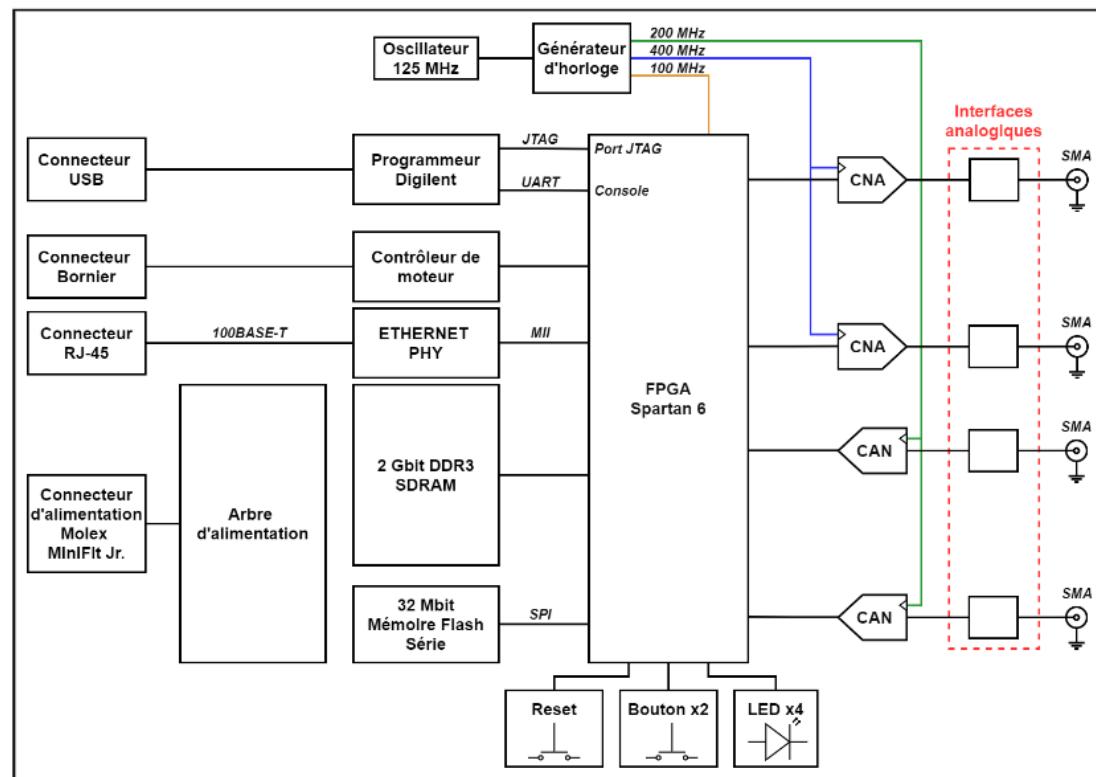


PLEIADES

LACP3102 - Pascal-Emmanuel Lachance
BILF0901 - Frédéric Bilodeau



NOTES FOR REVIEWERS:

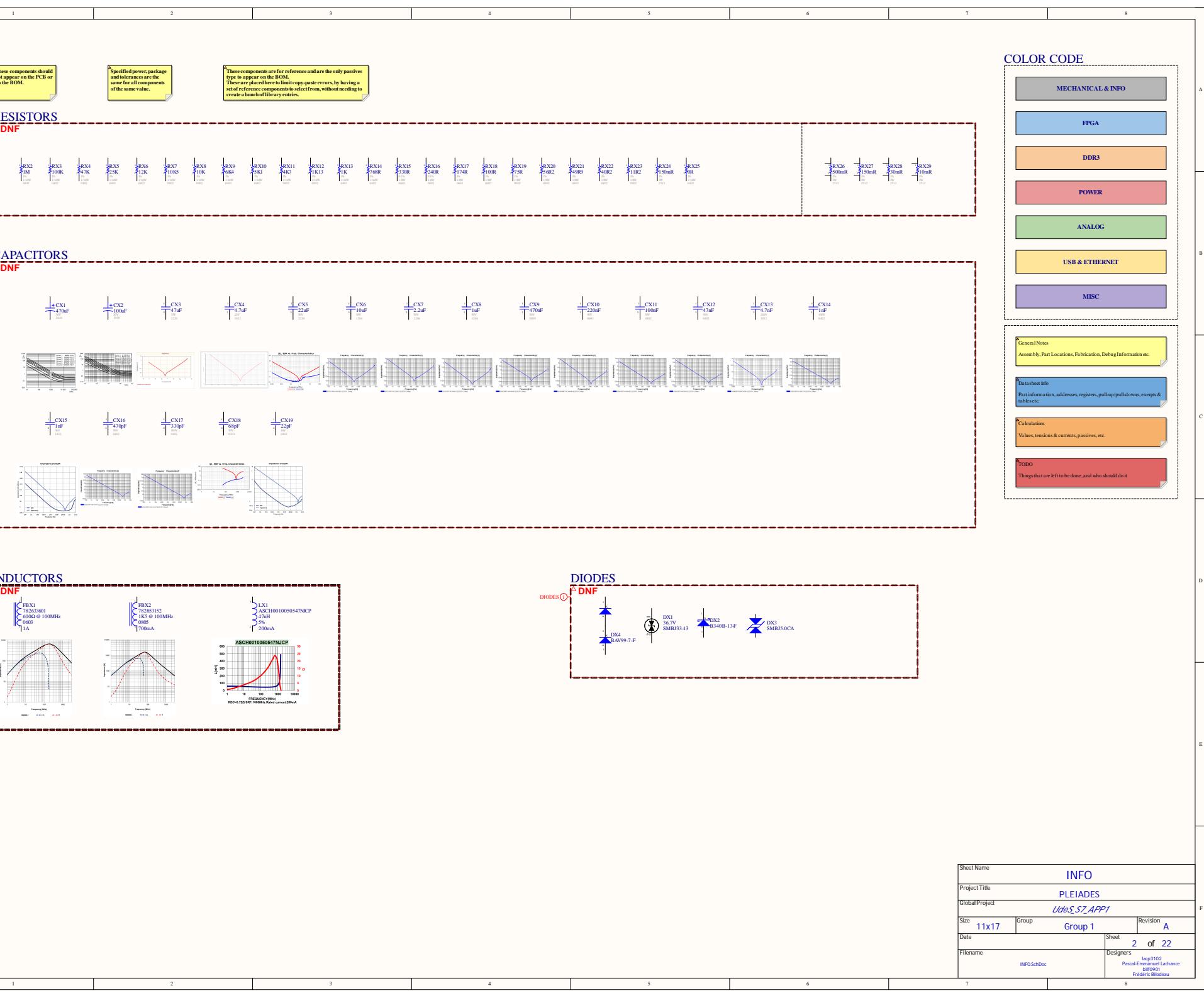
Some functionalities not originally asked by the problem have been added for fun and to challenge ourselves.

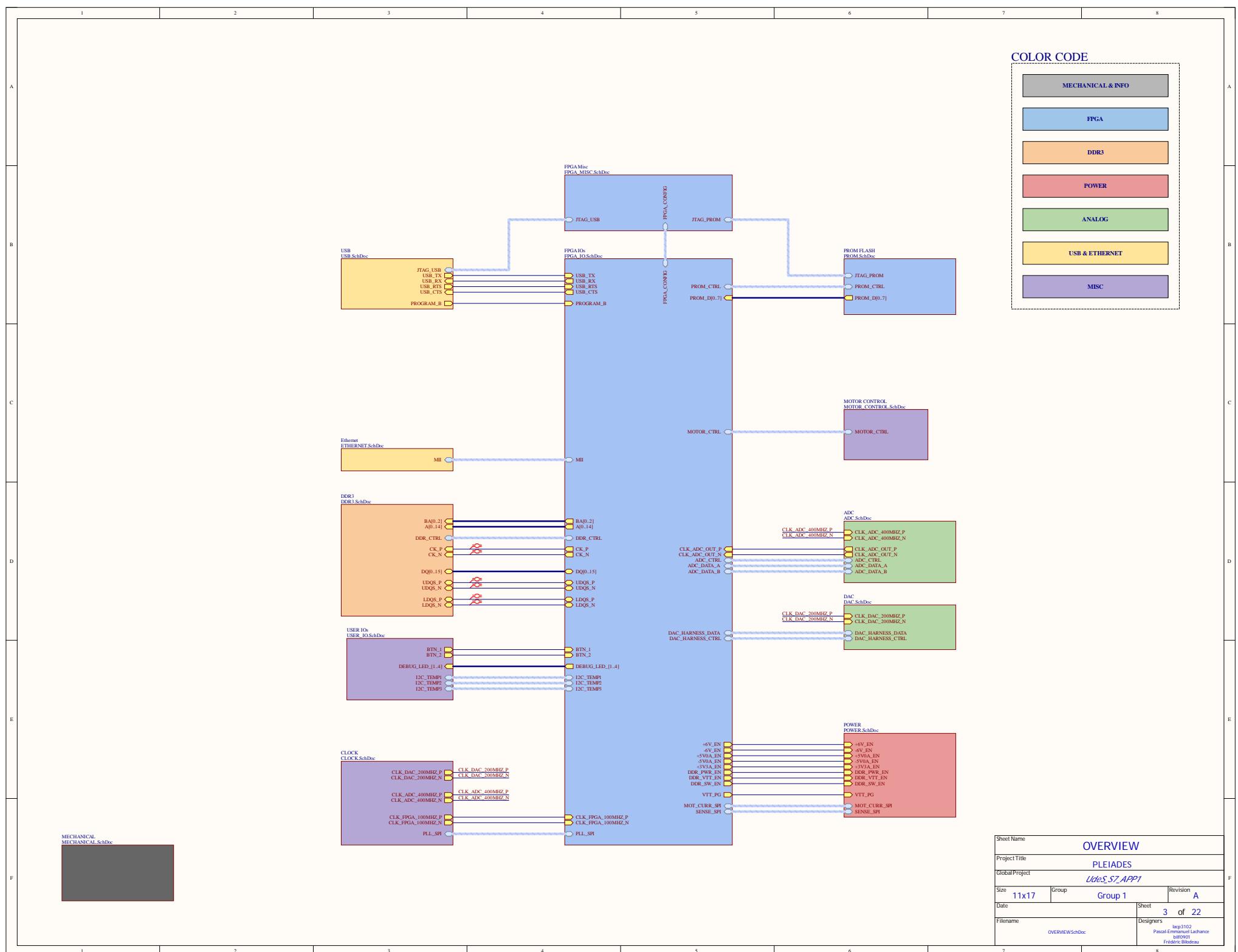
The following major changes have been done:

- Full Galvanic Isolation on 24V input and motor output
- Voltage and Current sensing on all major power rails
- A TAG-CONNECT programmation interface with JTAG source selection
- A USB-C connector
- A bunch of testpoints and debug features
- And more!

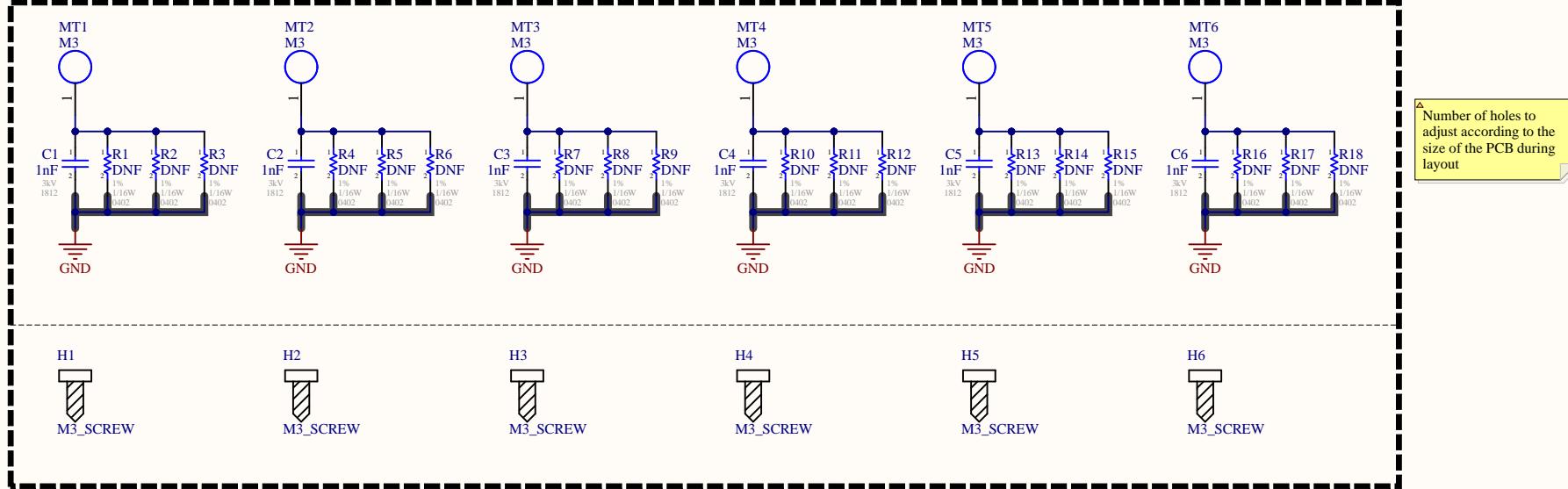
Note that a lot of resistors for patches have been added to strapping pins for configuration of all chips.

Sheet Name		TITLE PAGE	
Project Title		PLEIADES	
Global Project		<i>UdeS_S7_APP1</i>	
Size	Group	Group 1	Revision
11x17			A
Date	Sheet	1	of 22
Filename	TITLE.SchDoc		Designers
	Iacp3102 Pascal-Emmanuel Lachance bilf0901 Frédéric Bilodeau		

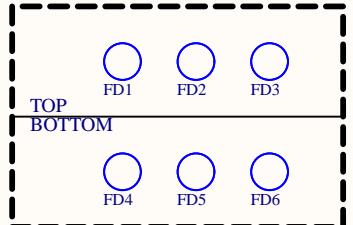




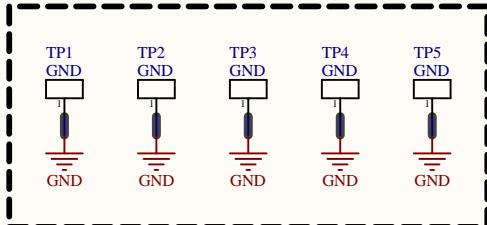
MOUNTING HOLES



FIDUCIALS



GND TESTPOINTS



Sheet Name

MECHANICAL

Project Title

PLEIADES

Global Project

UdeS_S7_APP1

Size

11x17

Group

Group 1

Revision

A

Date

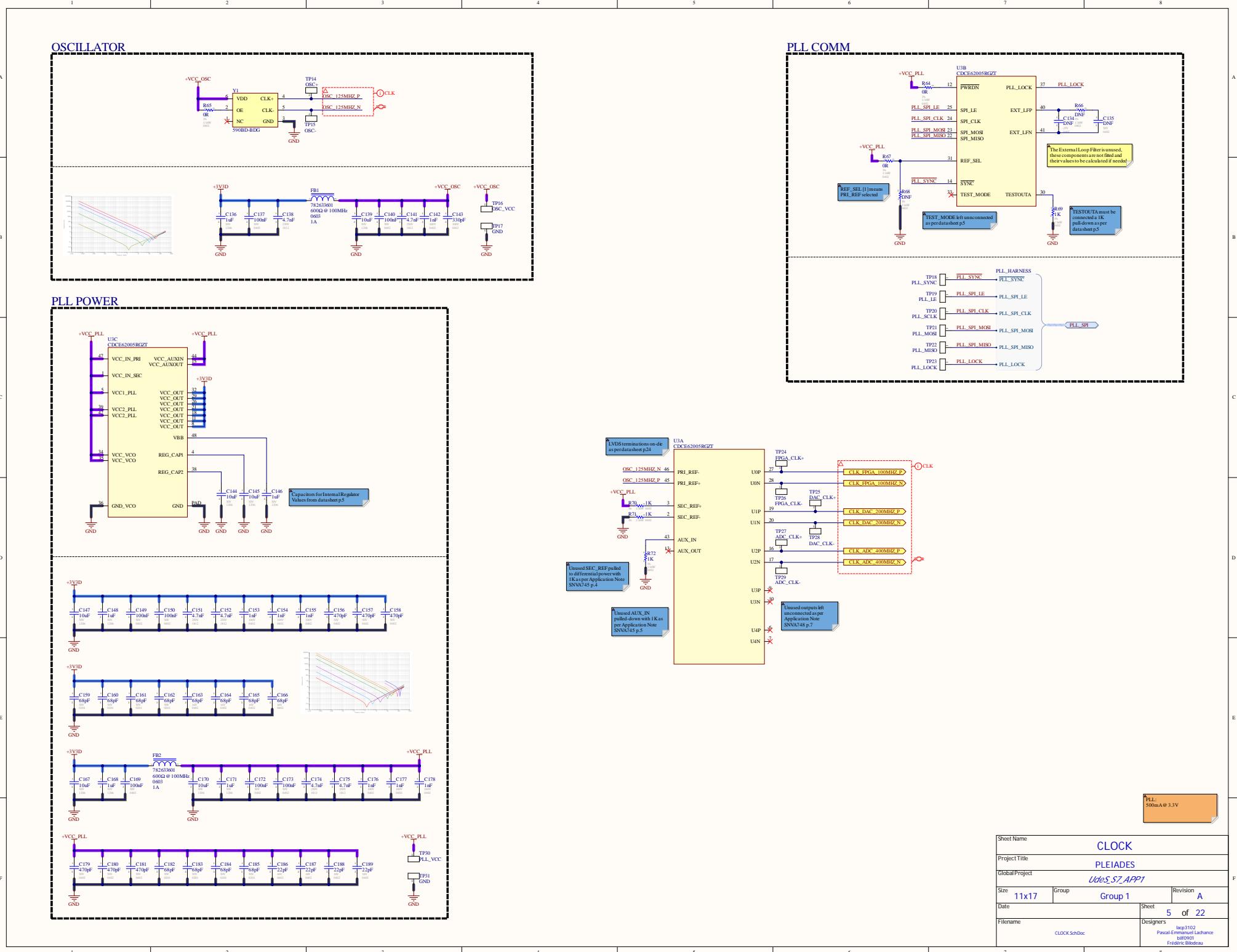
Sheet **4** of **22**

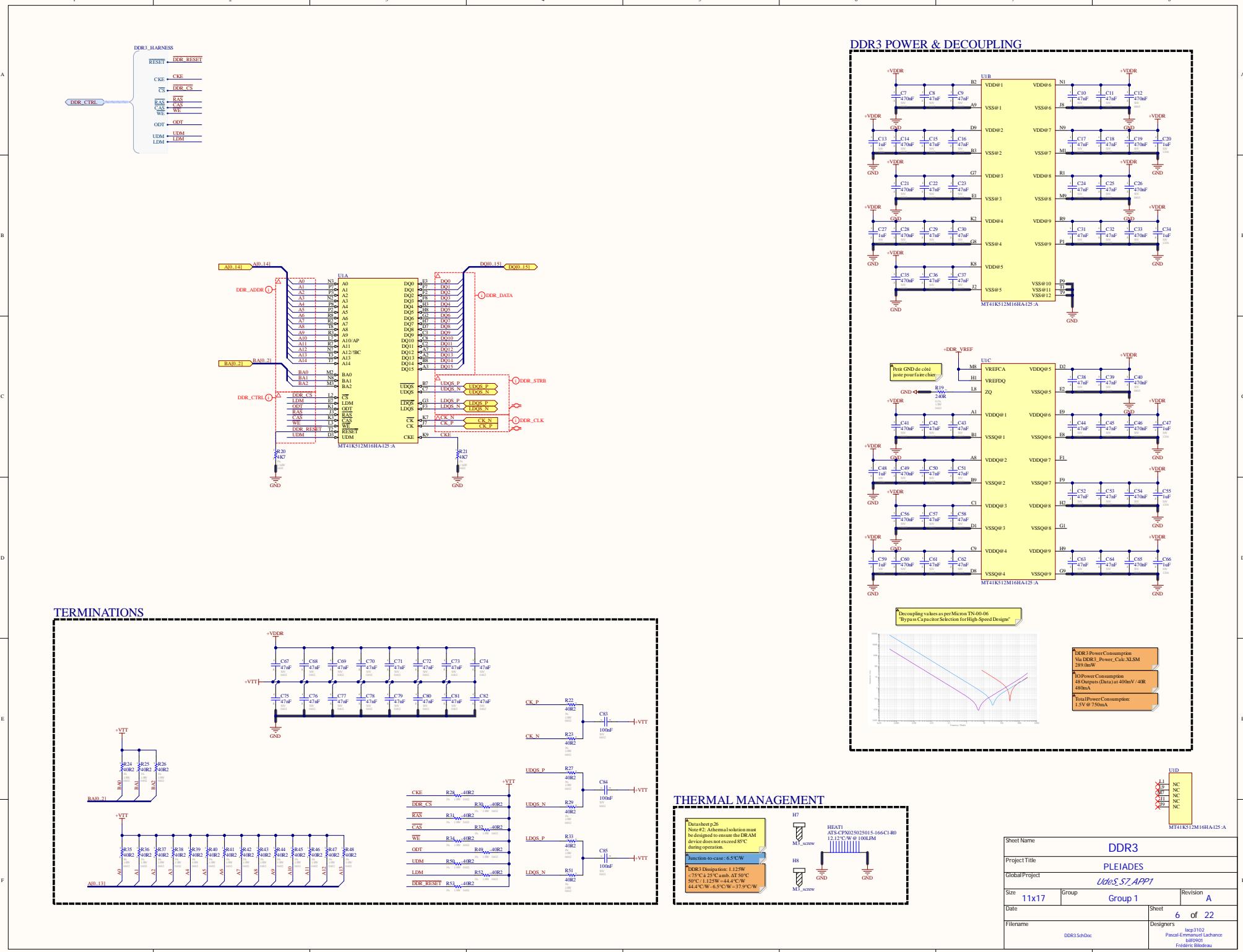
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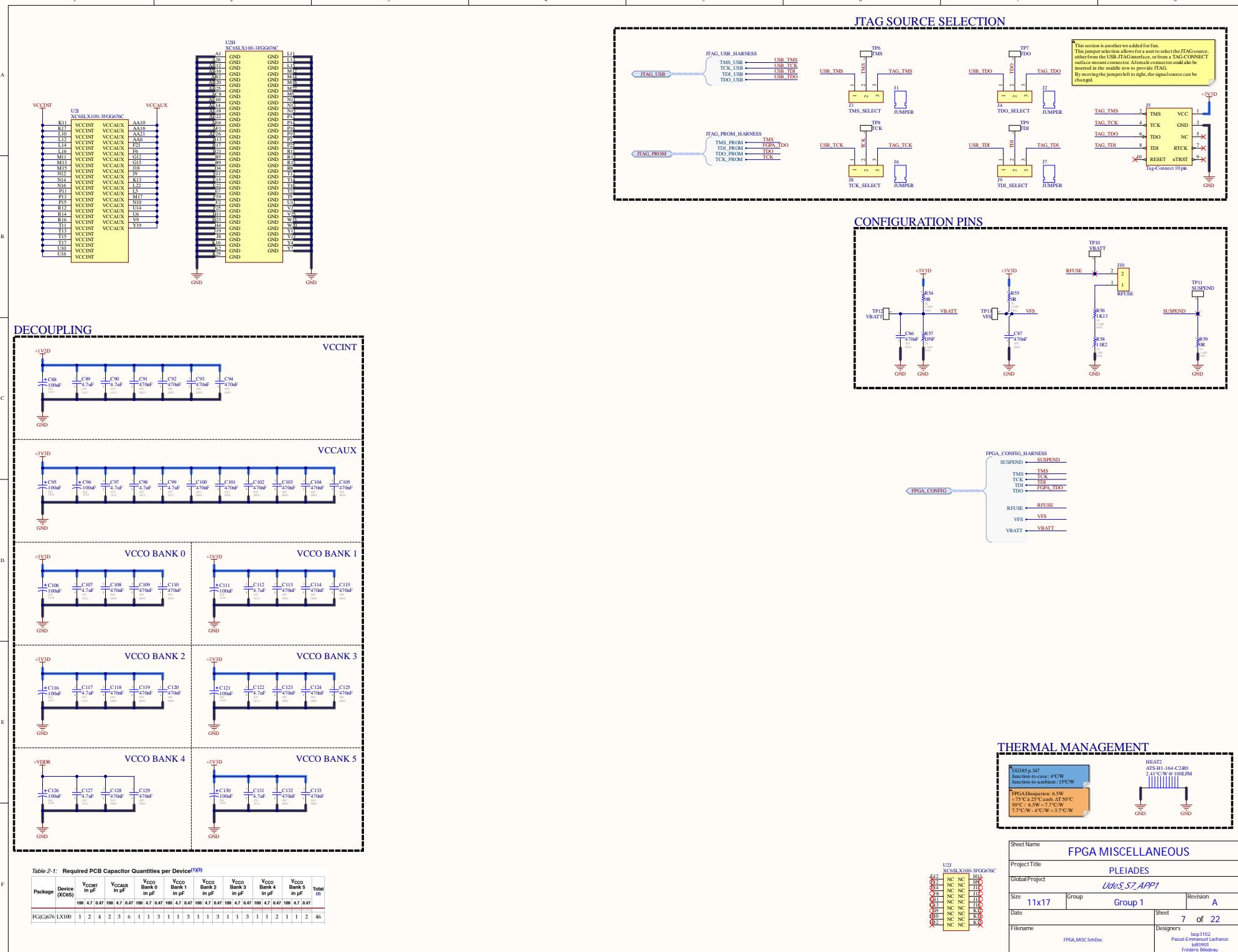
MECHANICAL.SchDoc

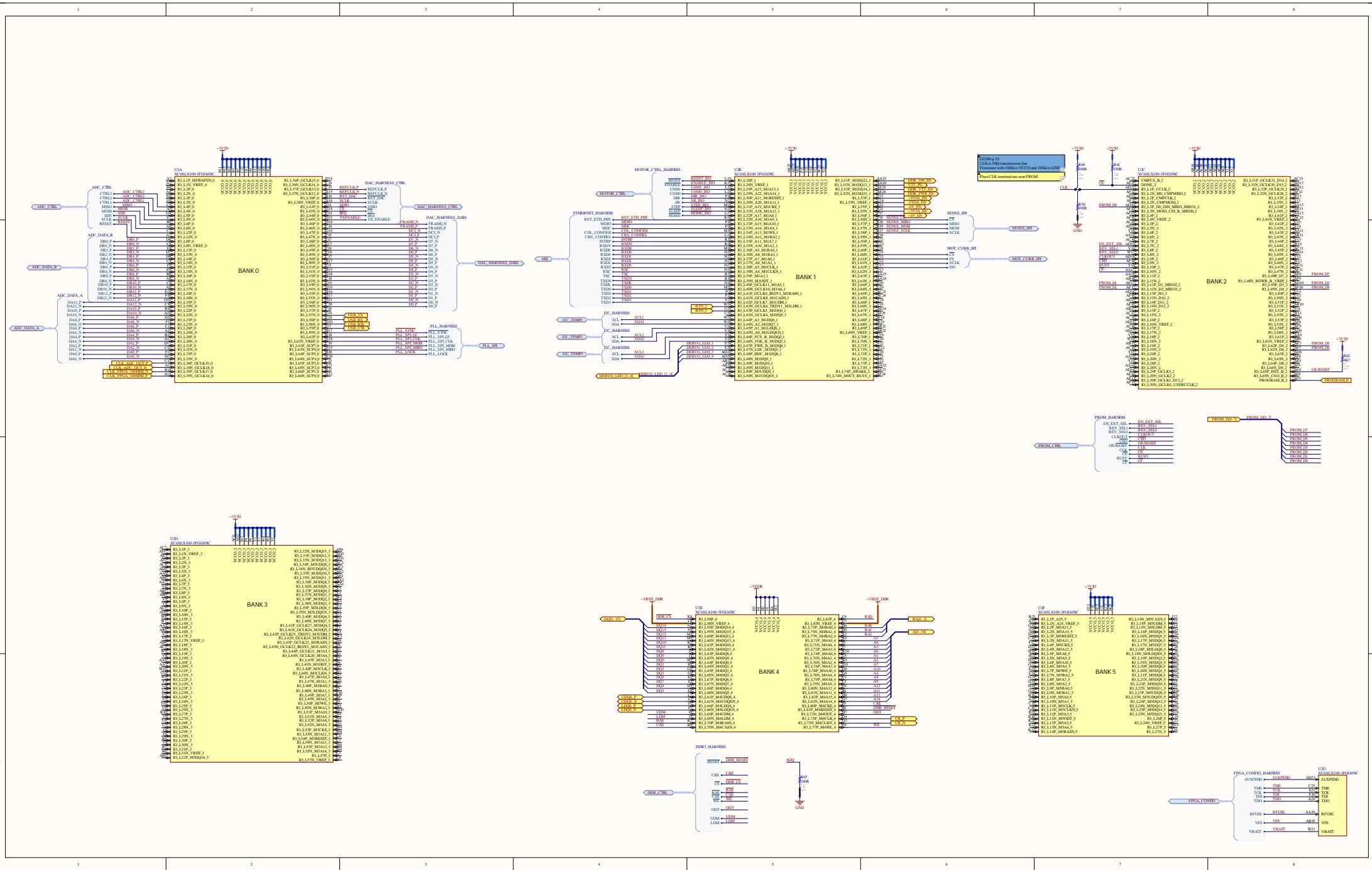
Designers

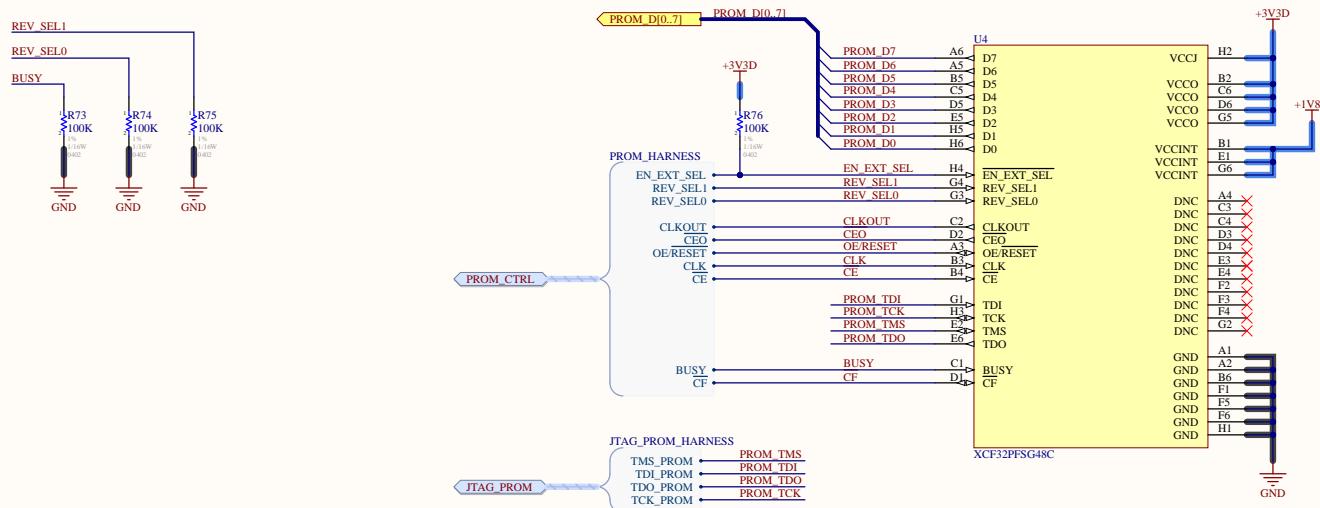
 lacp3102
 Pascal-Emmanuel Lachance
 bilf0901
 Frédéric Bilodeau



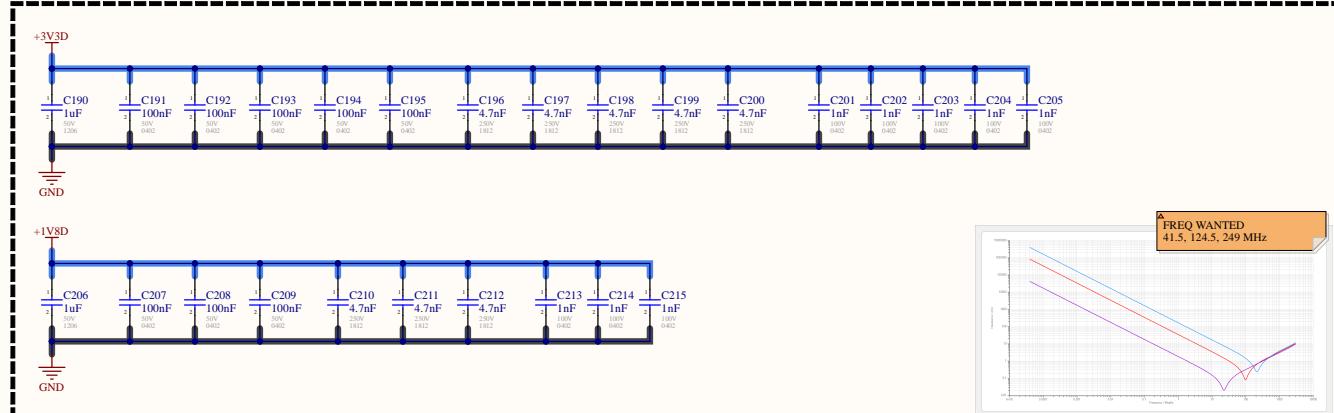






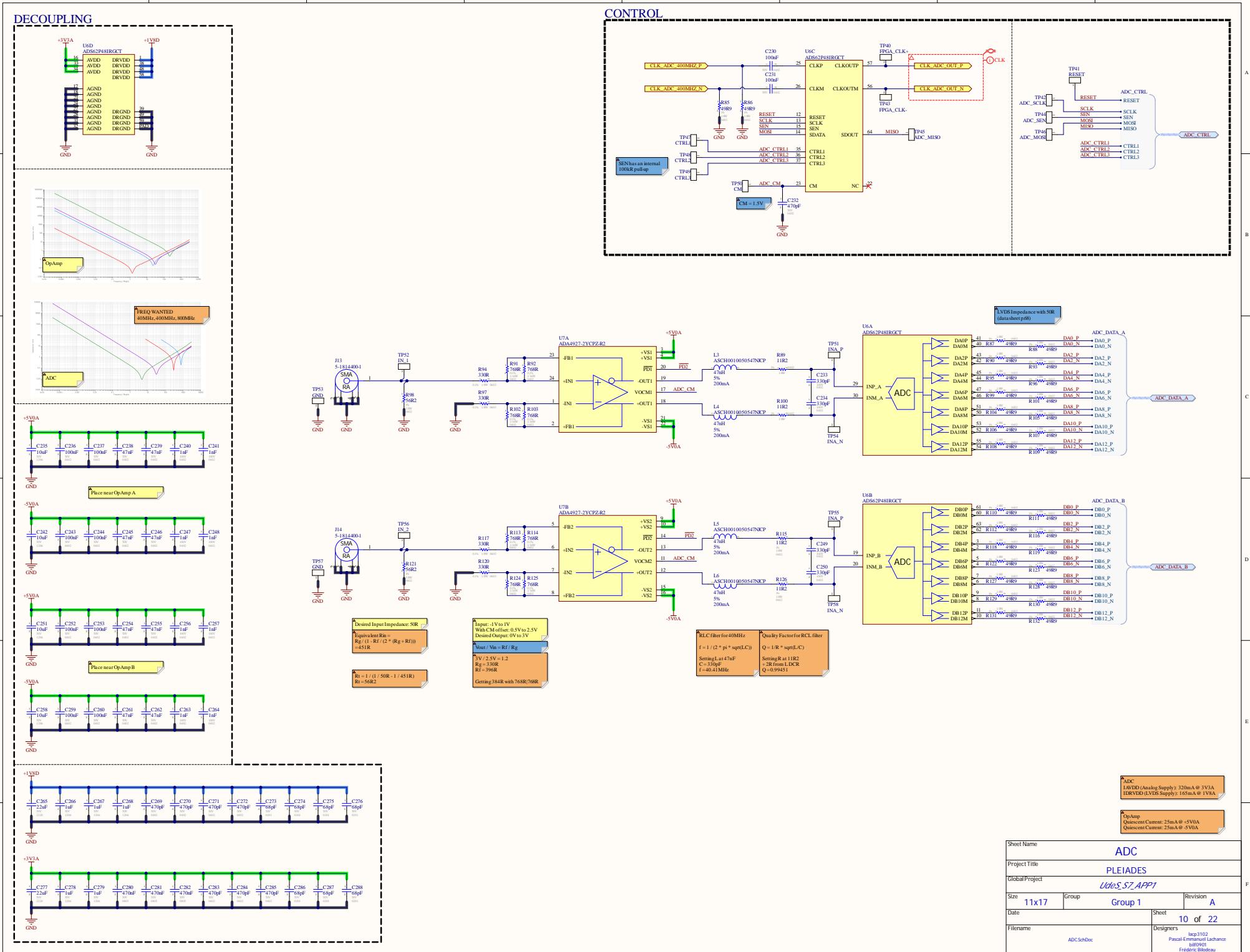


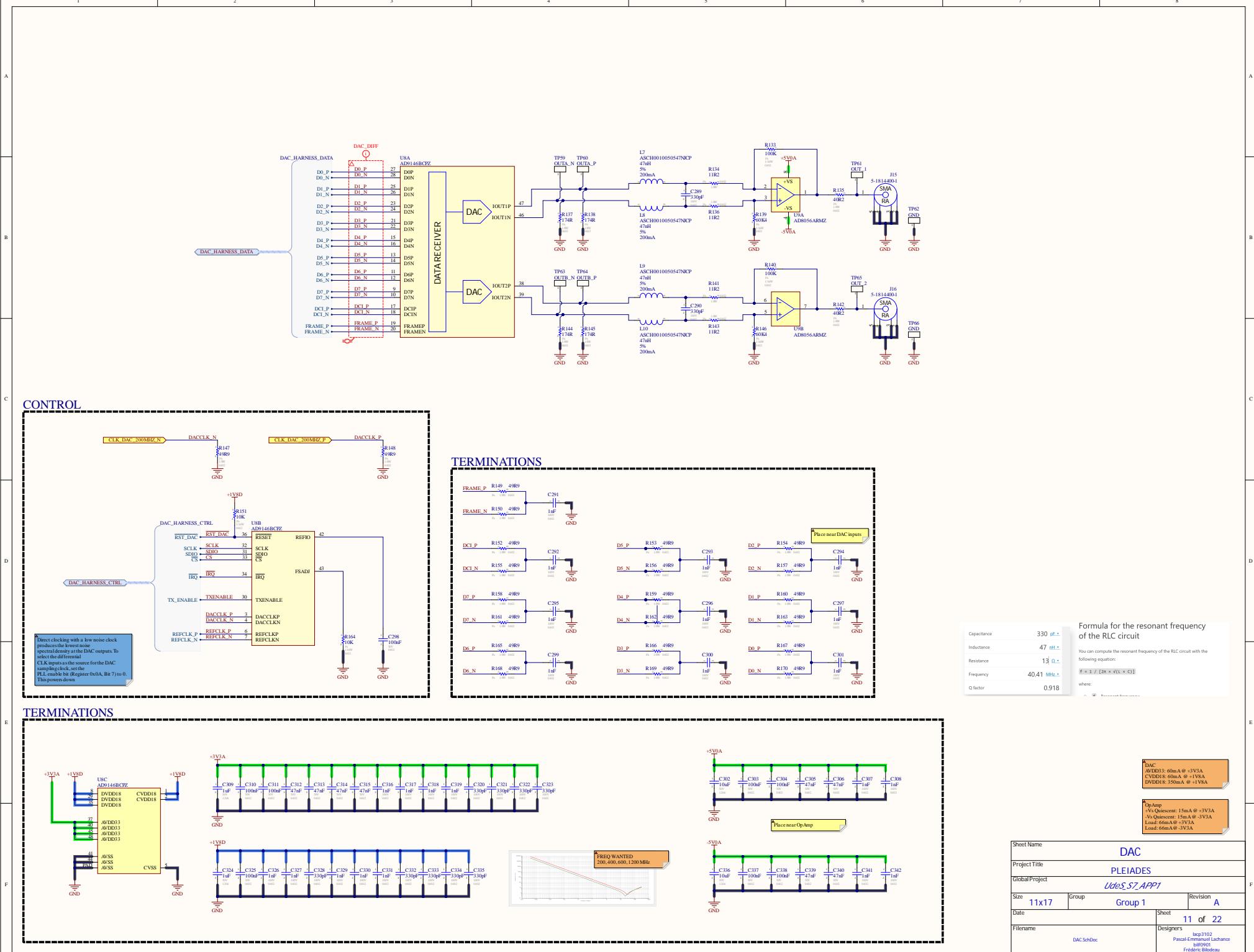
DECOUPLING

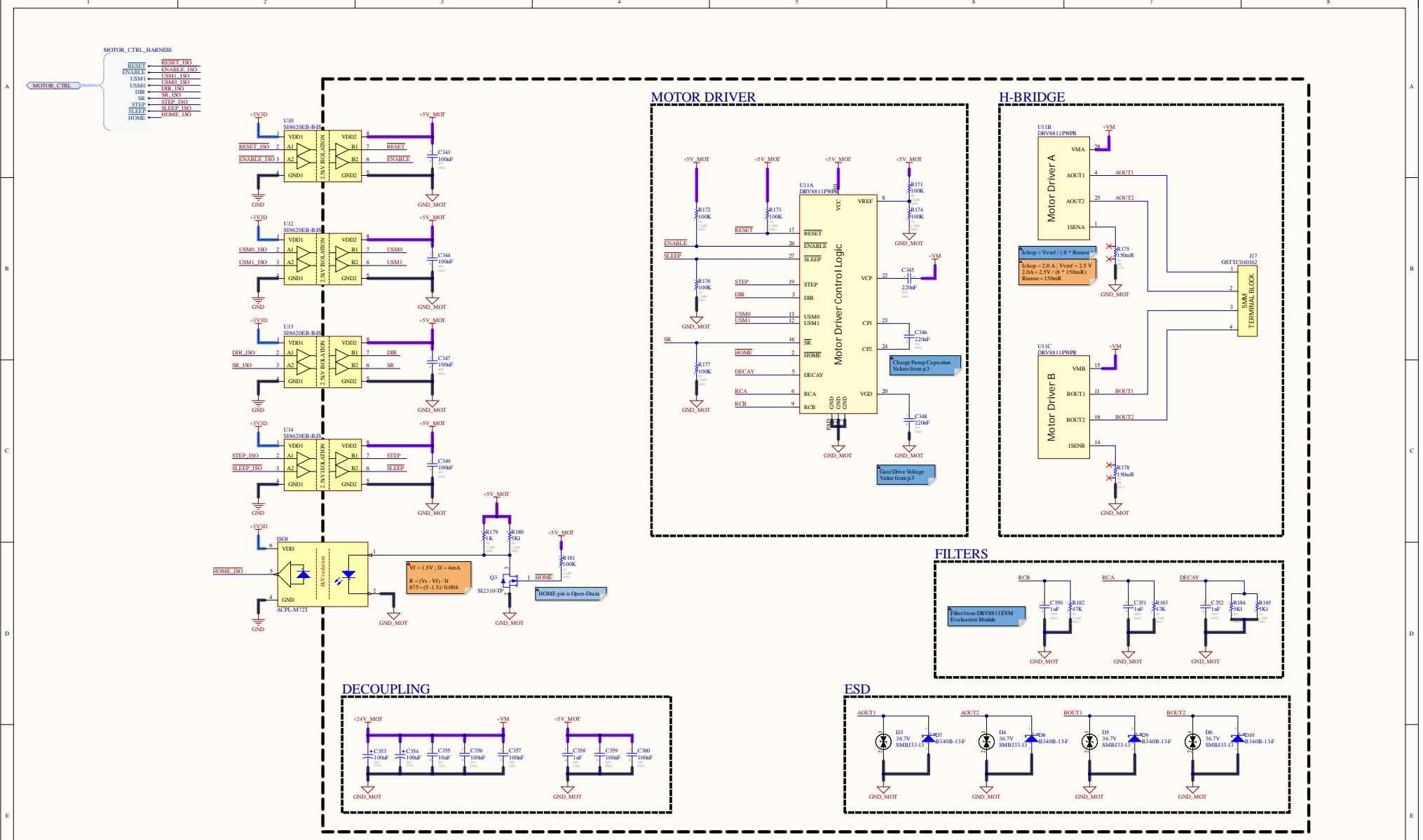


PROM
SPEED = 40Mhz
1V8 @ 10mA
3V3 @ 45mA

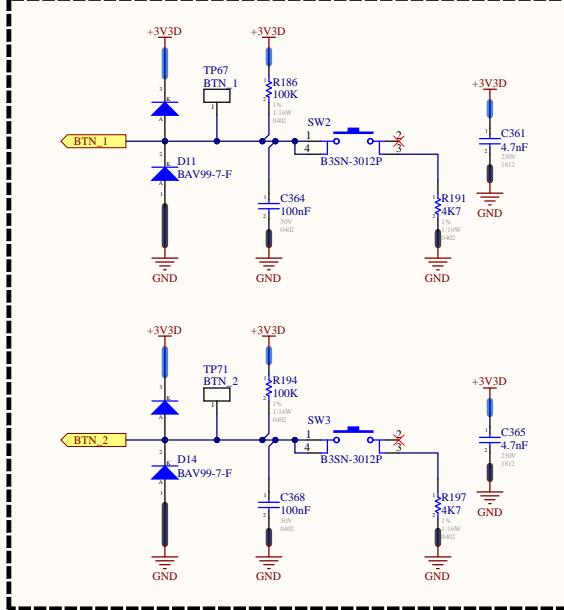
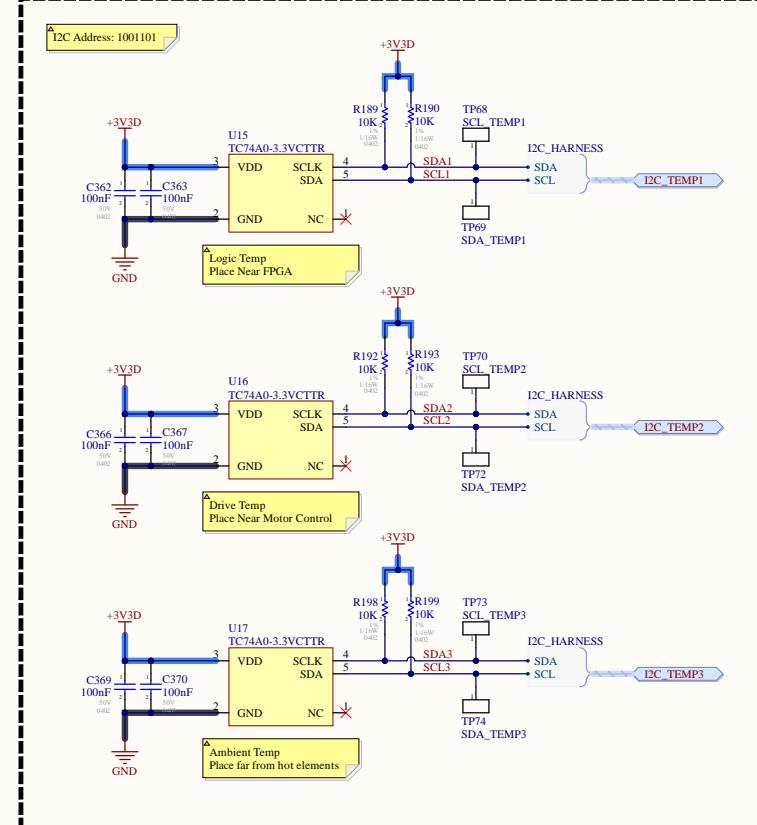
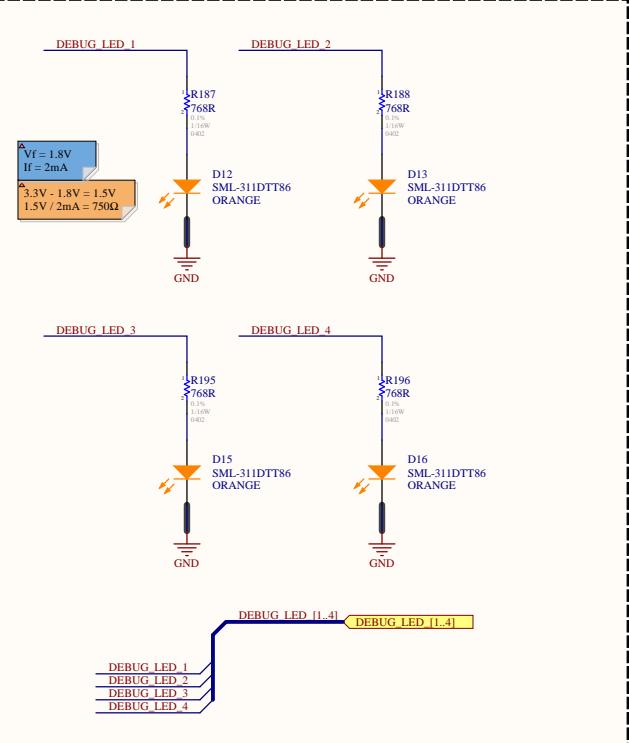
Sheet Name		PROM	
Project Title		PLEIADES	
Global Project		<i>UdeS SZ APP1</i>	
Size 11x17	Group Group 1	Revision A	
Date		Sheet 9 of 22	
Filename PROM.SchDoc		Designers Iacp3102 Pascal-Bill Lachance Bill0901 Frédéric Bujarski	







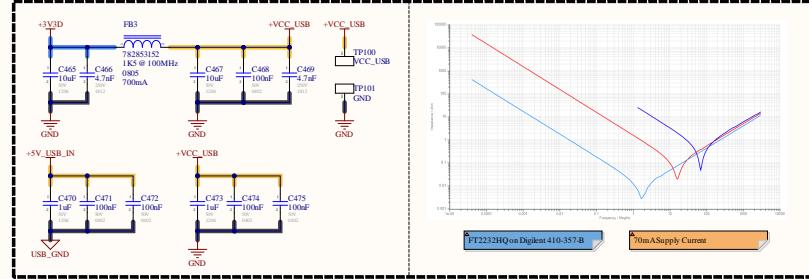
1 2 3 4 5 6

BUTTONS**TEMPERATURE SENSORS****DEBUG LEDS**

Sheet Name		
MECHANICAL		
Project Title		
PLEIADES		
Global Project	Group	Revision
<i>UdeS.S7_APP1</i>	Group 1	A
Date	Sheet	13 of 22
File name	Designers	<i>Iacp3102 Pascal-Etienne Lachance bilf0901 Frédéric Bilodeau</i>
USER_IO.SchDoc		

1 2 3 4 5 6

DECOUPLING

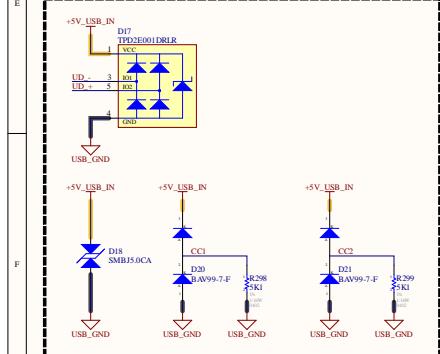


B

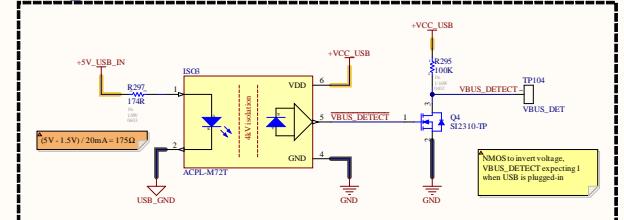
C

D

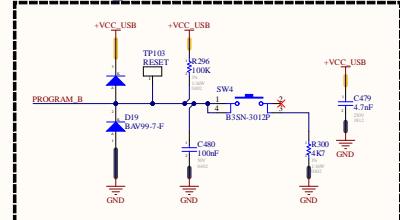
ESD



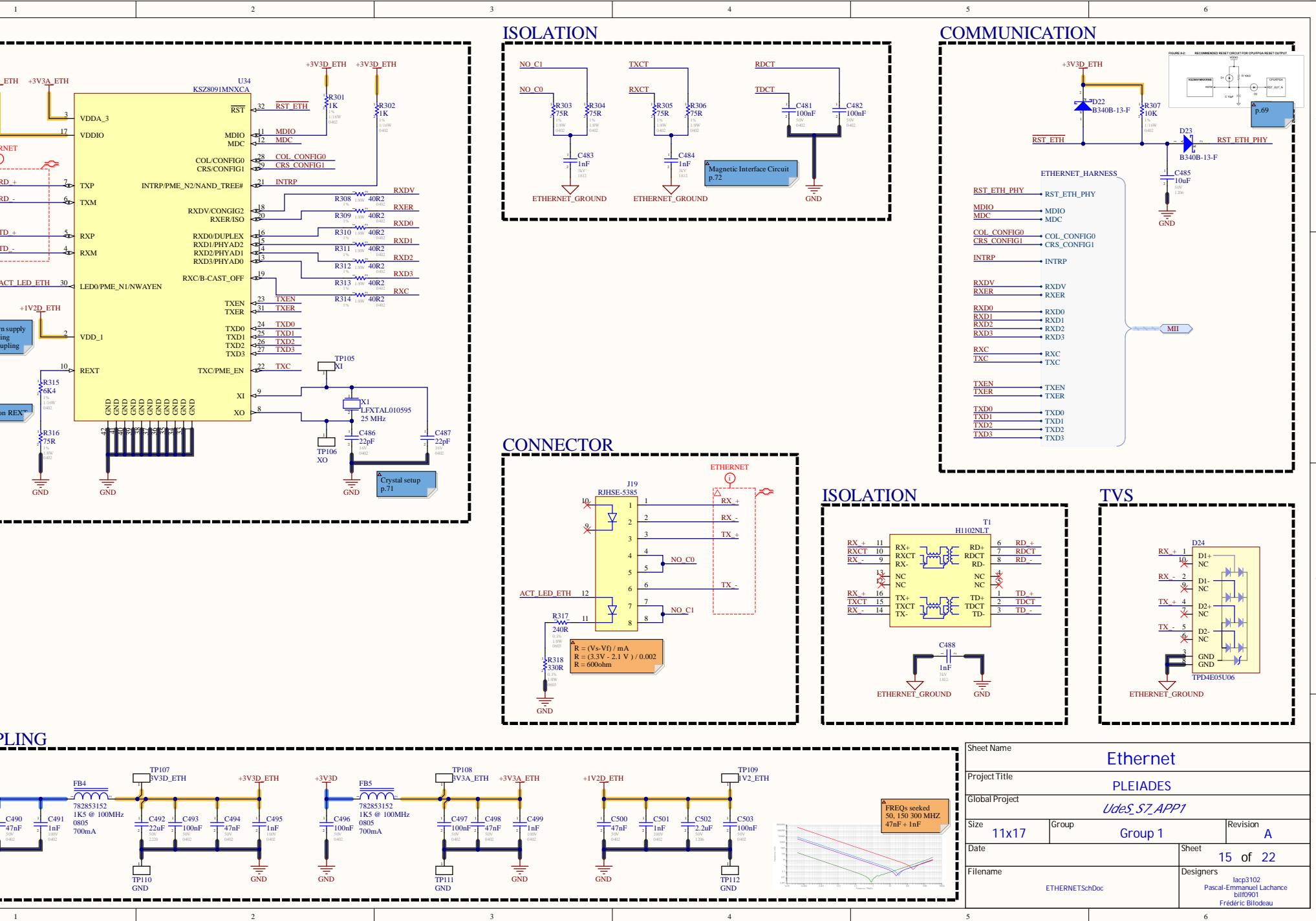
VBUS_DETECT

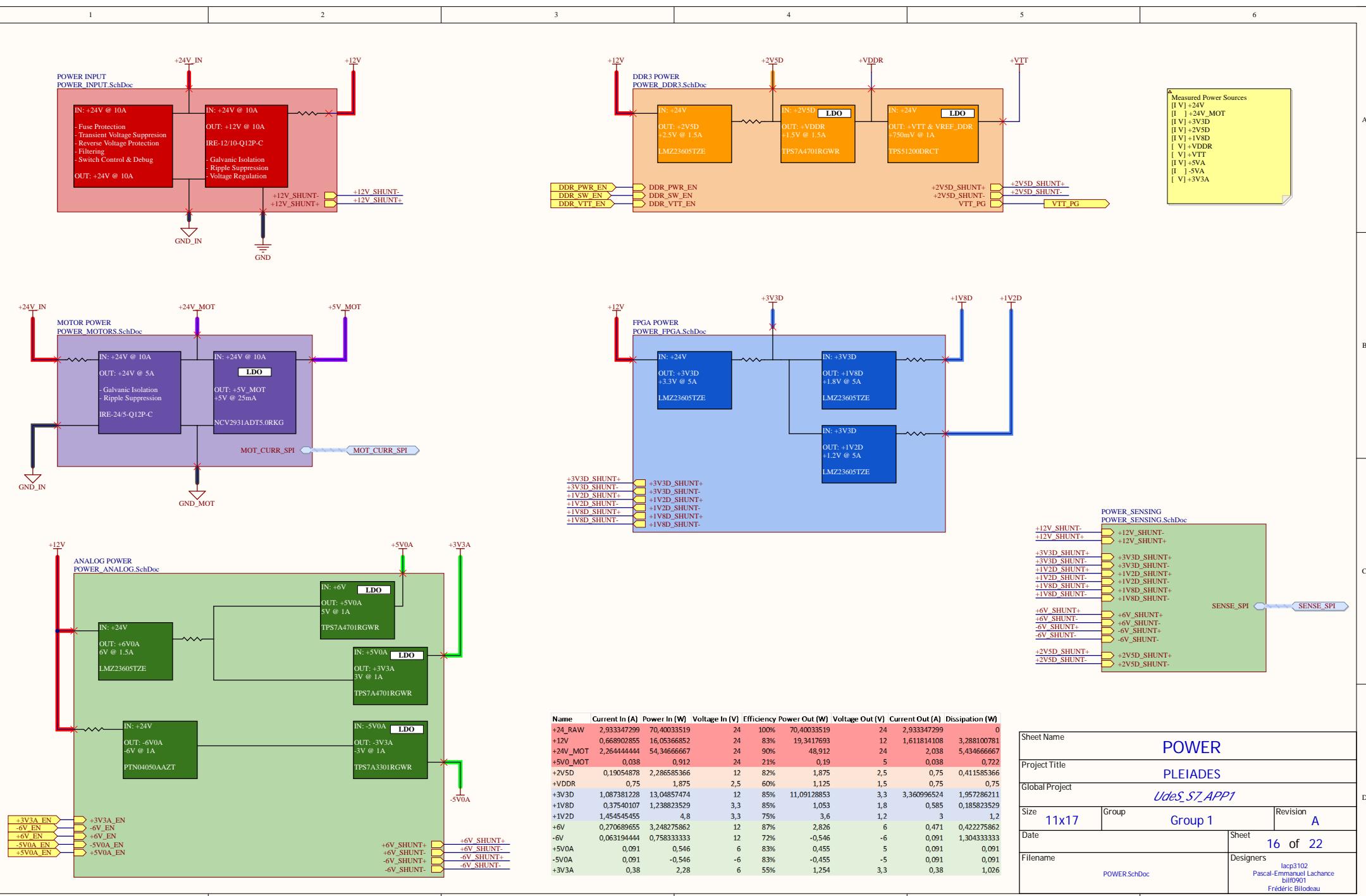


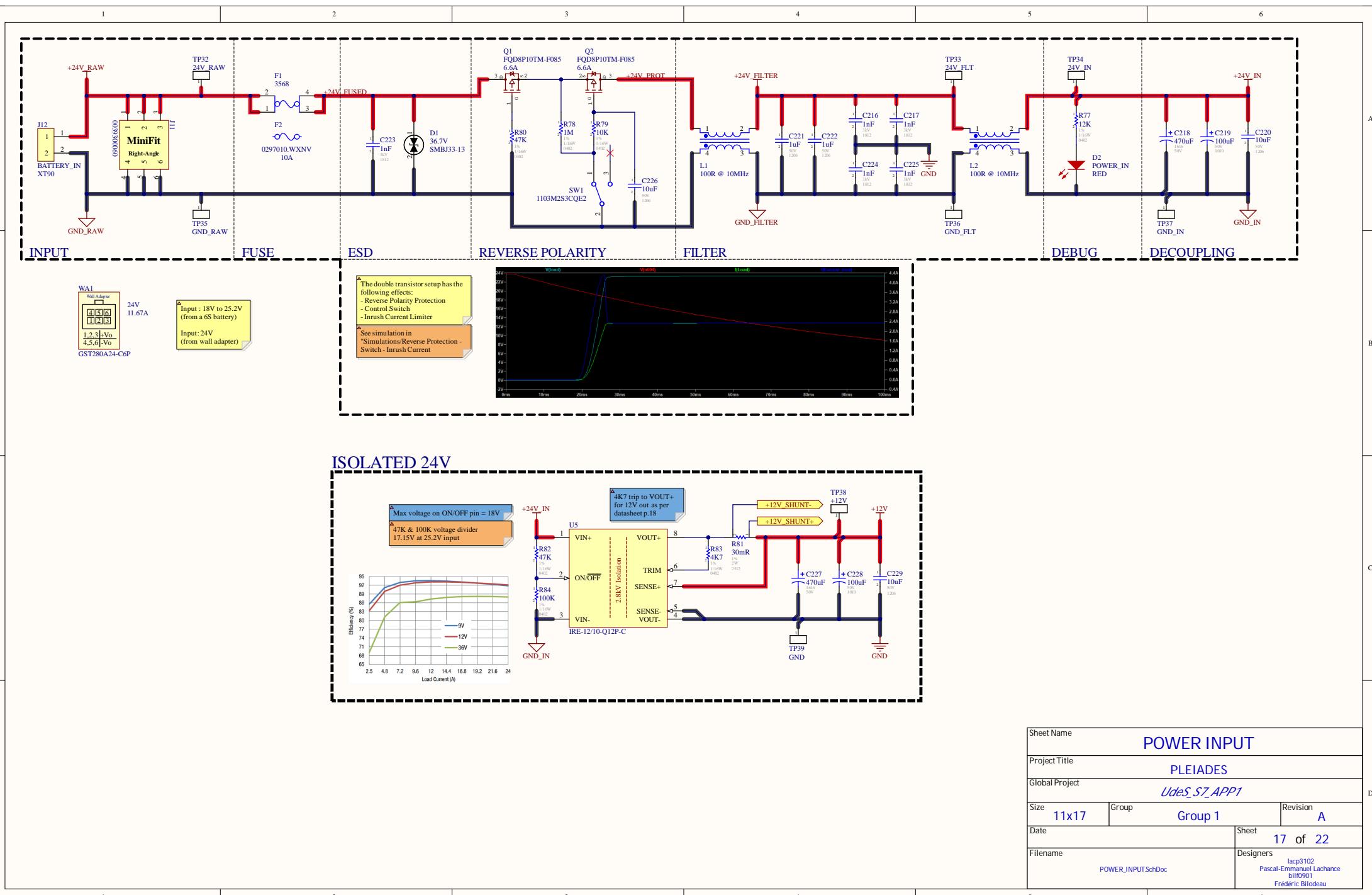
PROGRAM_B



Sheet Name: **USB**
 Project Title: **PLEIADES**
 Global Project: **UdoEs_S7_APP1**
 Size: **11x17** Group: **Group 1** Revision: **A**
 Date: **Sheet 14 of 22**
 File Name: **USB SchDoc** Designers: **lasp3102, Pascal, Sébastien, Frédéric, Blachere, balf001, Frédéric Blachere**







1

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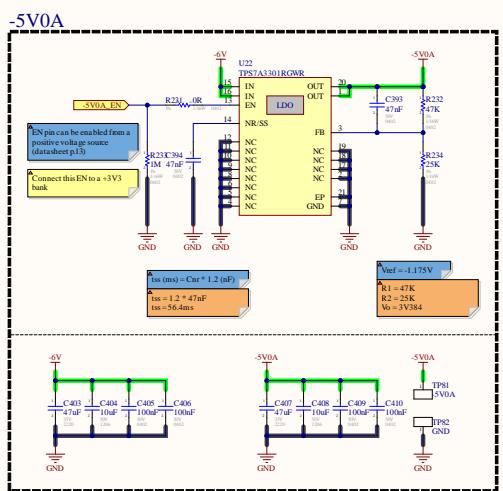
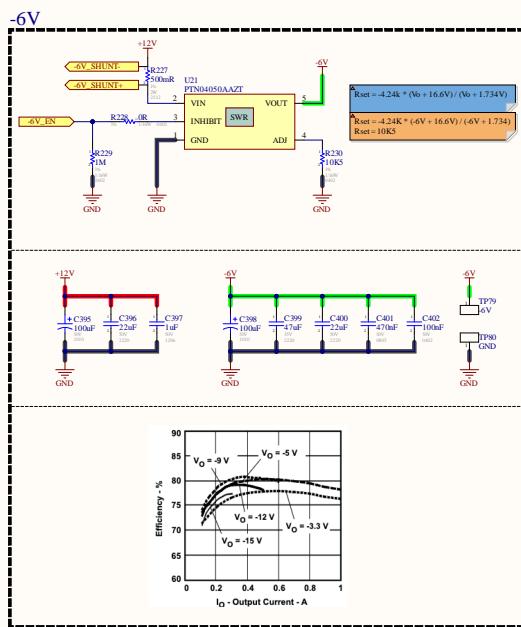
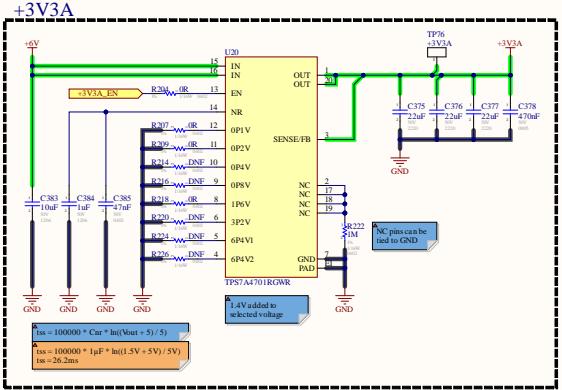
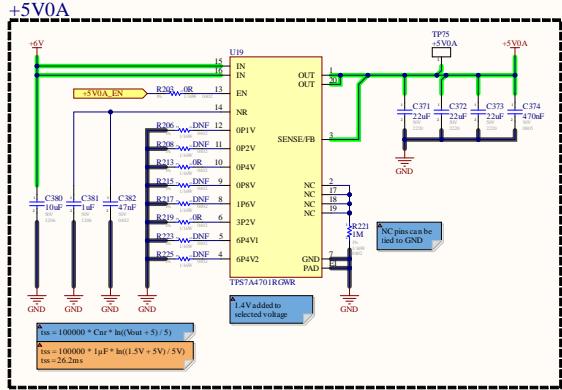
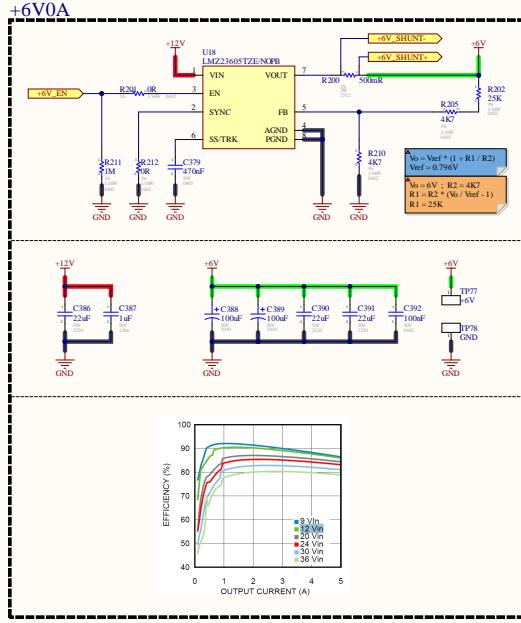
B

C

D

E

F



DAC
AVDD32: 60mA @ -3V3A
CVDD18: 60mA @ +1V8A
DVDD18: 350mA @ +1V8A

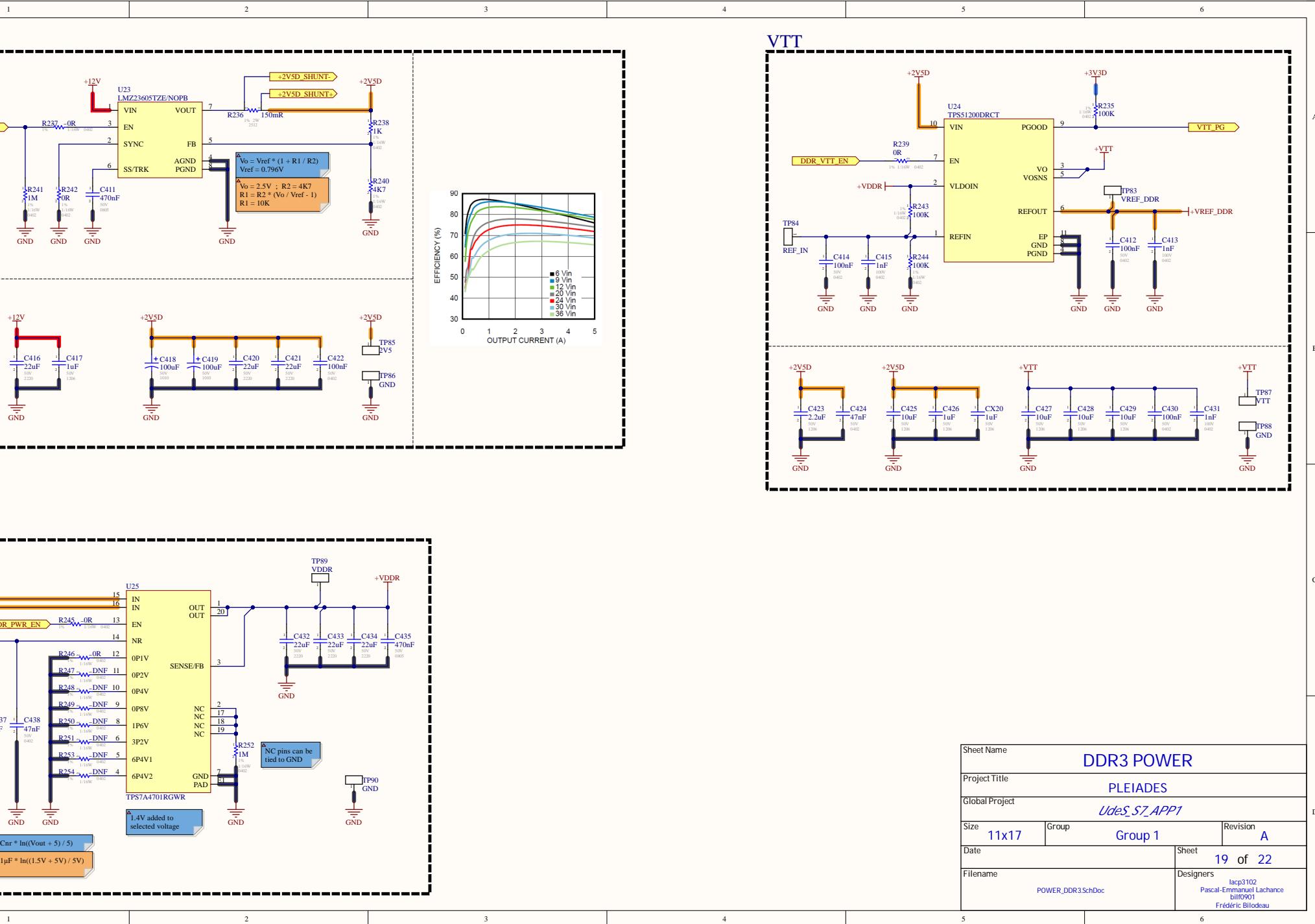
OpAmp
+Vs Quiescent Current: 15mA @ -5V0A
-Vs Quiescent Current: 15mA @ -5V0A
Load: 66mA @ -5V0A
Load: 66mA @ -5V0A

ADC
I2VDD (Analog Supply): 320mA @ 3V3A
I2VRDD (LVDS Supply): 165mA @ 1V8A

OpAmp
Quiescent Current: 25mA @ -5V0A
Quiescent Current: 25mA @ -5V0A

Sheet Name: POWER
Project Title: PLEIADES
Global Project: UdoEs_S7_APP1
Size: 11x17 Group: Group 1 Revision: A
Date: Sheet: 18 of 22
Filename: POWER_ANALOGSchDoc Designers: Pascal Laplante, Frédéric Blouin

8



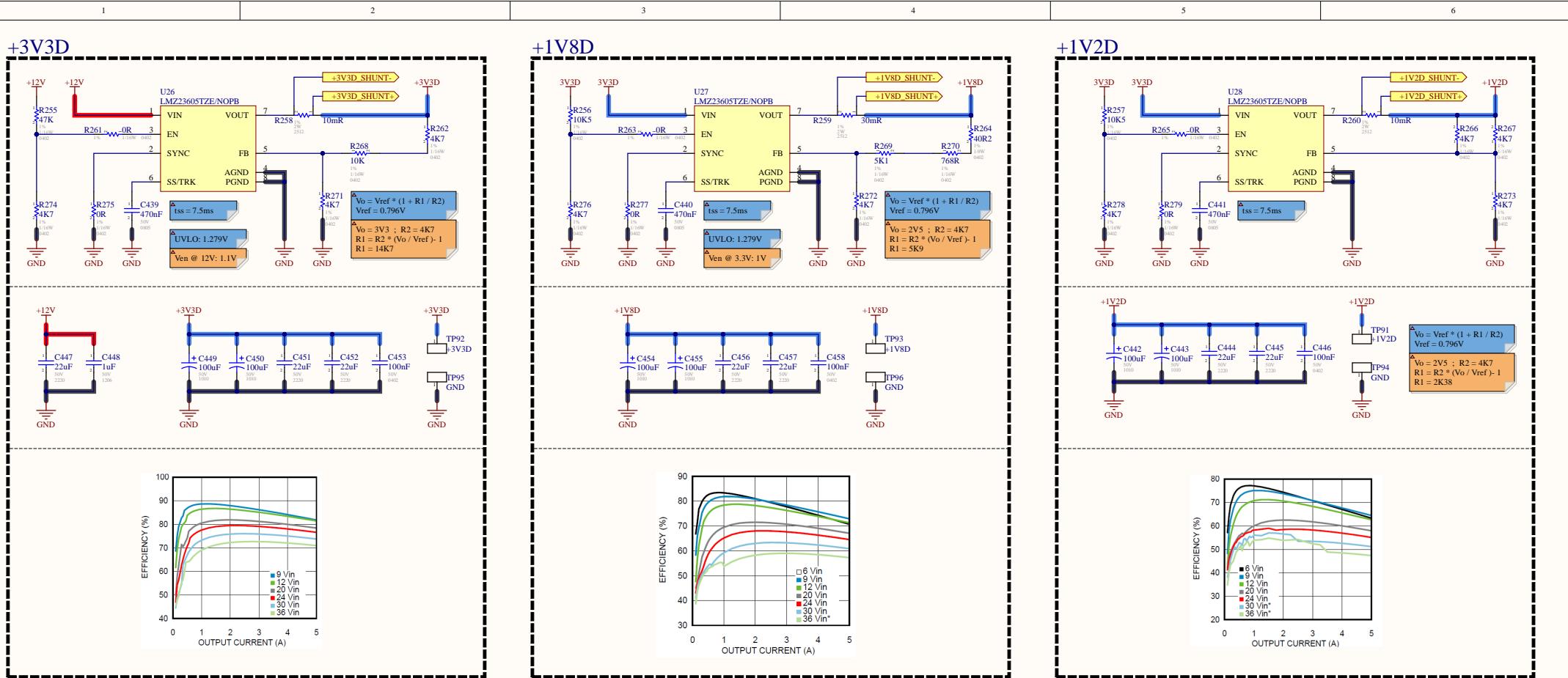


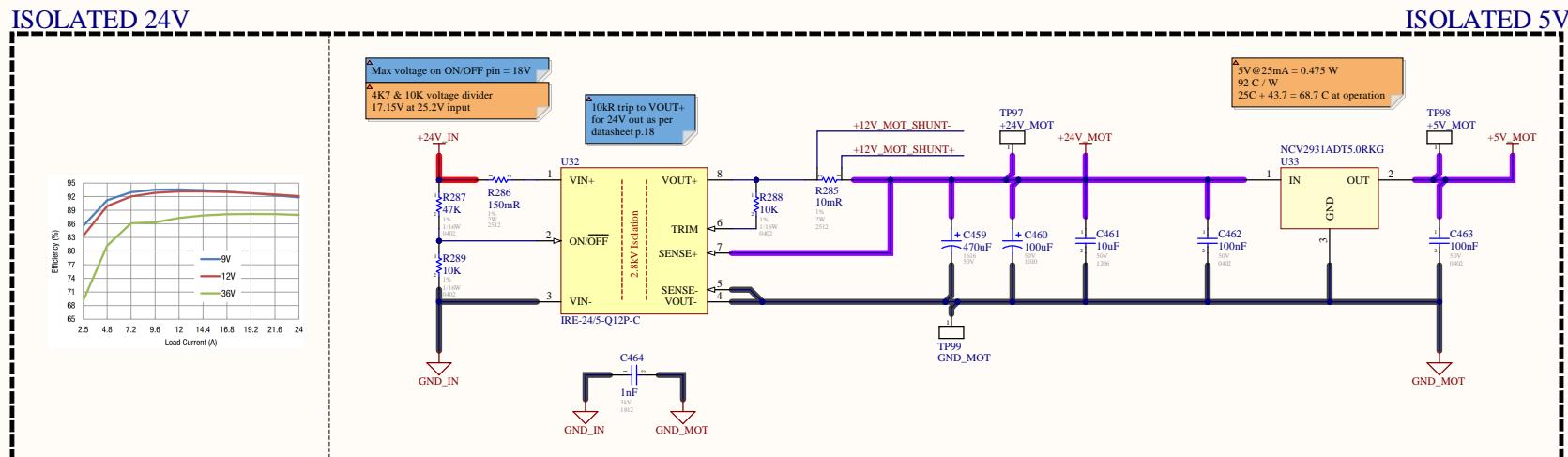
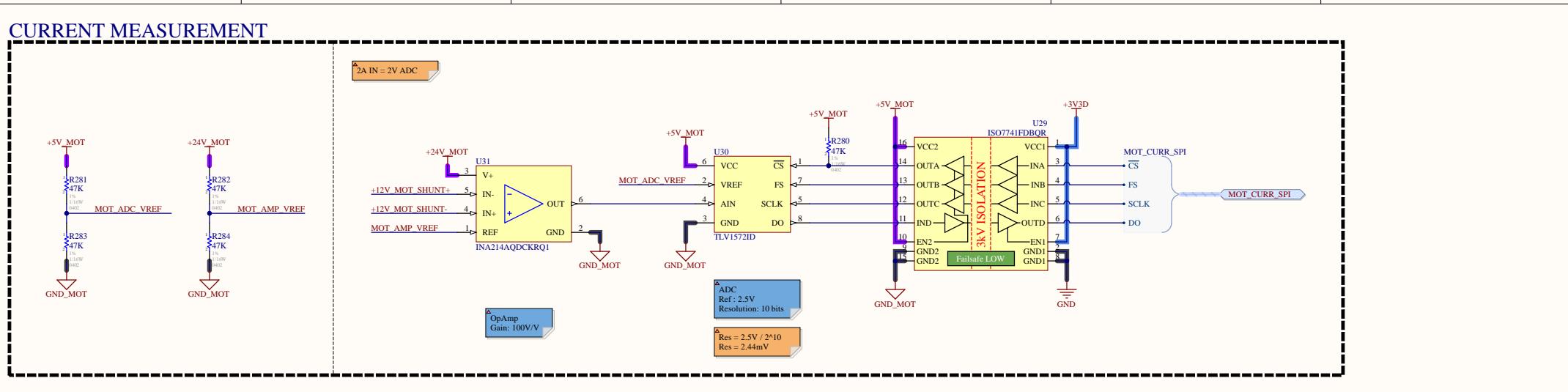
Table 6: Power Supply Ramp Time

Symbol	Description	Speed Grade	Ramp Time	Units
V_{CCINTR}	Internal supply voltage ramp time	-3, -3N, -2	0.20 to 50.0	ms
		-1L	0.20 to 40.0	ms
V_{CCO2} ⁽¹⁾	Output drivers bank 2 supply voltage ramp time	All	0.20 to 50.0	ms
V_{CCAUXR}	Auxiliary supply voltage ramp time	All	0.20 to 50.0	ms

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VCCINT: 3A @ 1V2D
VCCAUX: 250mA @ 3V3D
VCCIO: 6x 100mA @ 3V3D
6.405W

Sheet Name			
POWER			
Project Title			
PLEIADES			
Global Project	Udes.S7_APP1	Group	Revision
Size	11x17	Group 1	A
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Filename	POWER_FPGA.SchDoc	Designers	Iacp3102 Pascal-Etienne Lachance bilf9091 Frédéric Bilodeau



Sheet Name		POWER	
Project Title		PLEIADES	
Global Project		<i>UdeS SZ APP1</i>	
Size	11x17	Group	Revision A
Date		Sheet 21 of 22	
Filename	POWER_MOTORS.SchDoc	Designers	iacp3102 Pascal-Isaac Lachance Bill0901 Frédéric Bélanger

