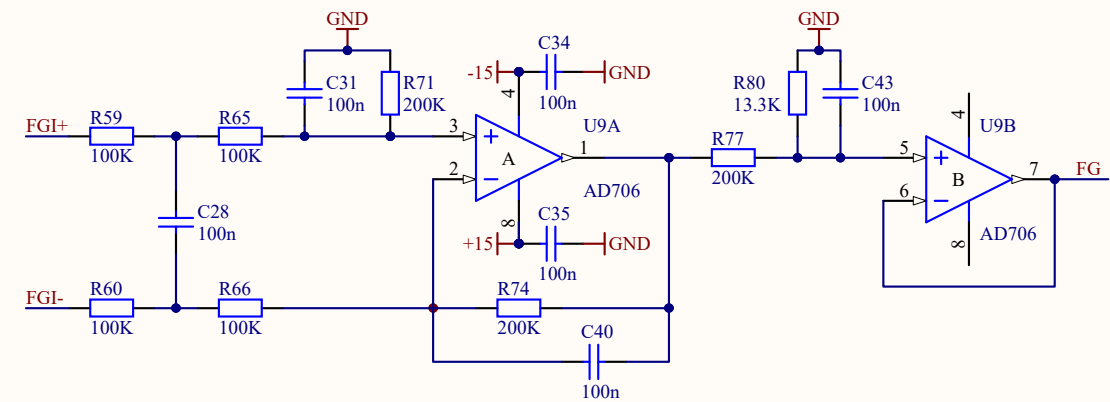
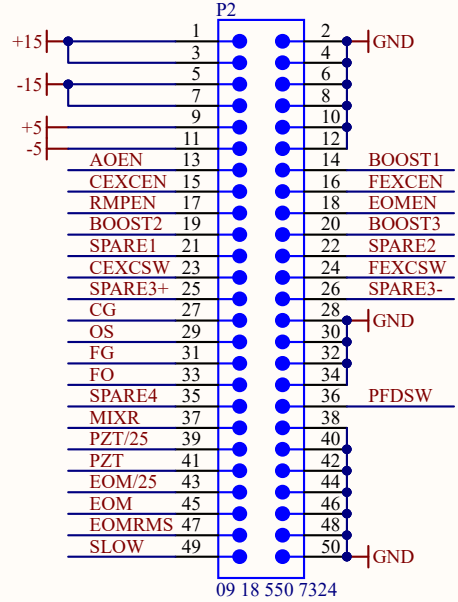
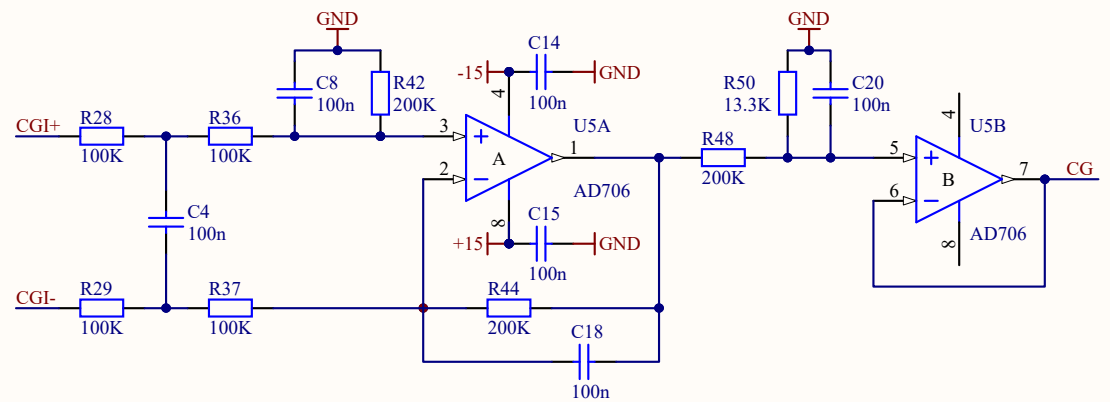
Analog controls:

- 14/33 - Common gain
- 15/34 - Common offset
- 16/35 - Fast gain
- 17/36 - Fast offset
- 18/37 - Slow control

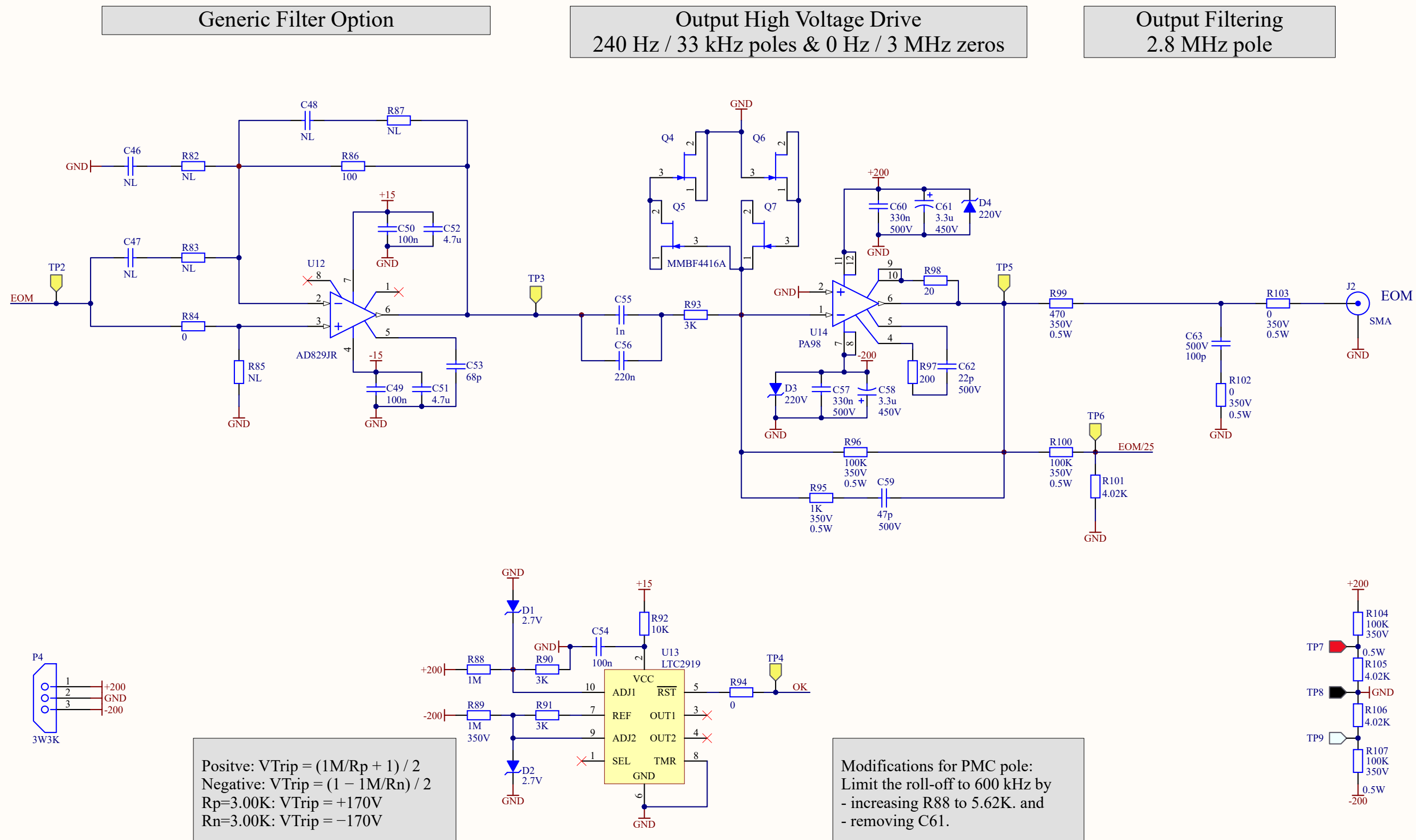
Analog readbacks:

- 9/28 - LO power
- 10/29 - RF power
- 11/30 - Mixer (error point)
- 12/31 - EOM RMS value
- 13/32 - Fast output

Title TTFFS: HV/Interface		
Size B	Number D1700076	Revision 1
Date: 1/31/2018	Sheet 1 of 4	
File: D:\Users\...\TTFSSHV1.SchDoc	Drawn By: D. Sigg	



Title		
TTFFS: HV/Interface		
Size	Number	Revision
B	D1700076	1
Date:	1/31/2018	Sheet 2 of 4
File:	D:\Users\...\TTFSSHV2.SchDoc	Drawn By: D. Sigg



Positive: $V_{Trip} = (1M/R_p + 1) / 2$
 Negative: $V_{Trip} = (1 - 1M/R_n) / 2$
 $R_p=3.00K: V_{Trip} = +170V$
 $R_n=3.00K: V_{Trip} = -170V$

Modifications for PMC pole:
 Limit the roll-off to 600 kHz by
 - increasing R88 to 5.62K. and
 - removing C61.

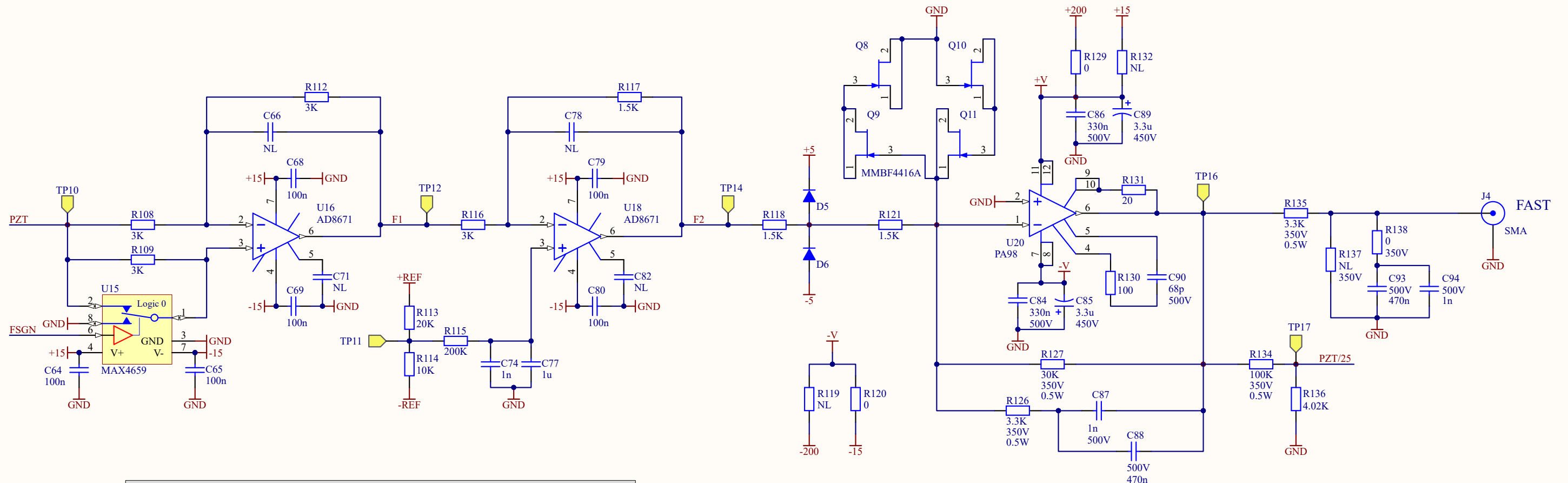
Title		
TTFFS: HV/Interface		
Size	Number	Revision
B	D1700076	1
Date:	1/31/2018	Sheet 3 of 4
File:	D:\Users\...TTFSSHV3.SchDoc	Drawn By: D. Sigg

Fast Path Polarity

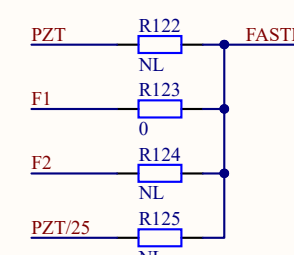
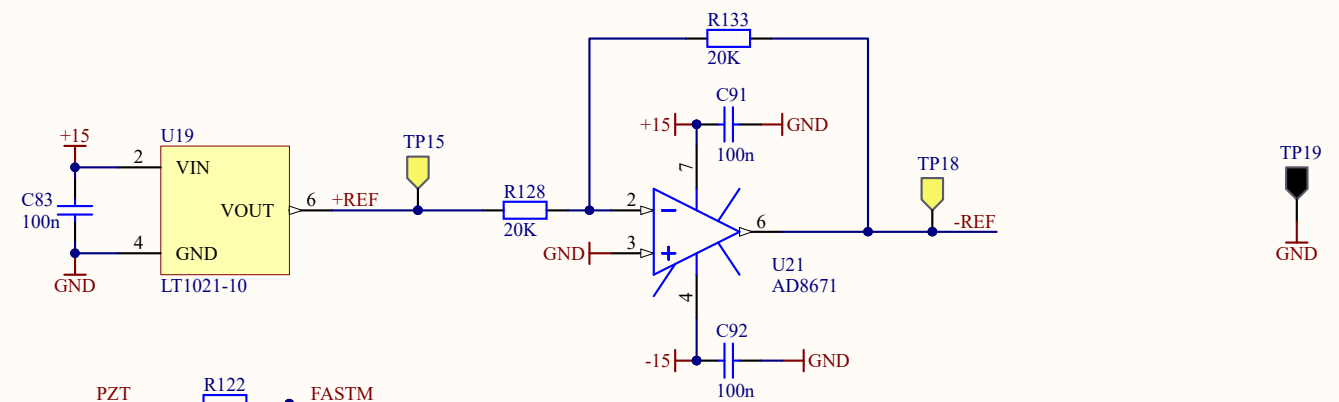
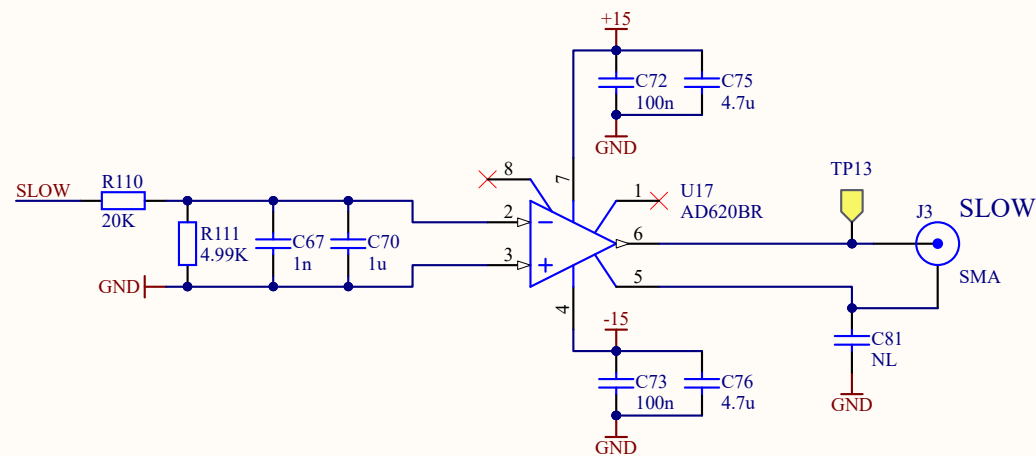
Output Offset

Output High Voltage Drive
10 Hz / 100 Hz pole/zero

Output Filtering
100 Hz pole



Slow Path Output Driver
40 Hz pole, gain 0.2



Title		
TTFFS: HV/Interface		
Size	Number	Revision
B	D1700076	1
Date:	1/31/2018	Sheet 4 of 4
File:	D:\Users\...\TTFSSHV4.SchDoc	Drawn By: D. Sigg