

ICWSHLP2_Adaptor_2X2

ICWSHLP2

GRAMS3D

Revision 1.00

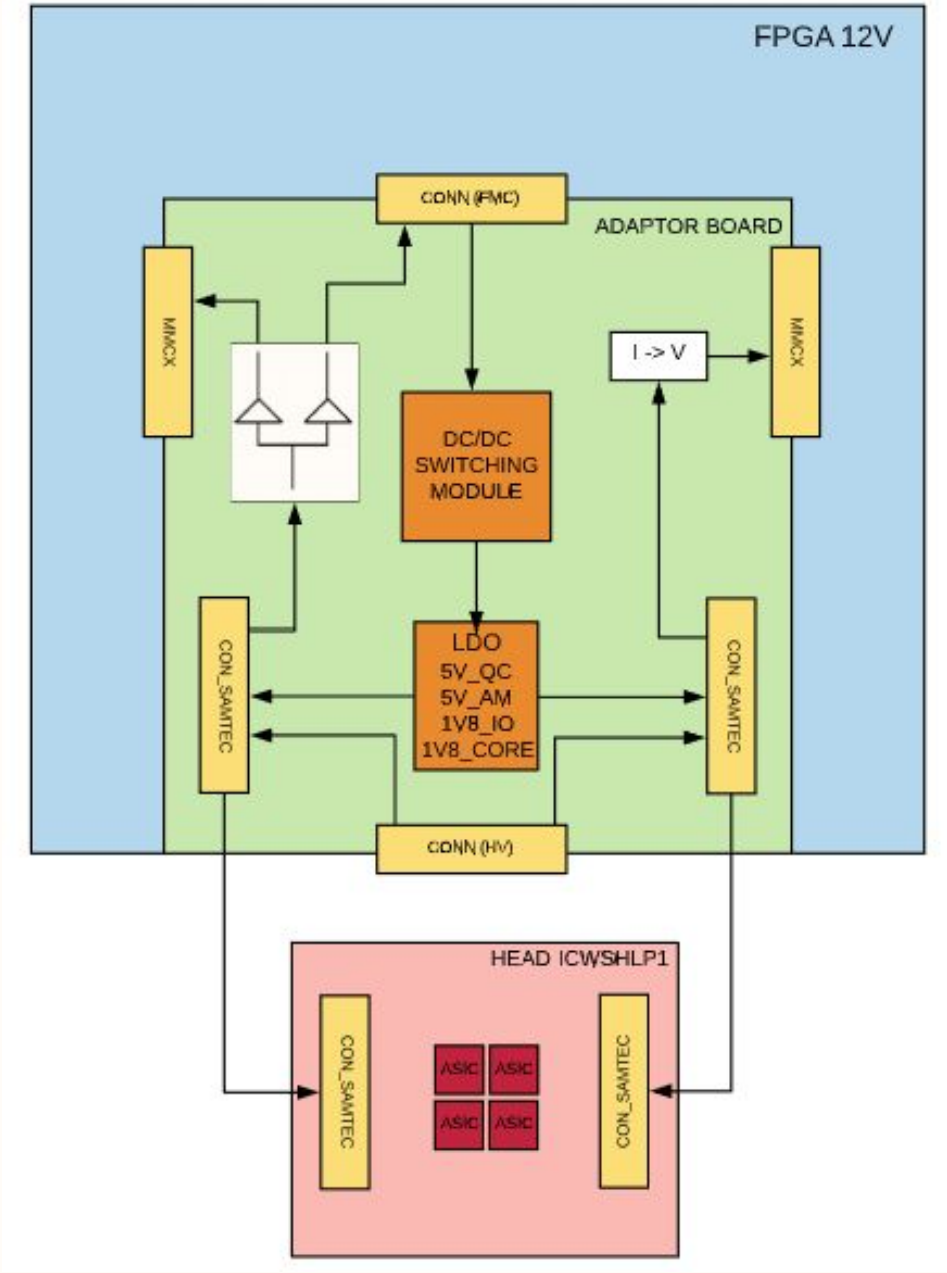
Date : 2022-04-12

REV1
Revision Cartridge Slim

Revision
1.00

SER1
Serial Cartridge STD

Serial

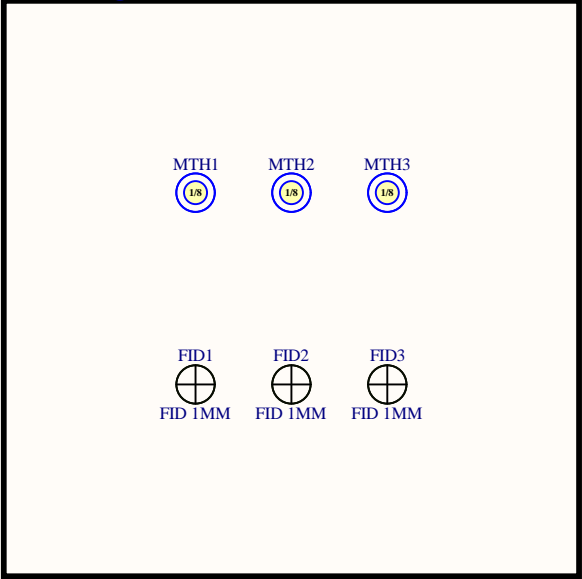


Revision history	

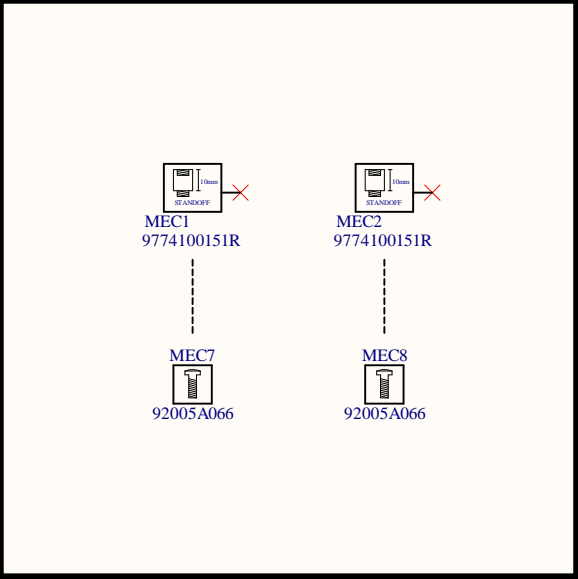
Package size conversion	
<i>Metric</i>	<i>Imperial</i>
1005	0402
1608	0603
2012	0805
3216	1206
3225	1210
6432	2512

Project Title			
ICWSHLP2_Adaptor_2X2			
Global Project			
ICWSHLP2			
Size	11x17	Group	GRAMS3D
Revision	PCB	SCH	1.00
Date	2022-04-12		Sheet 1 of 12
Filename	ICWSHLP2_Adaptor_2x2_Title.SchDoc		Designers Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte

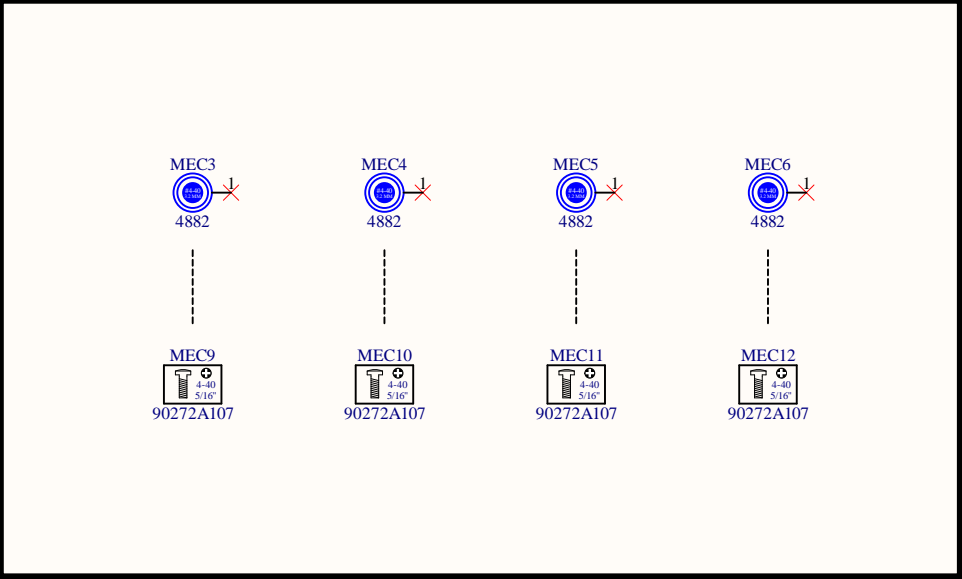
Mounting holes and fiducials



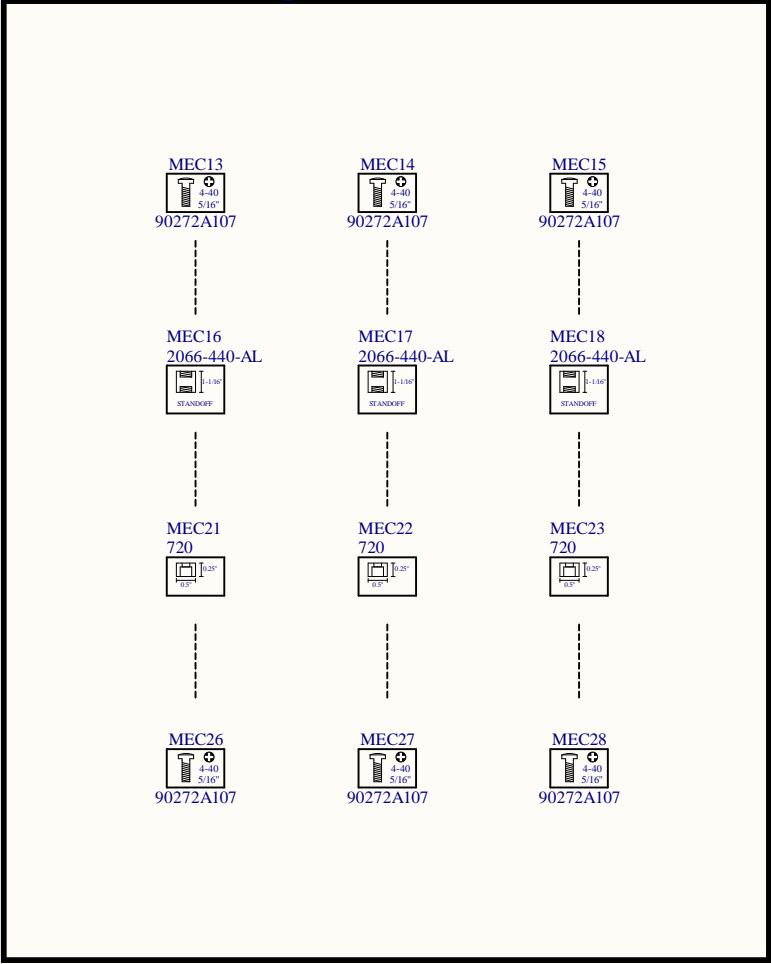
FMC Connector PEM



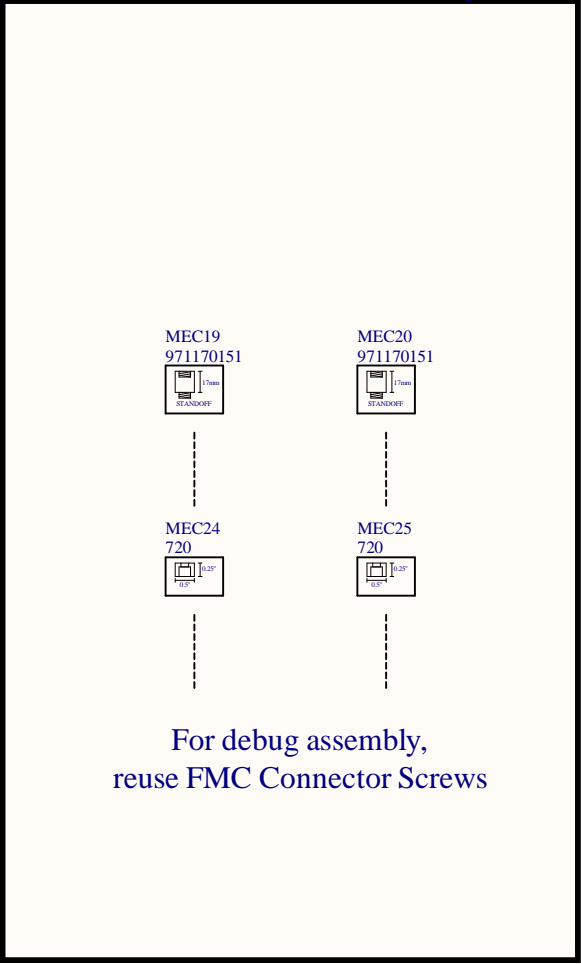
QSE Connector PEM



Standoffs for Mounting Holes



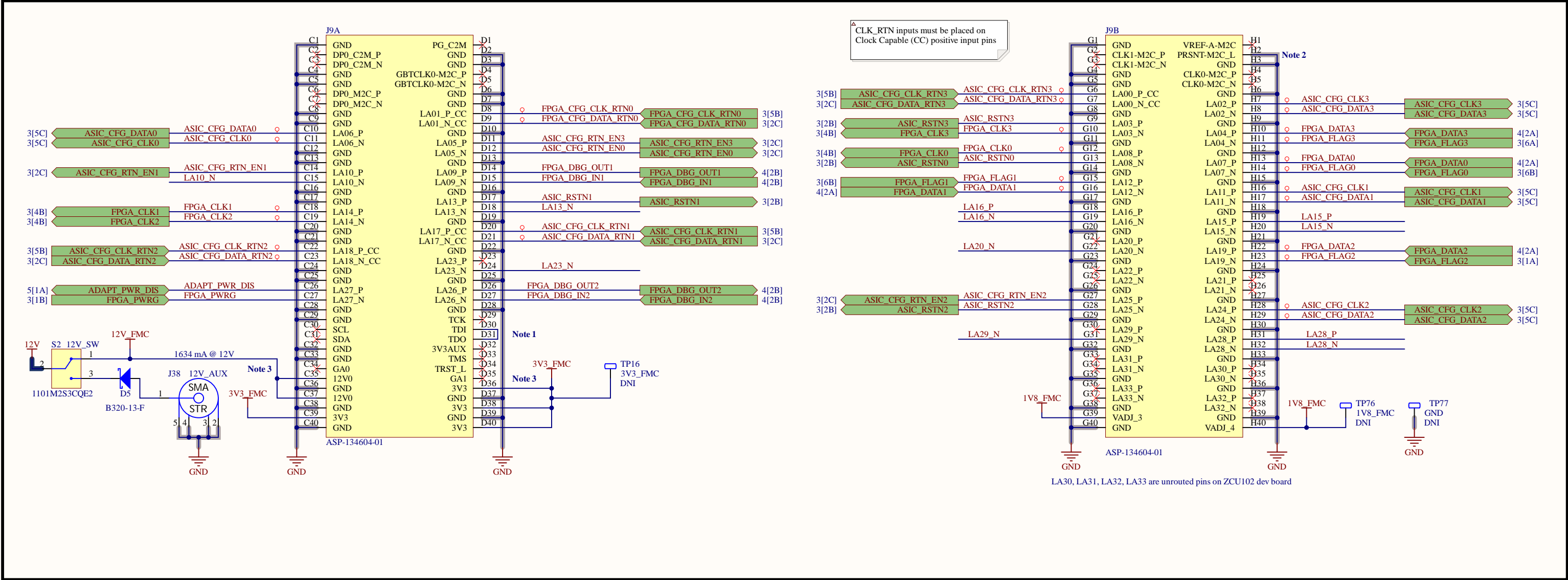
Standoffs for FMC Connector (Debug)



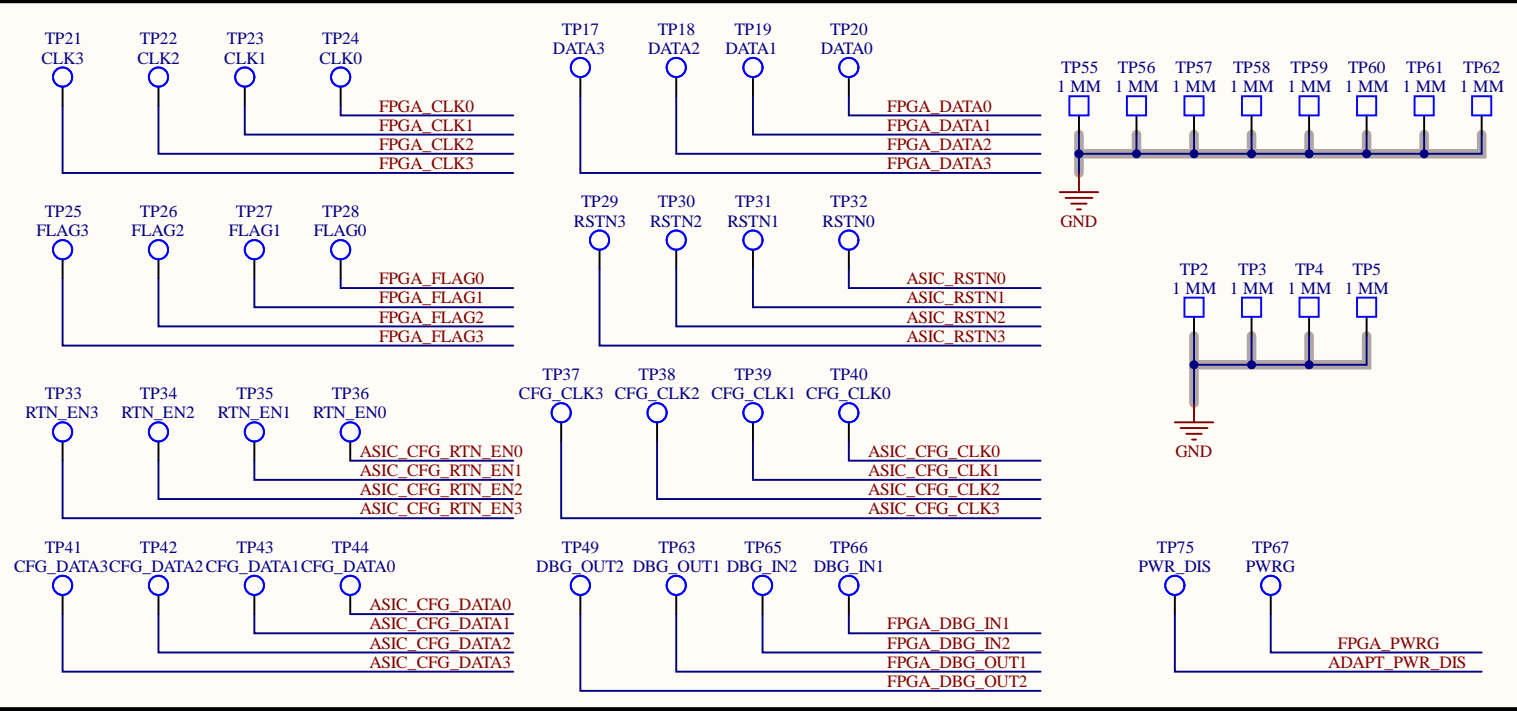
For debug assembly,
reuse FMC Connector Screws

Sheet Name			Mechanical		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision	PCB SCH 1 . 00
Date				Sheet	
2022-04-12				2 of 12	
Filename				Designers	
ICWSHLP2_Adaptor_2x2_Mechanical.SchDoc				Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte	

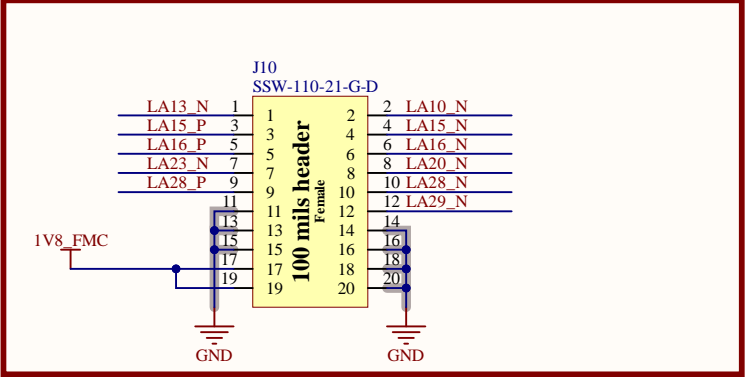
FMC connector



ASIC signals test points

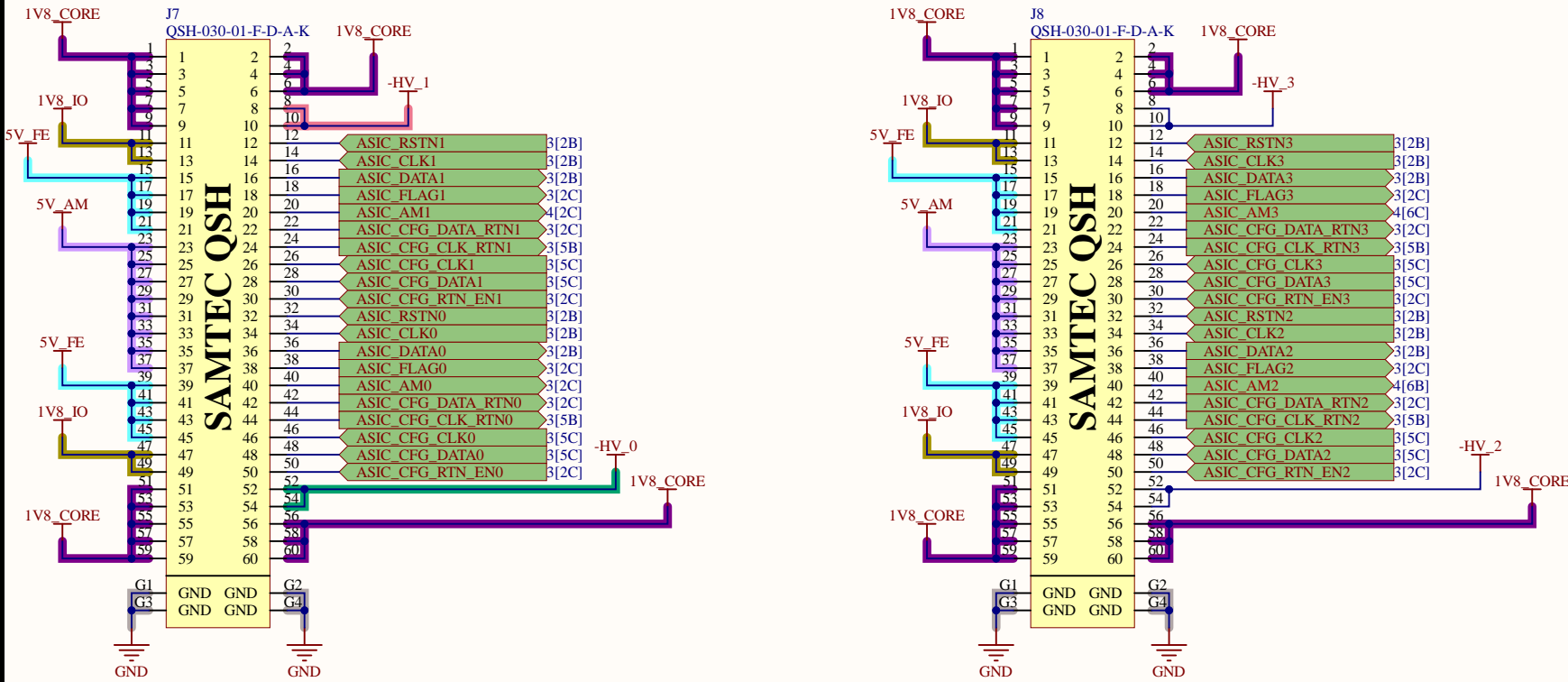


Female Header for unused pins



Sheet Name			
FMC Connector			
Project Title			
ICWSHLP2_Adaptor_2X2			
Global Project			
ICWSHLP2			
Size	11x17	Group	GRAMS3D
Date	2022-04-12	Revision	1.00
Filename	ICWSHLP2_Adaptor_2x2_Connector_FMC.SchDoc		
Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte		

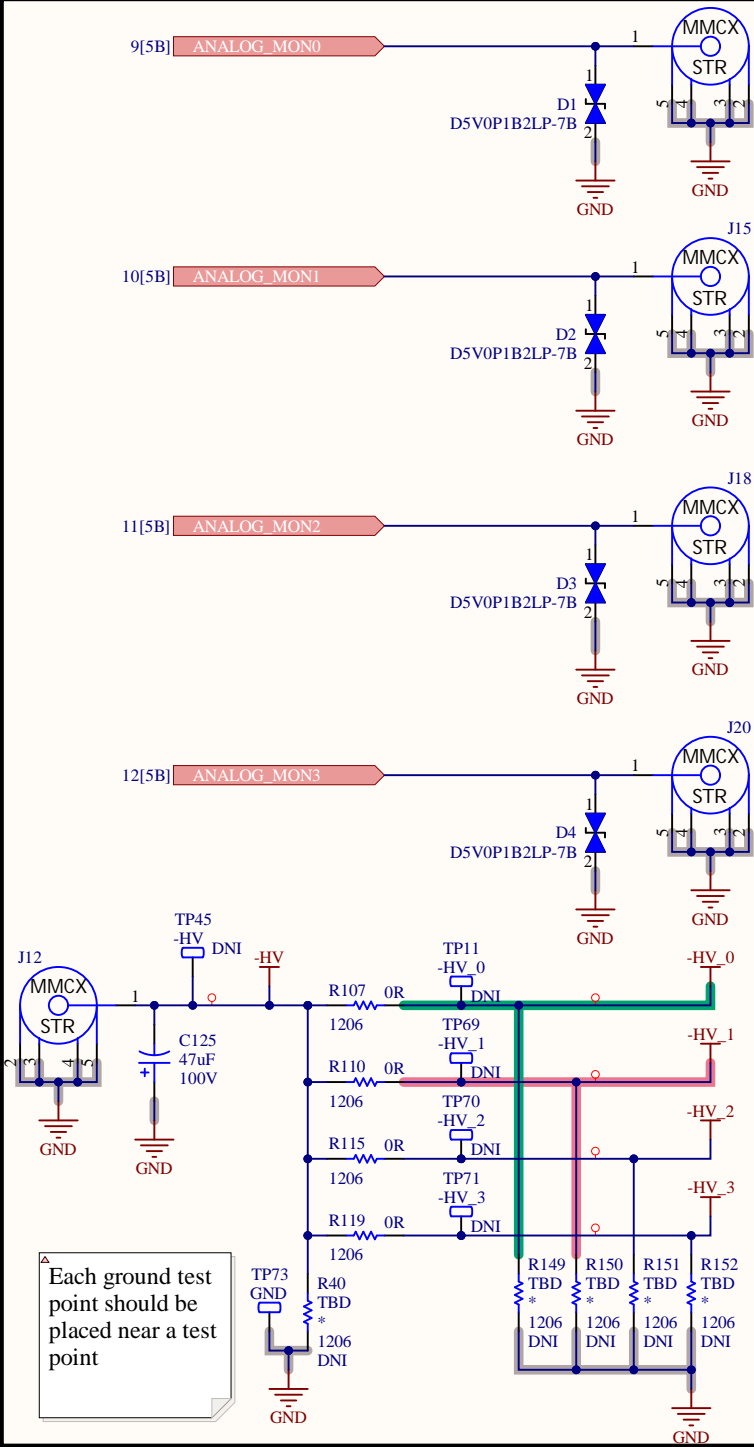
SAMTEC connector to ASIC



Cable x2 : EQCD-020-XX.XX-TED-TBR-1-B
PIN 1 to PIN 1

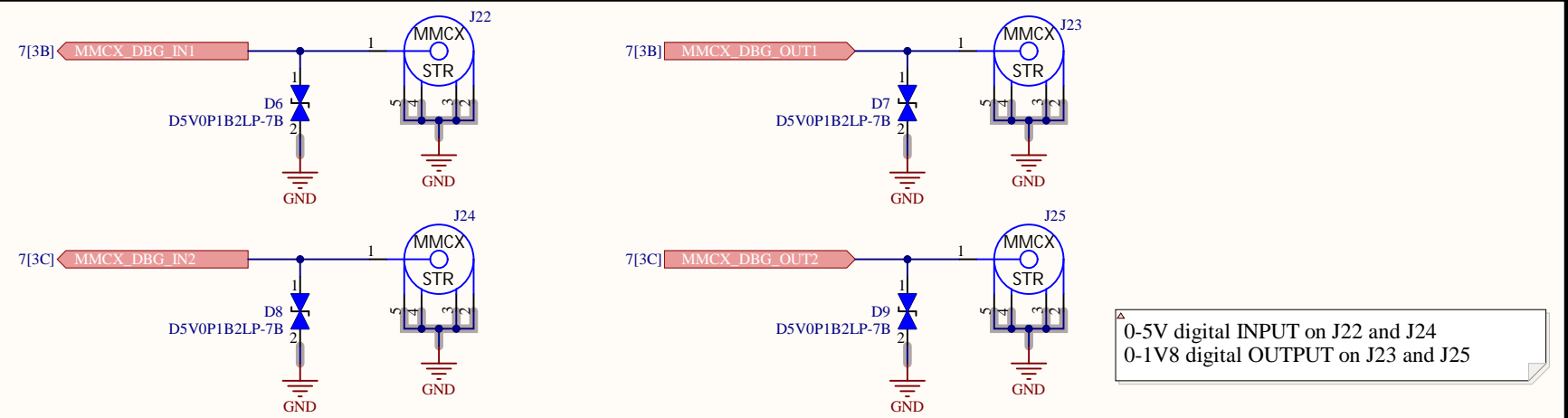
PCB NOTE: First end (on the head board) is TED,
second end (on the adaptor board) is TBR

ANALOG_MON and -HV set test points



Each ground test point should be placed near a test point

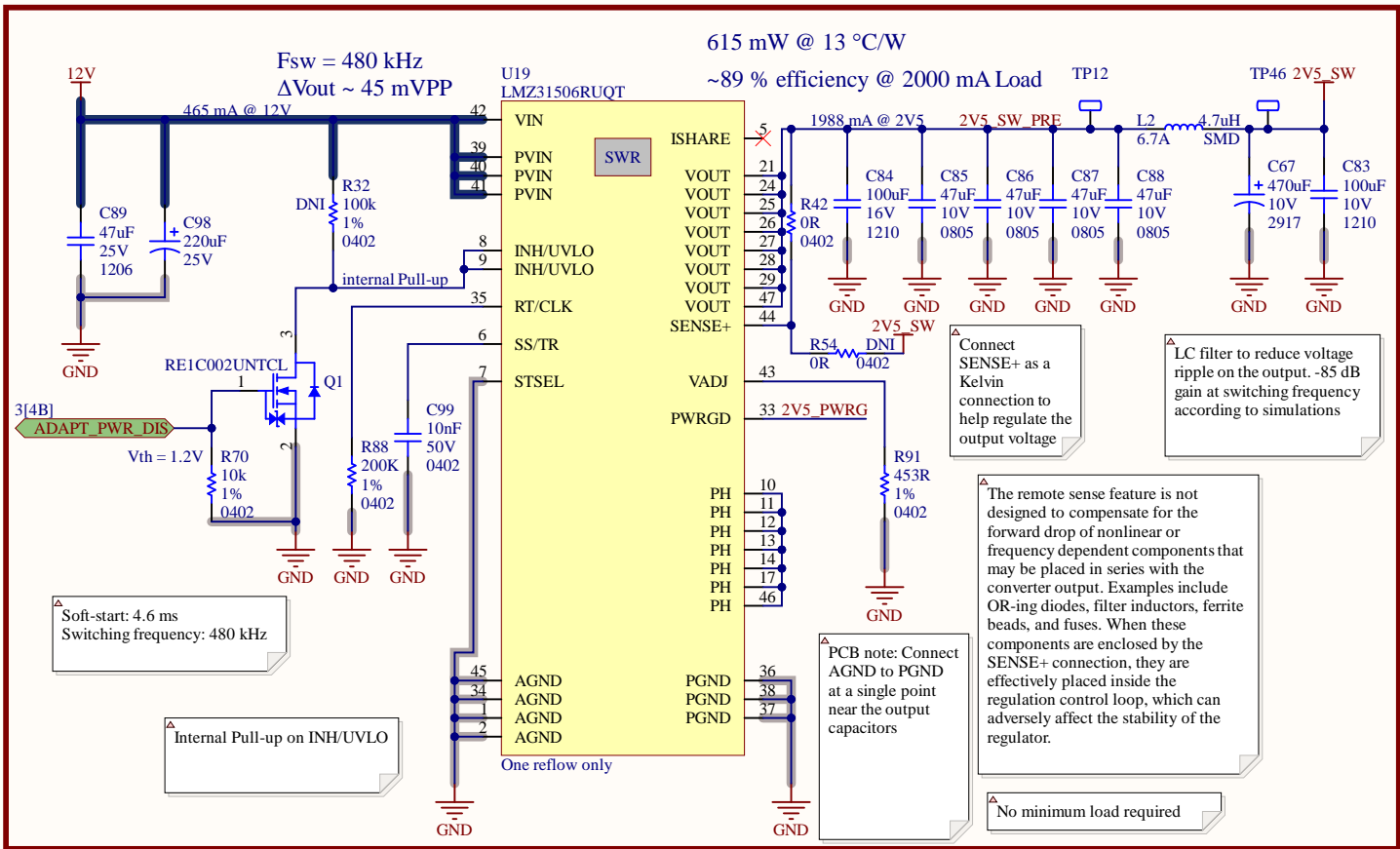
Debug connector



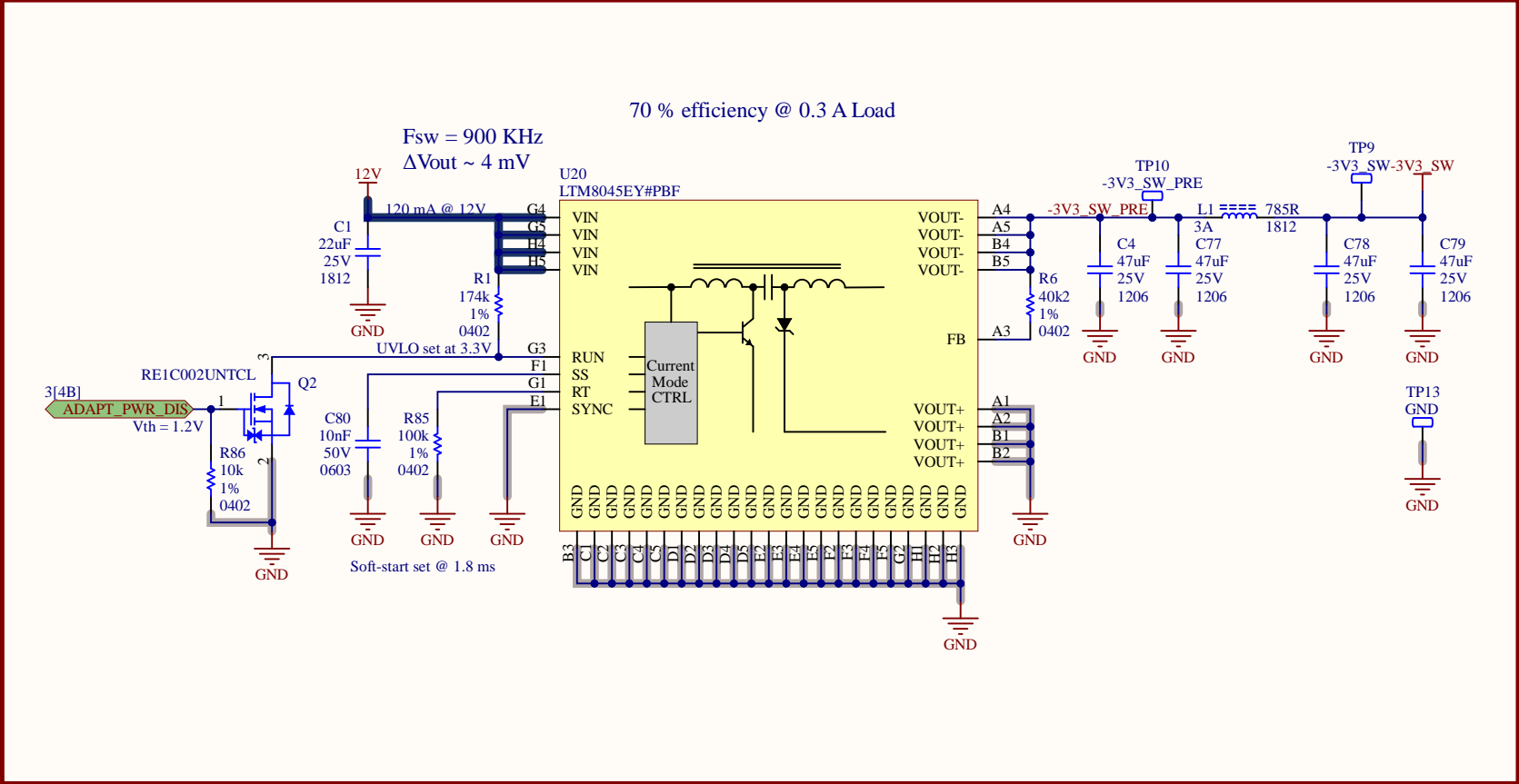
0-5V digital INPUT on J22 and J24
0-1V8 digital OUTPUT on J23 and J25

Sheet Name			Head connectors		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision PCB	SCH 1 . 00
Date	2022-04-12			Sheet	4 of 12
Filename	ICWSHLP2_Adaptor_2x2_Connectors.SchDoc			Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte

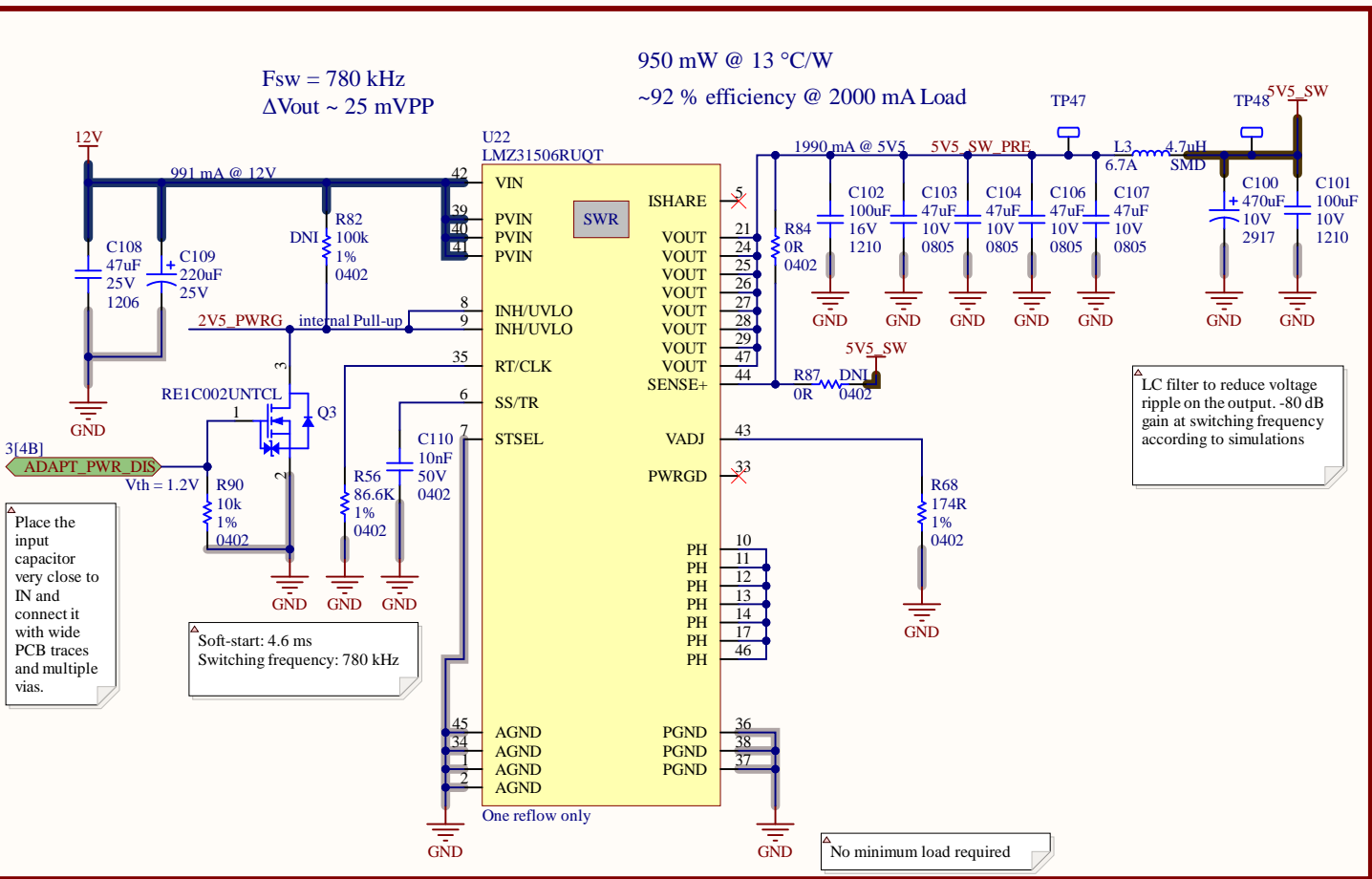
+2V5 Switching / Pre-LDO



-3.3V Switching / Pre-LDO

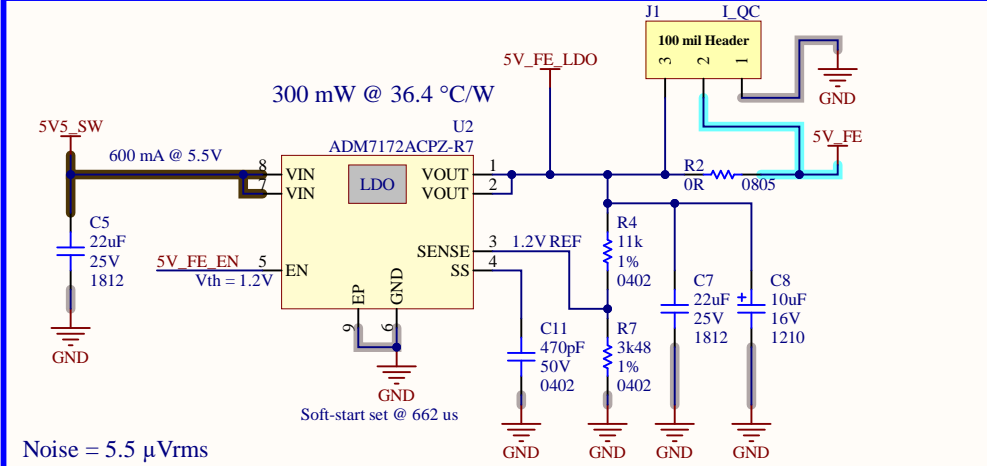


+5V5 Switching / Pre-LDO

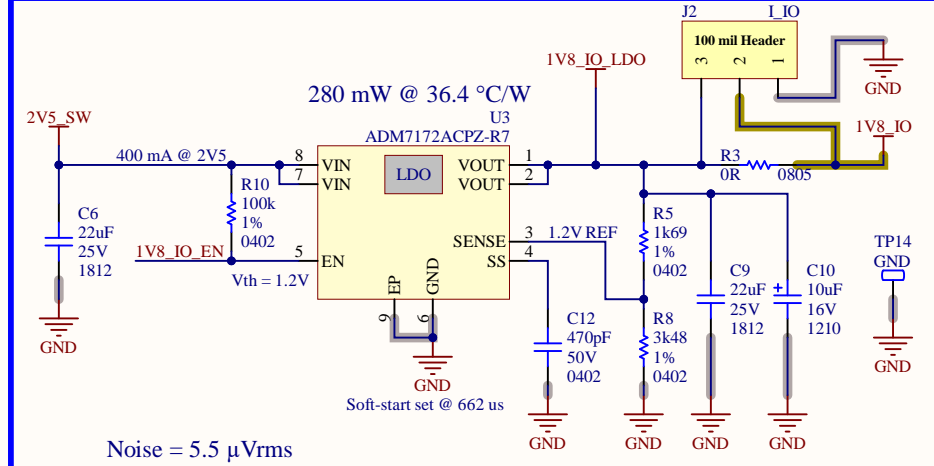


Sheet Name			PreRegulators		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision PCB	SCH 1.00
Date	2022-04-12			Sheet	5 of 12
Filename	ICWSHLP2_Adaptor_2x2_Power_PreRegSchDoc			Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte

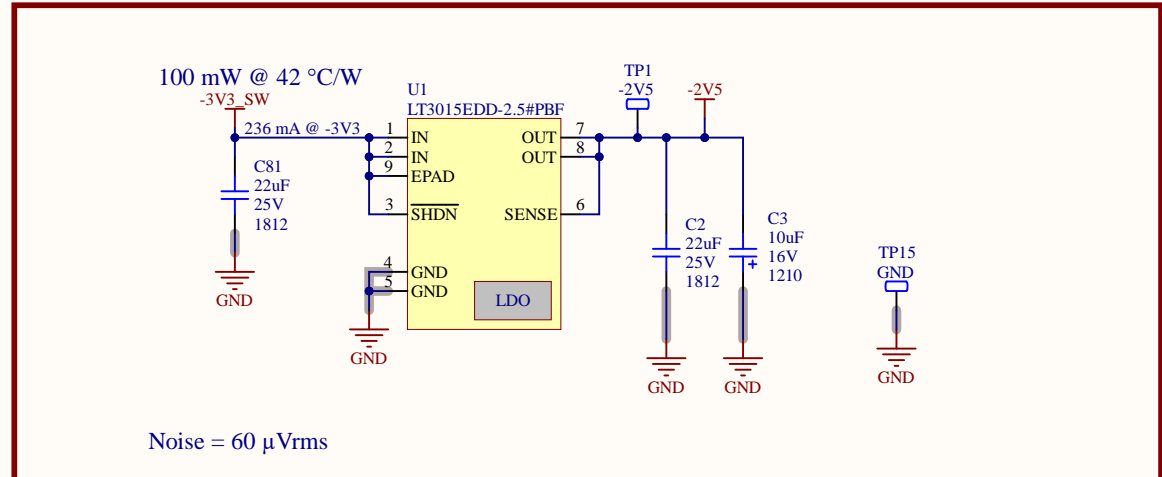
+5V FE LDO (ASIC)



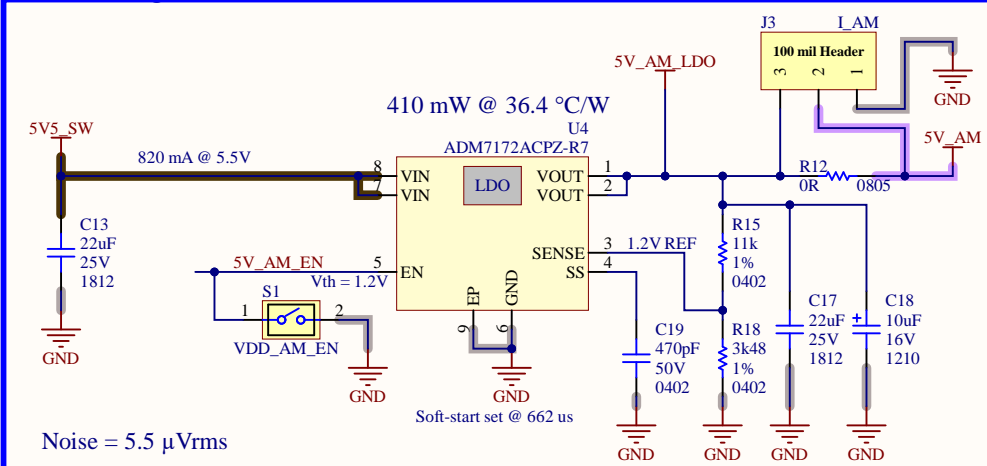
+1.8V IO LDO (ASIC)



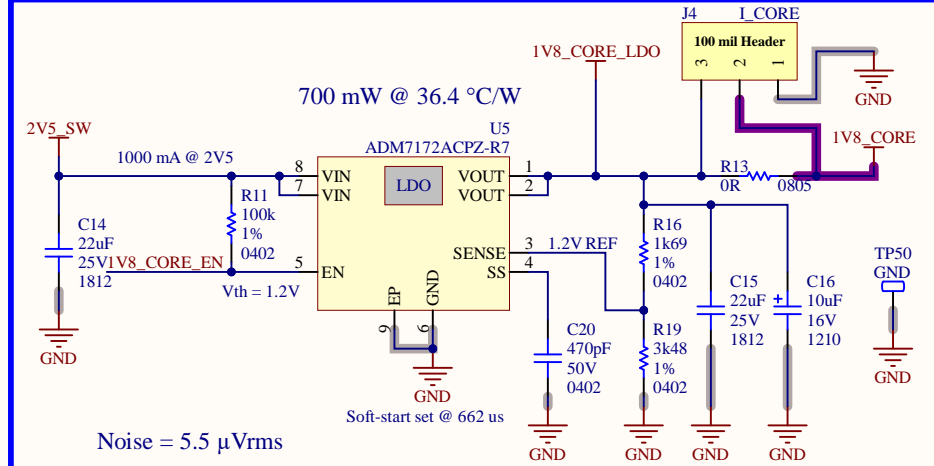
-2.5V LDO



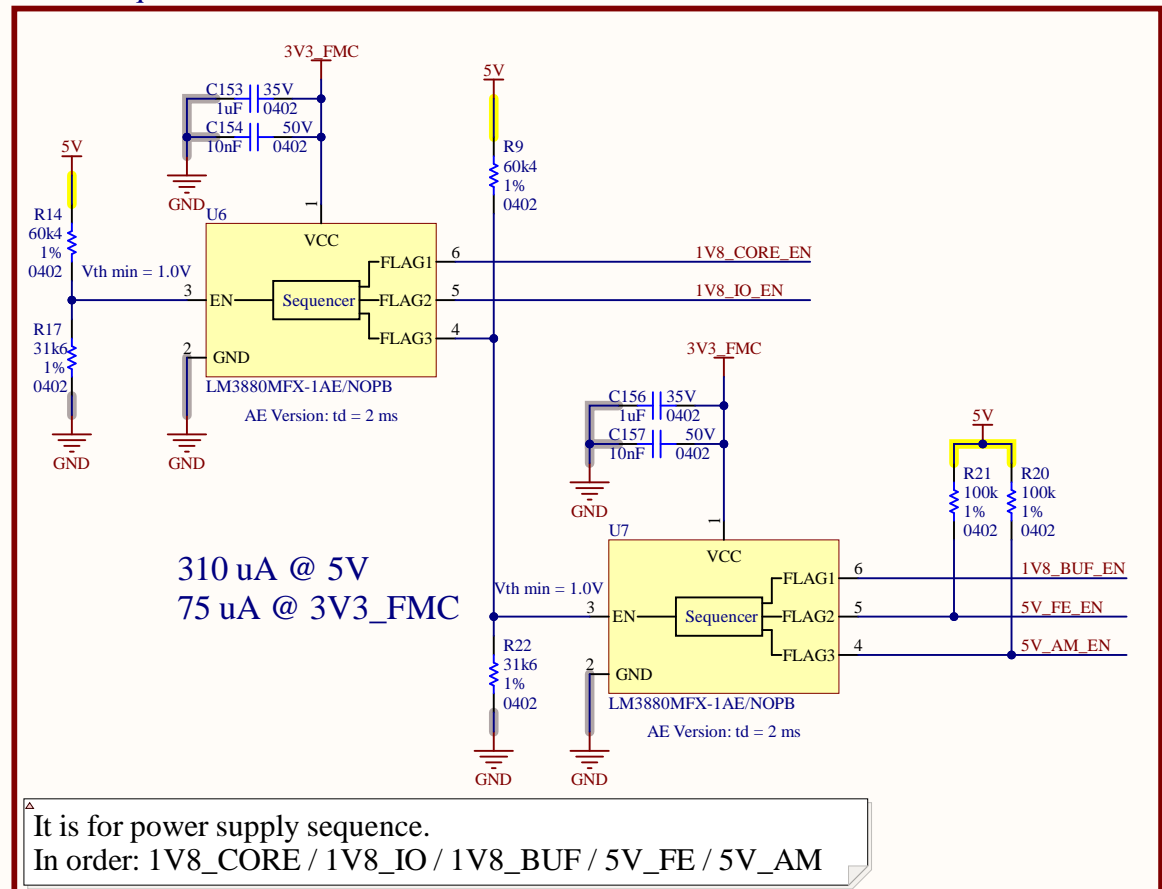
+5V Analog Monitor LDO (ASIC)



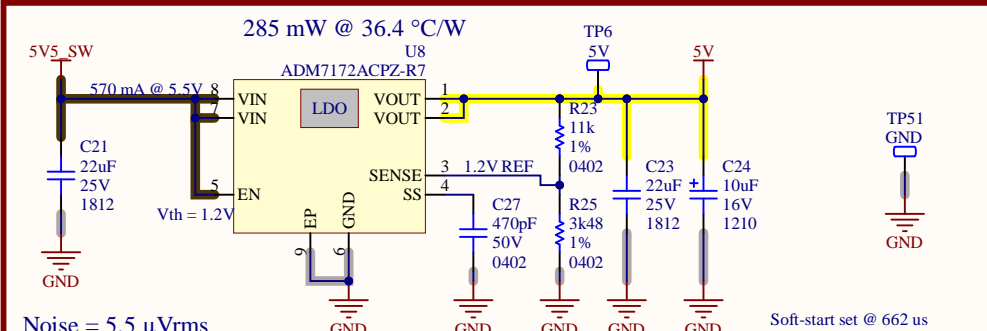
+1.8V CORE LDO (ASIC)



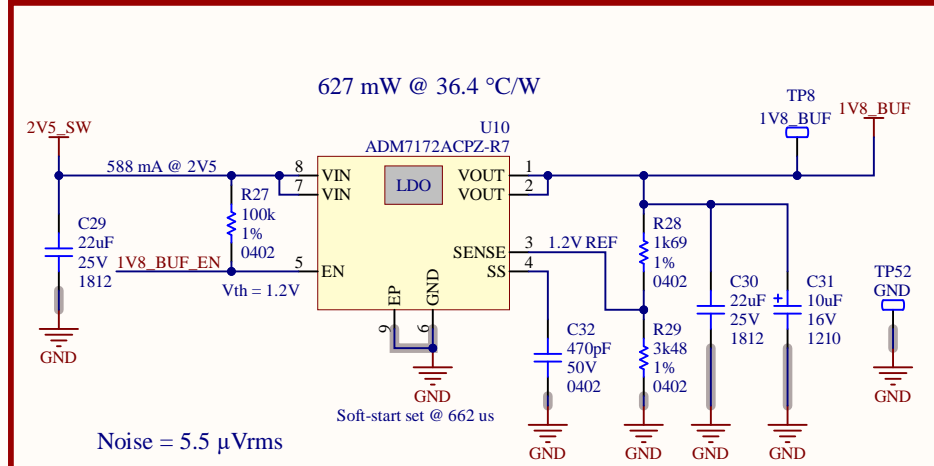
Power sequence for ASIC



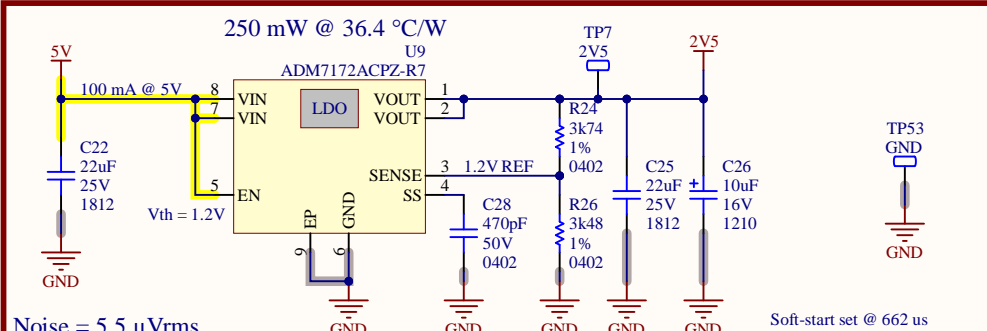
+5V LDO



+1.8V BUFFER LDO



+2.5V LDO



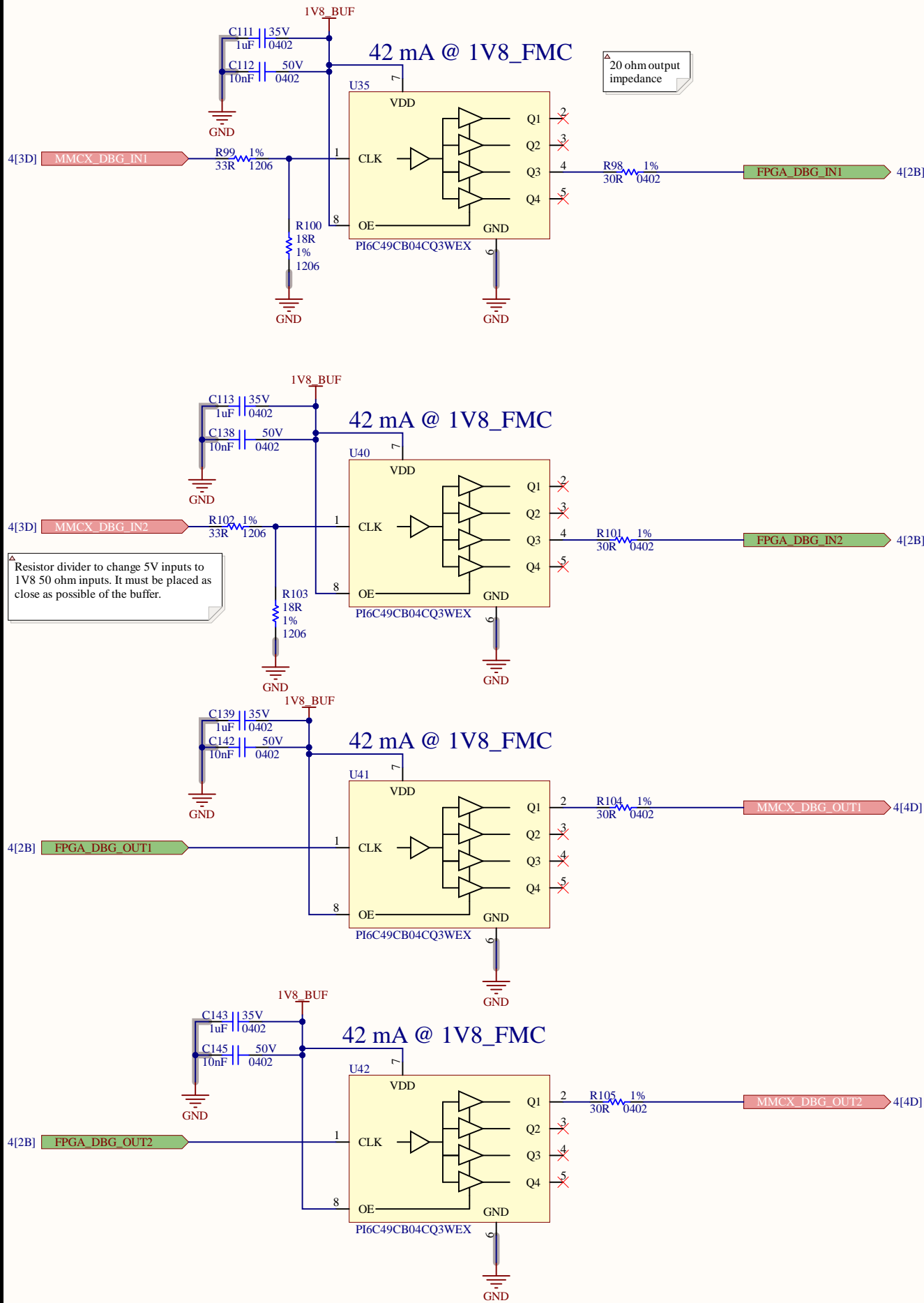
Place the input capacitor as close as possible to the VIN and GND pins. Place the output capacitor as close as possible to the VOUT and GND pins.

Power Consumption

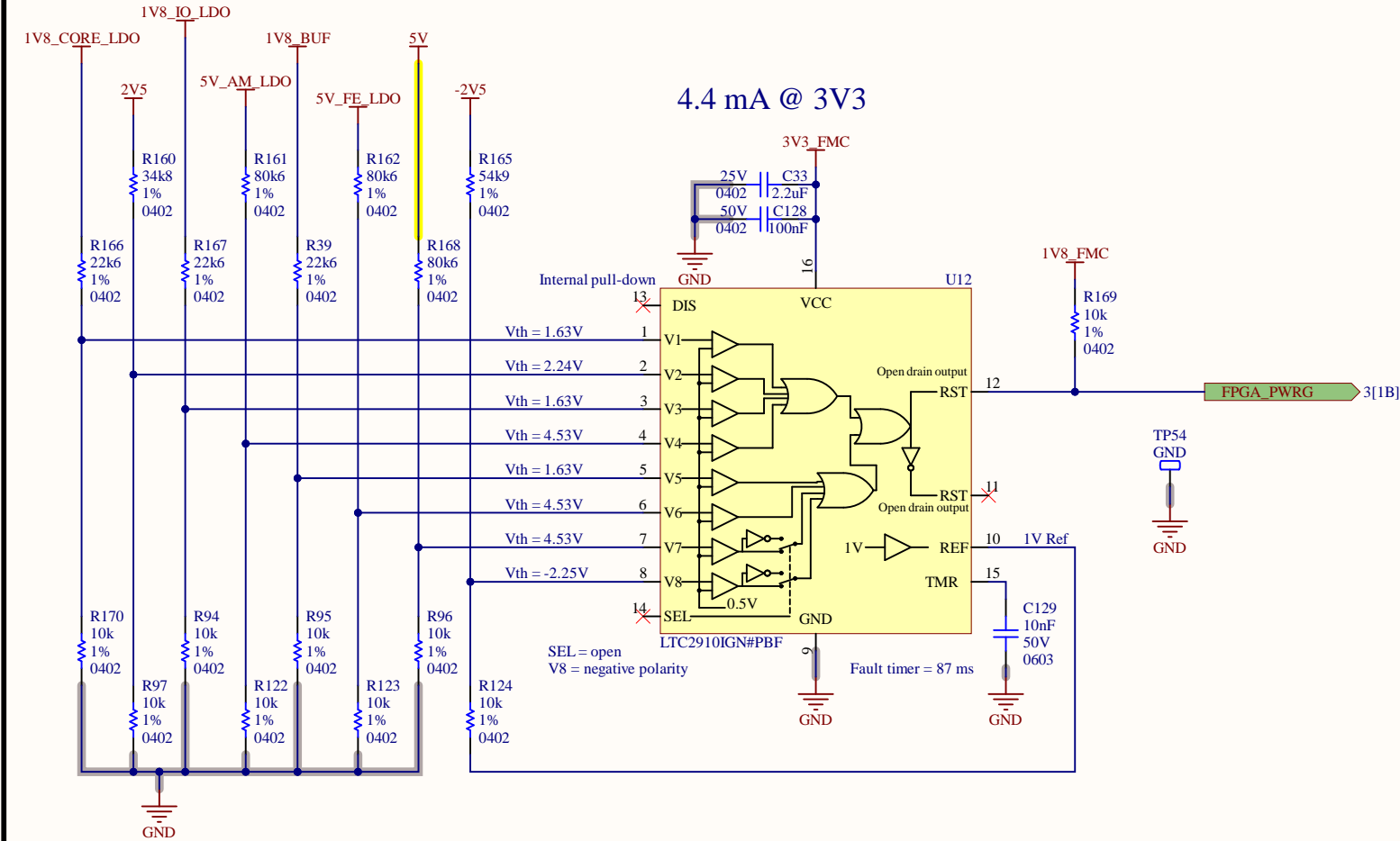
570 mA @ 5V
820 mA @ 5V_AM
600 mA @ 5V_FE
100 mA @ 2V5
236 mA @ -2V5
896 mA @ 1V8_BUF
400 mA @ 1V8_IO
1000 mA @ 1V8_CORE

Sheet Name			Power		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision PCB	SCH 1.00
Date	2022-04-12			Sheet	6 of 12
Filename	ICWSHLP2_Adaptor_2x2_Power.SchDoc			Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte

MMCX DEBUG



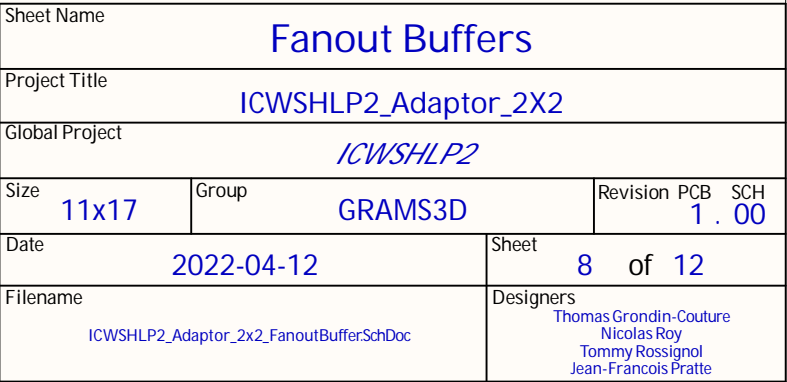
Voltage supervisor



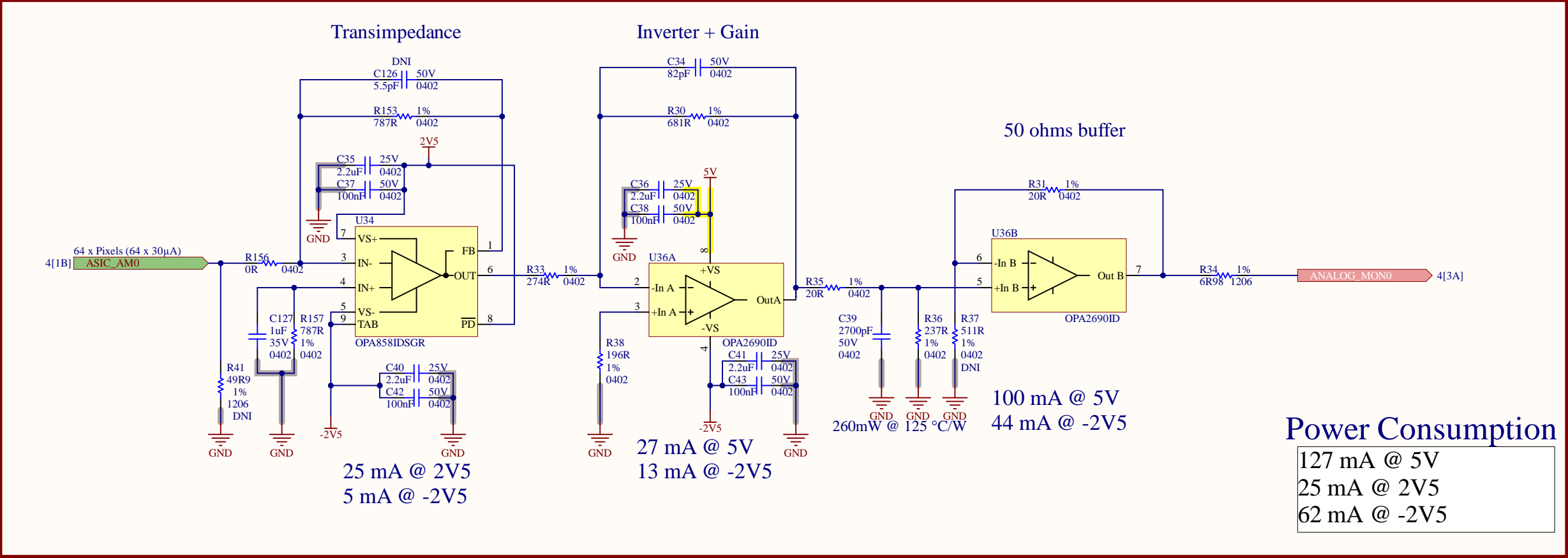
Power Consumption

168 mA @ 1V8_FMC
4.4 mA @ 3V3

Sheet Name Voltage Supervisor and isolated IO			
Project Title ICWSHLP2_Adaptor_2X2			
Global Project ICWSHLP2			
Size 11x17	Group GRAMS3D	Revision PCB SCH 1 . 00	
Date 2022-04-12		Sheet 7 of 12	
Filename ICWSHLP2_Adaptor_2x2_Voltage_supervisor.SchDoc		Designers Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte	

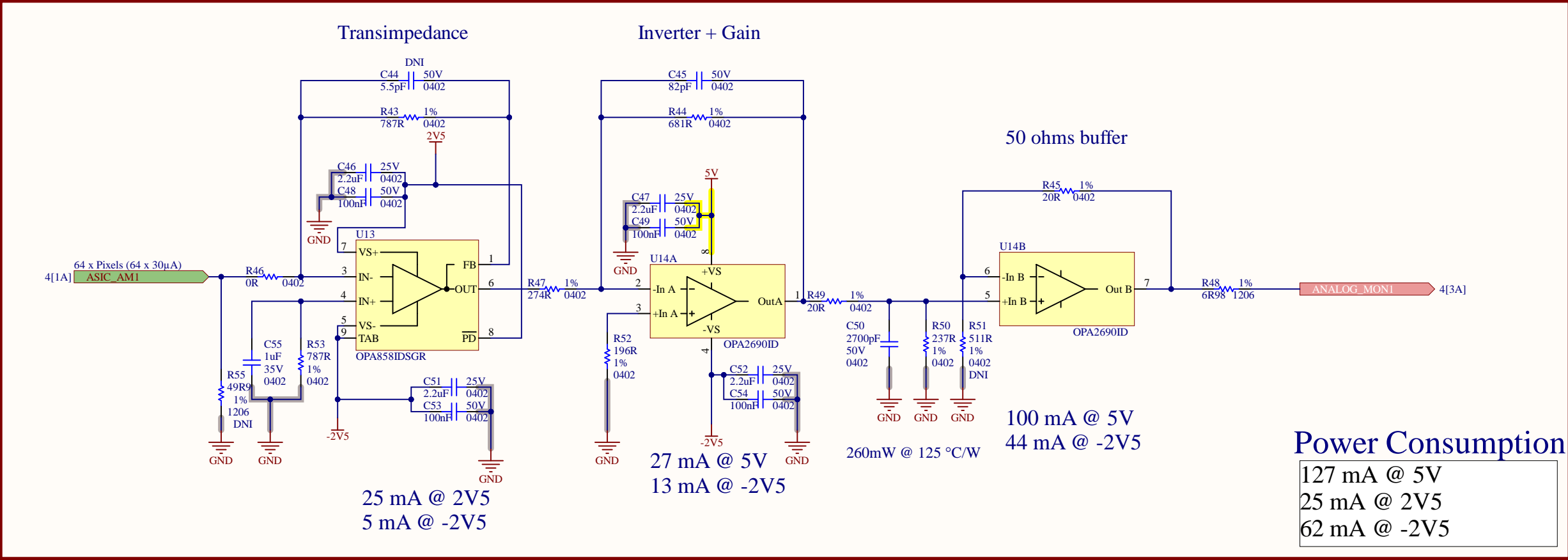


Analog Monitor Transimpedance (ASIC0), 0-3.3V out, 64 Pixels



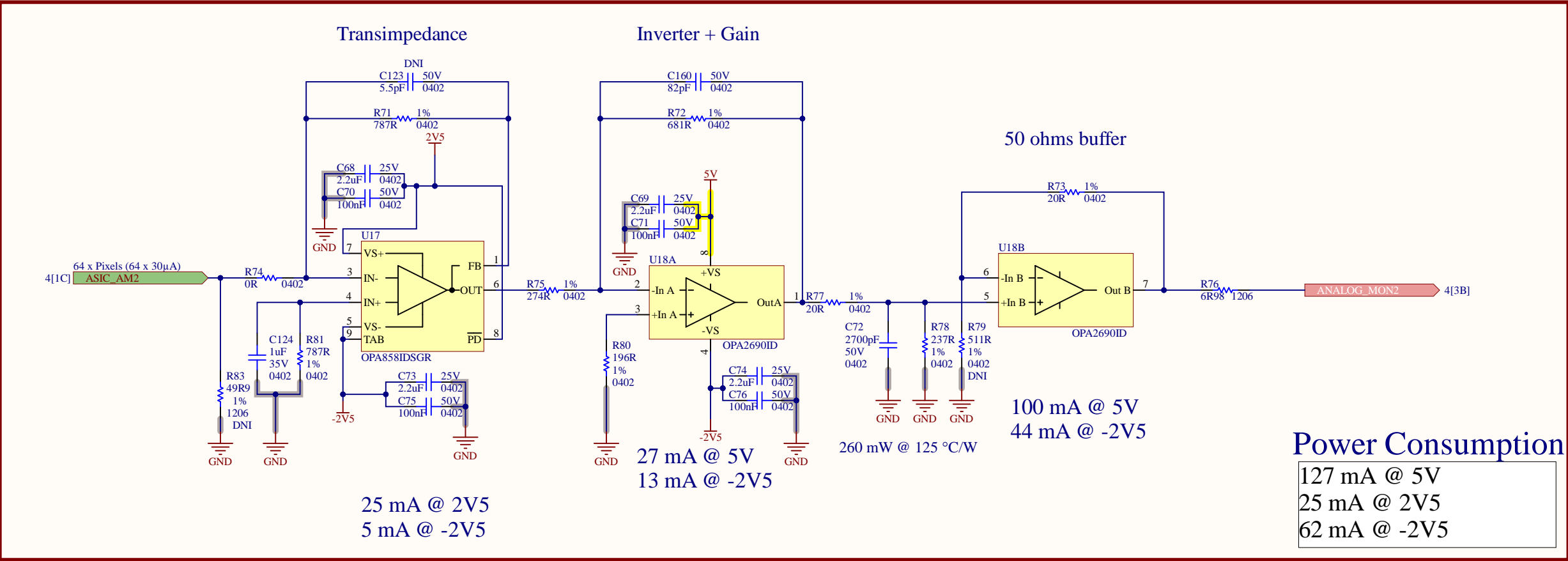
Sheet Name			Transimpedance ASIC1		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision	PCB SCH 1 . 00
Date				Sheet	
2022-04-12				9 of 12	
Filename				Designers	
ICWSHLP2_Adaptor_2x2_Transimpedance_ASIC0SchDoc				Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte	

Analog Monitor Transimpedance (ASIC1), 0-3.3V out, 64 Pixels



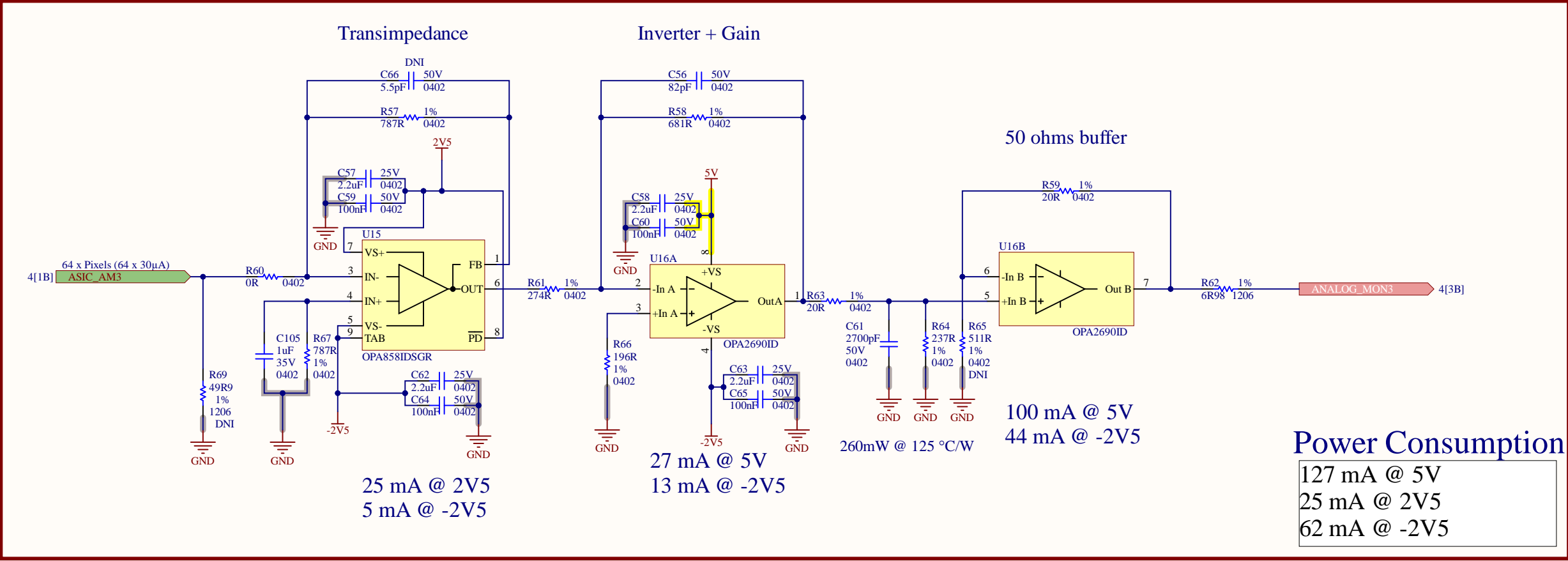
Sheet Name			Transimpedance ASIC0		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision	PCB SCH 1 . 00
Date	2022-04-12			Sheet	10 of 12
Filename	ICWSHLP2_Adaptor_2x2_Transimpedance_ASIC1.SchDoc			Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte

Analog Monitor Transimpedance (ASIC2), 0-3.3V out, 64 Pixels



Sheet Name			Transimpedance ASIC3		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision	PCB SCH 1 . 00
Date	2022-04-12			Sheet	11 of 12
Filename	ICWSHLP2_Adaptor_2x2_Transimpedance_ASIC2SchDoc			Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte

Analog Monitor Transimpedance (ASIC3), 0-3.3V out, 64 Pixels



Sheet Name			Transimpedance ASIC2		
Project Title			ICWSHLP2_Adaptor_2X2		
Global Project			ICWSHLP2		
Size	11x17	Group	GRAMS3D	Revision	PCB SCH 1 . 00
Date	2022-04-12			Sheet	12 of 12
Filename	ICWSHLP2_Adaptor_2x2_Transimpedance_ASIC3SchDoc			Designers	Thomas Grondin-Couture Nicolas Roy Tommy Rossignol Jean-Francois Pratte