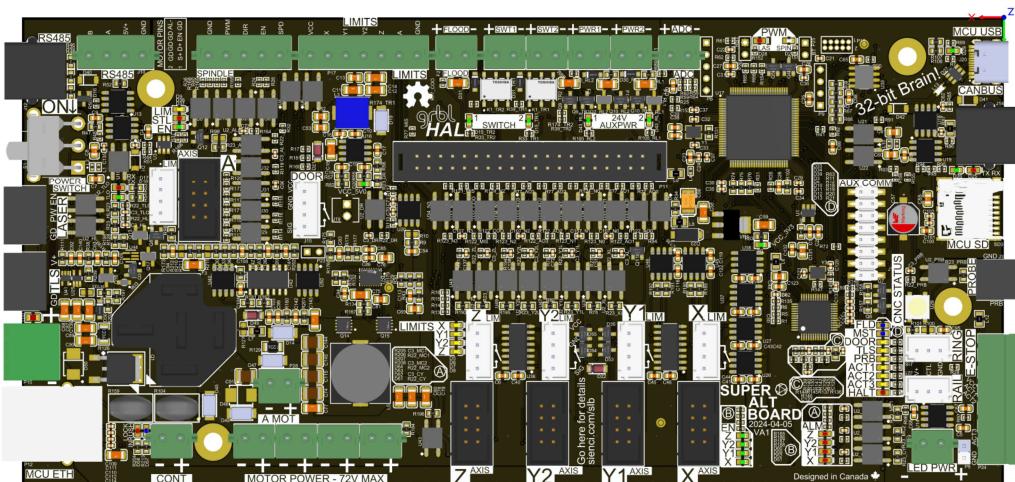


1 2 3 4 5 6

Sienci Altmill 32-bit CNC Controller



Sienci CNC Controller
Block_diagram.SchDoc

Sienci CNC Controller
Board_Diagram.SchDoc

Mechanical



Z21
Assembly Note
These assemblies are ESD sensitive. ESD precautions shall be observed.

Z22
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

Z23
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

1

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Expatria
Technologies

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Longboard_32bit_ext.PriPCB_B9
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Title Sheet.SchDoc

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Title Sheet

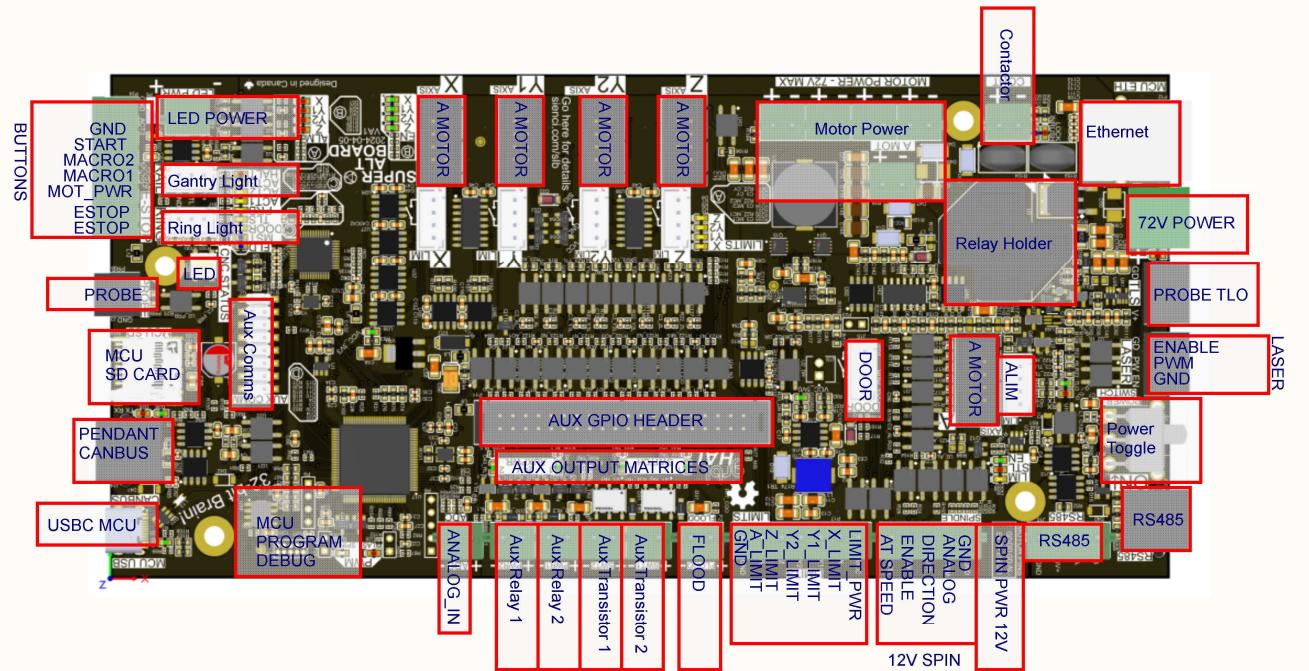
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2024-06-09 9:13:34 AM

REV
1 / 27

1 2 3 4 5 6

Sienci Altmill 32-bit CNC Controller



1 2 3 4 5 6

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Technologies

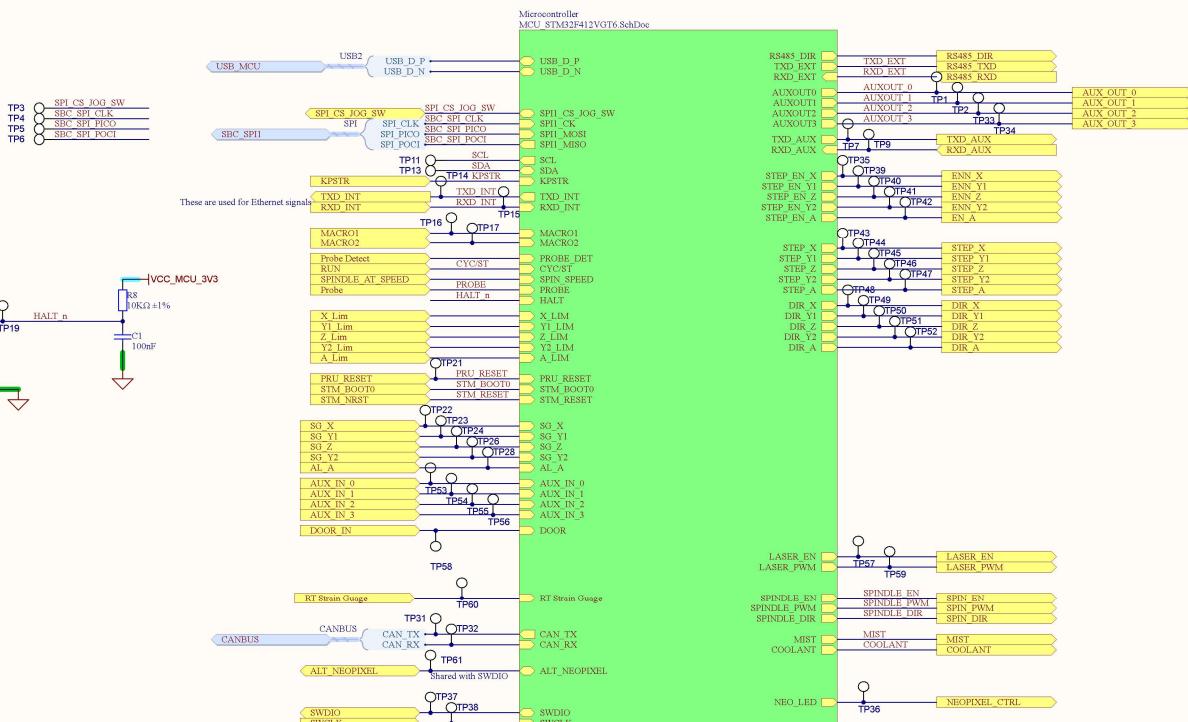
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Rev B
Created By AM
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Sheet 2 / 27



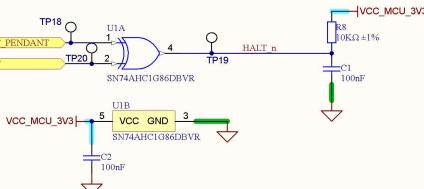
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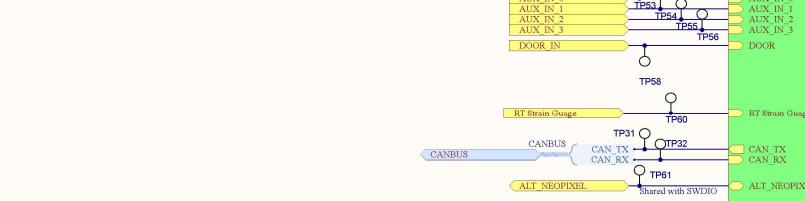
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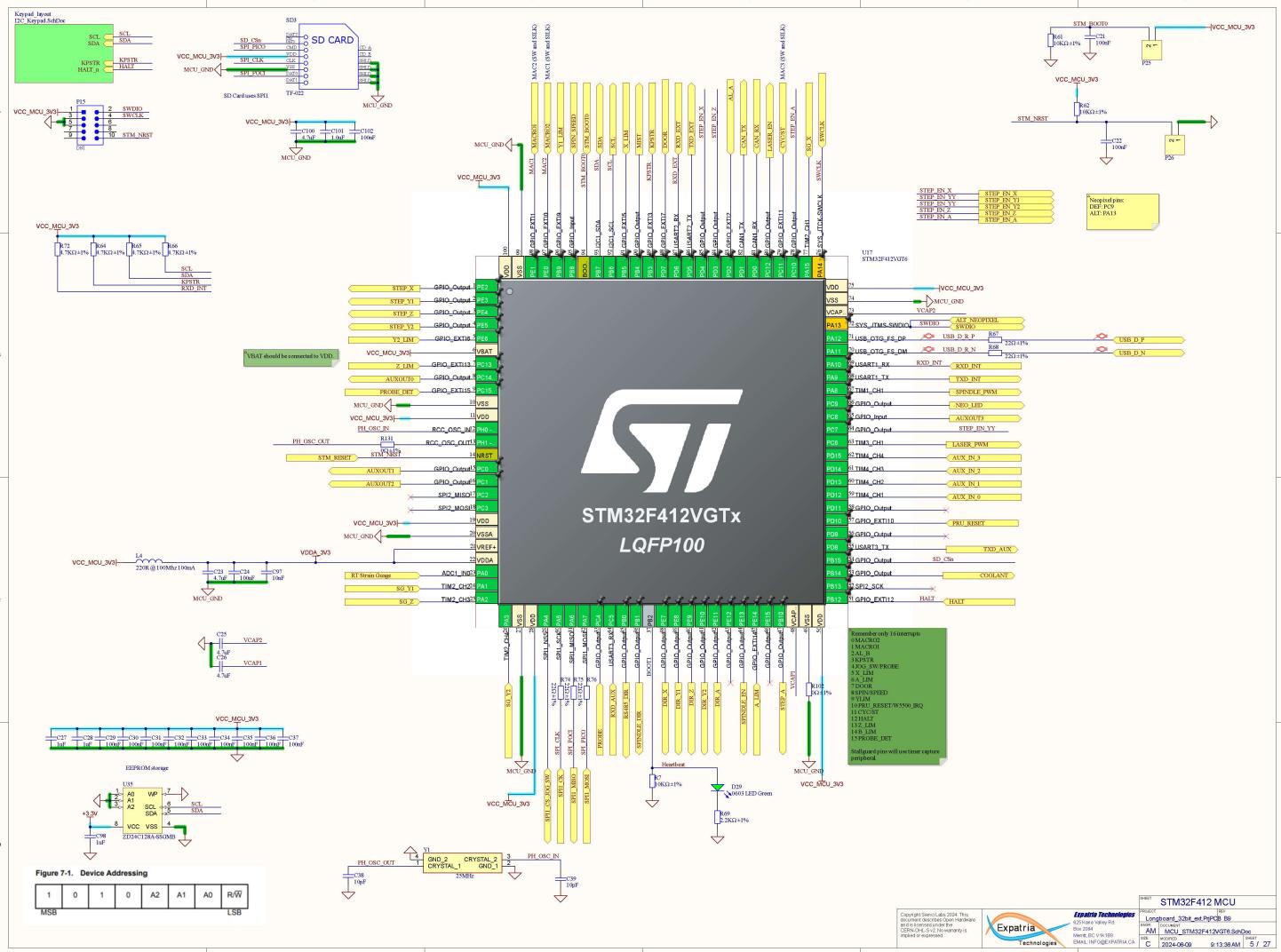
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Expatria
Technologies

Sheet 1 REV B
Project: Longboard_32bit_extPrjPCB_B9
Document: Longboard_32bit_SchDoc
Page: B / 27
Page: 1 / 27
Date: 2024-06-09 9:13:36 AM



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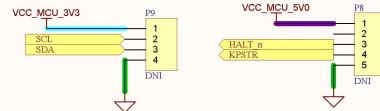
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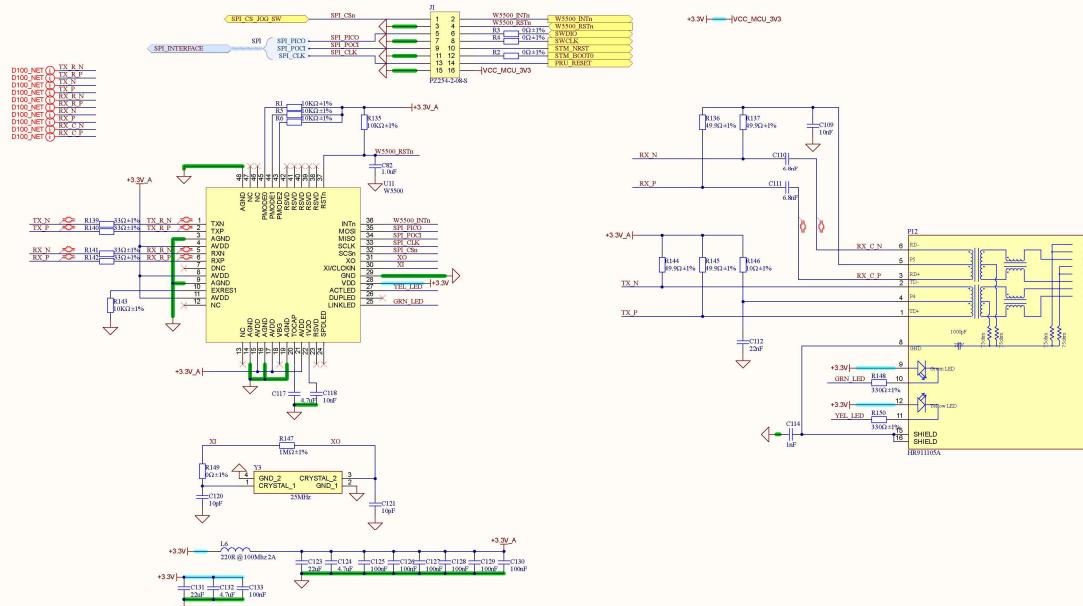
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Expatria
Technologies

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DOCUMENT			
AM	I2C_Keypad.SchDoc		
SZC			
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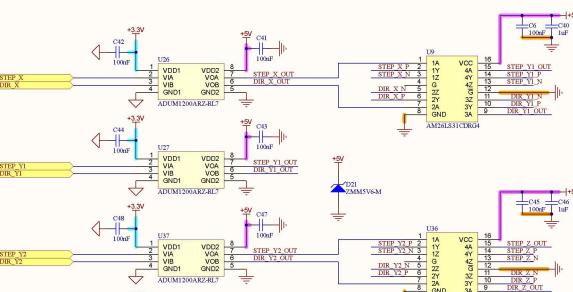
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8

The diagram shows the internal structure of the ADUM1200 device. It consists of two main sections, one for each differential pair (X and Y), each containing a primary winding, a secondary winding, and a common-mode feedback loop. The primary windings are connected to the **VDD1**, **VDD2**, **VIB**, and **VOB** pins. The secondary windings are connected to the **ENN_X**, **ENN_Y**, **ENN_Z**, and **ENN_Z** pins. Each section includes a diode (DSS) and a BAT54S Schotkly diode. The common-mode feedback loops include resistors (R189, R190, R191, R192) and capacitors (C116, C122, C123, C124) connected to ground (GND).

B

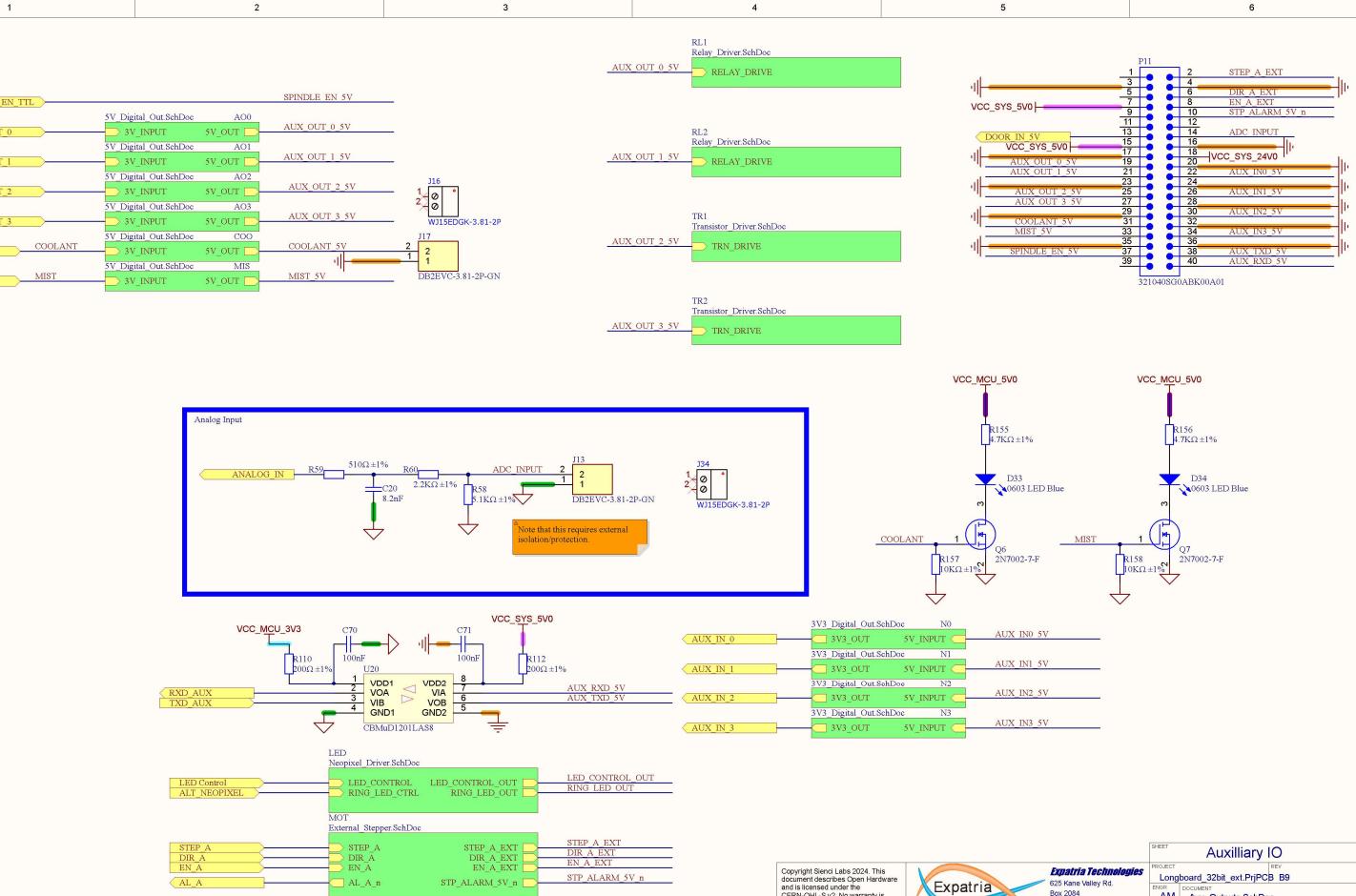
Circuit diagram for SG_X:

- Supply voltage: +3.3V
- 2.3kΩ resistor connected between +3.3V and the top terminal of a 10kΩ potentiometer.
- The middle terminal of the 10kΩ potentiometer is connected to ground through a 10kΩ resistor.
- The bottom terminal of the 10kΩ potentiometer is connected to the input of U10P.
- U10P is a logic inverter with its output connected to the R37 pin of U10B.
- U10B is an ELAS7N08XTA40 integrated circuit with its R37 pin connected to ground.
- U10B has three outputs: R37, R38, and R39.
- R37 is connected to ground.
- R38 is connected to +3.3V.
- R39 is connected to the V_ALARM_N_VD pin of U10B.

The diagram shows a pinout for four signals: STEP Z N, DIR Z N, ENN Z OUT, and ALARM 5V m. The pins are numbered 2 through 8. Pin 2 is connected to STEP Z N, pin 4 to DIR Z N, pin 6 to ENN Z OUT, and pin 8 to ALARM 5V m. Pins 1, 3, 5, and 7 are shown as unconnected.

6

The diagram shows a pinout for four signals: STEP Z N, DIR Z N, ENN Z OUT, and ALARM 5V m. The pins are numbered 2 through 8. Pin 2 is connected to STEP Z N, pin 4 to DIR Z N, pin 6 to ENN Z OUT, and pin 8 to ALARM 5V m. Pins 1, 3, 5, and 7 are shown as unconnected (open circles).



A

A

B

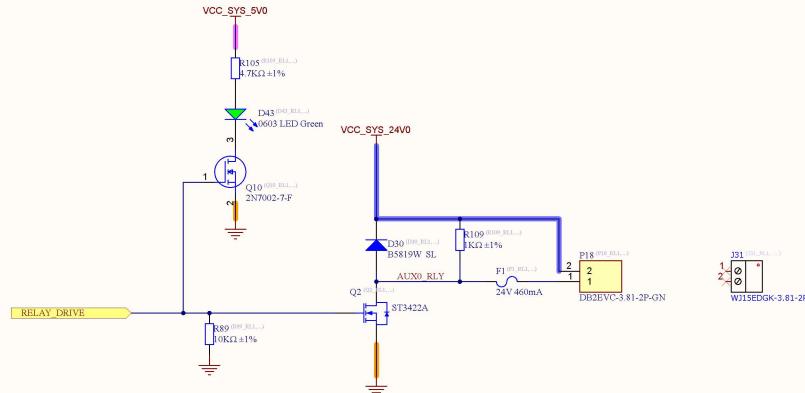
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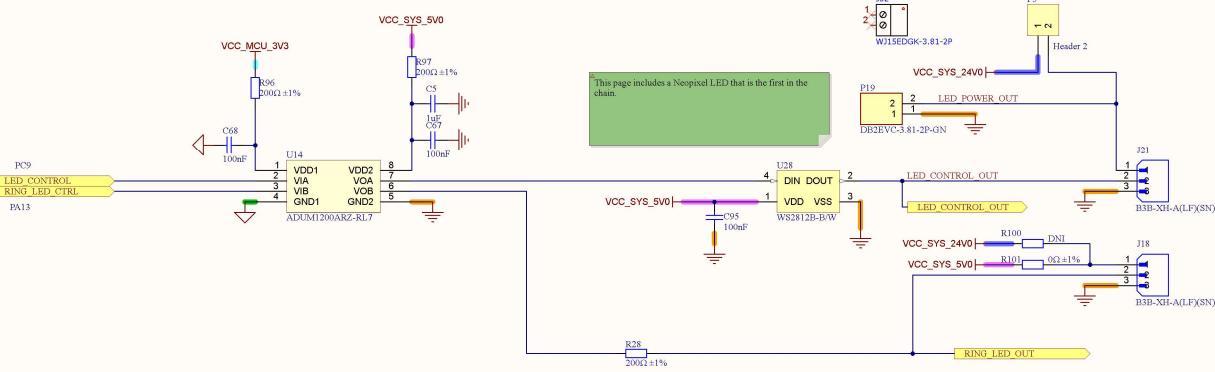
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D

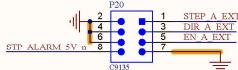
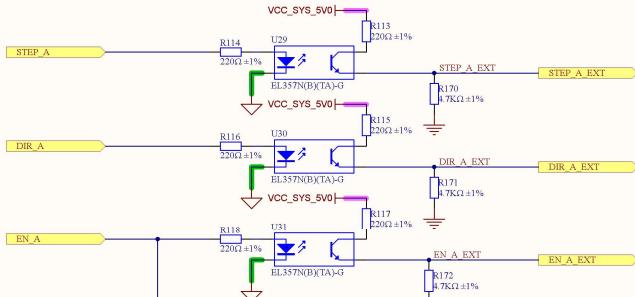




1 2 3 4 5 6

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A

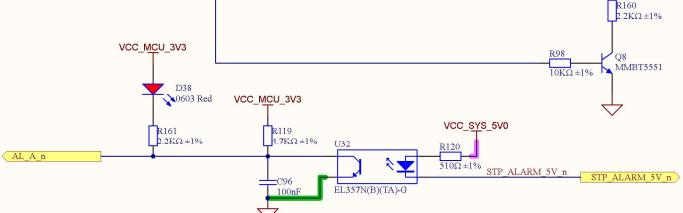


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Expatria
Technologies

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External_Stepper.SchDoc
SHEET
External Stepper
12 / 27

A

A

B

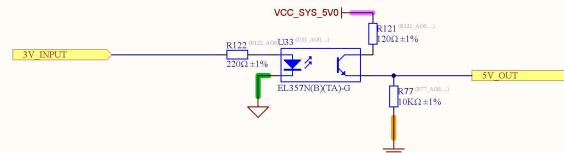
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A

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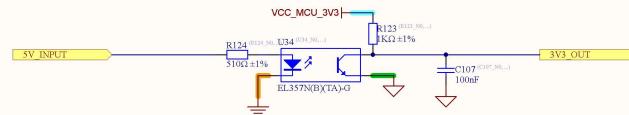
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A

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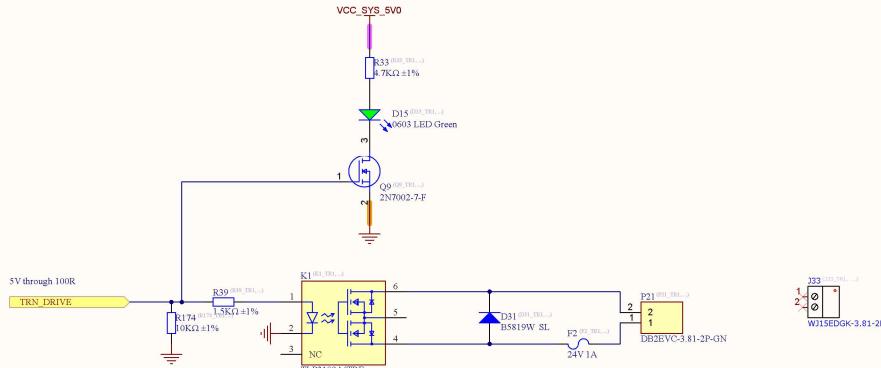
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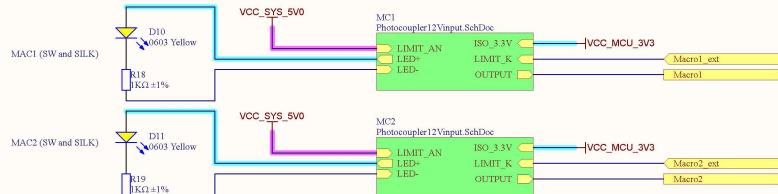
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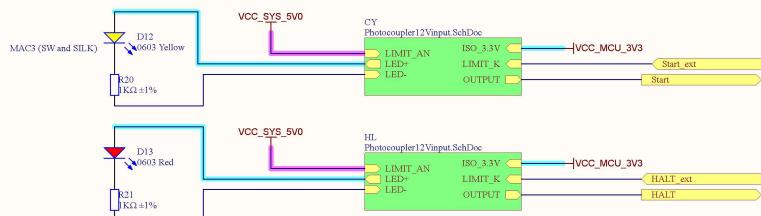
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Transistor_Driver.SchDoc
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2024-06-09 9:13:37 AM
SHEET
15 / 27

A



B



C

D

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Expatria Technologies
638 Kona Valley Rd.
Box 2084
Merritt BC V1K1B8
EMAIL: INFO@EXPATRIA.CA

Misc Switches		REV B
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BOARD	Longboard	
DOCUMENT	AM_Misc_switches.SchDoc	
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A

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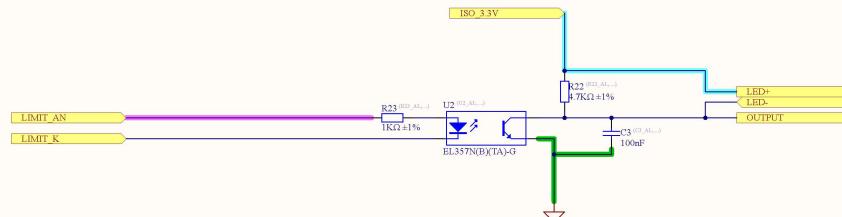
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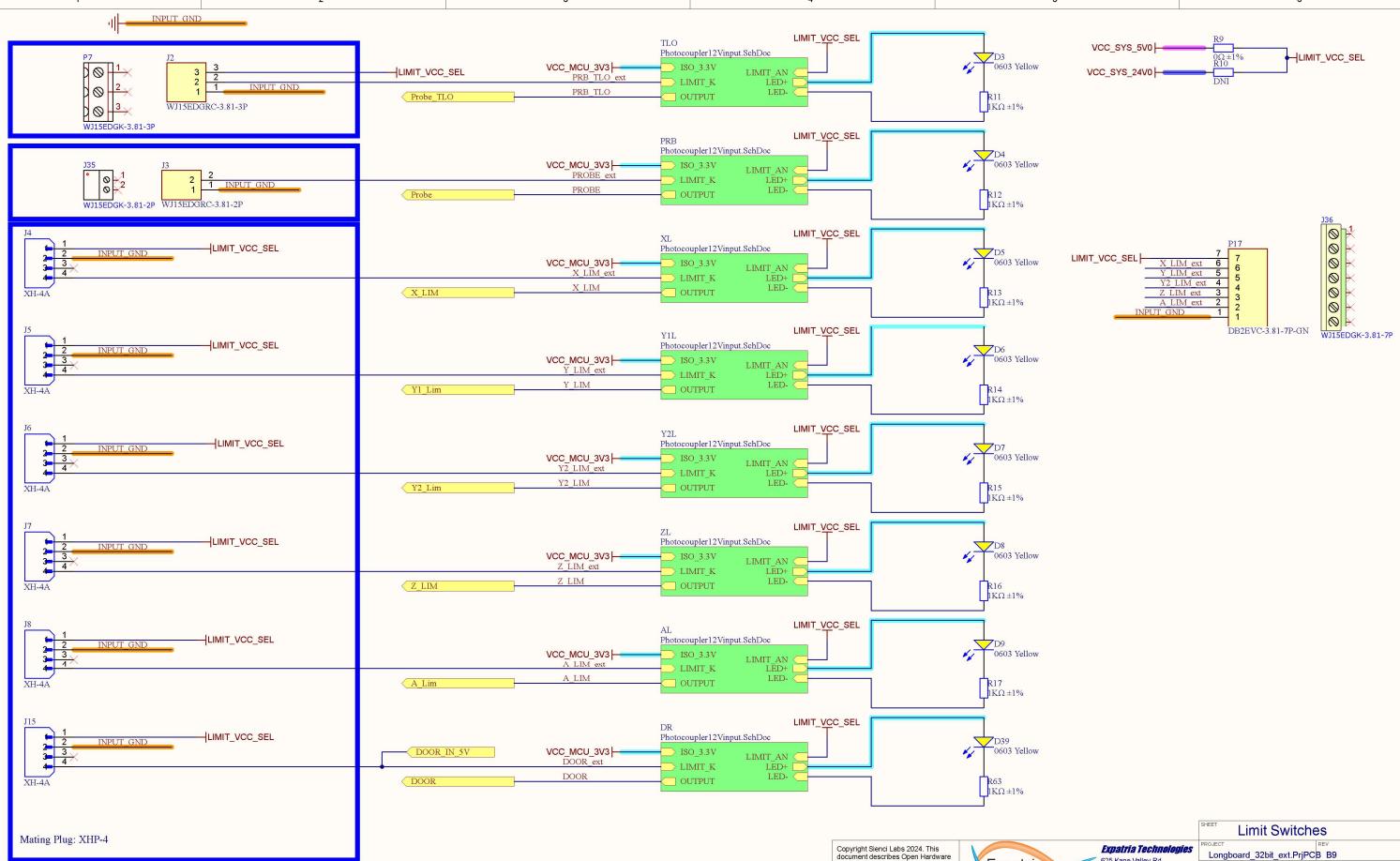
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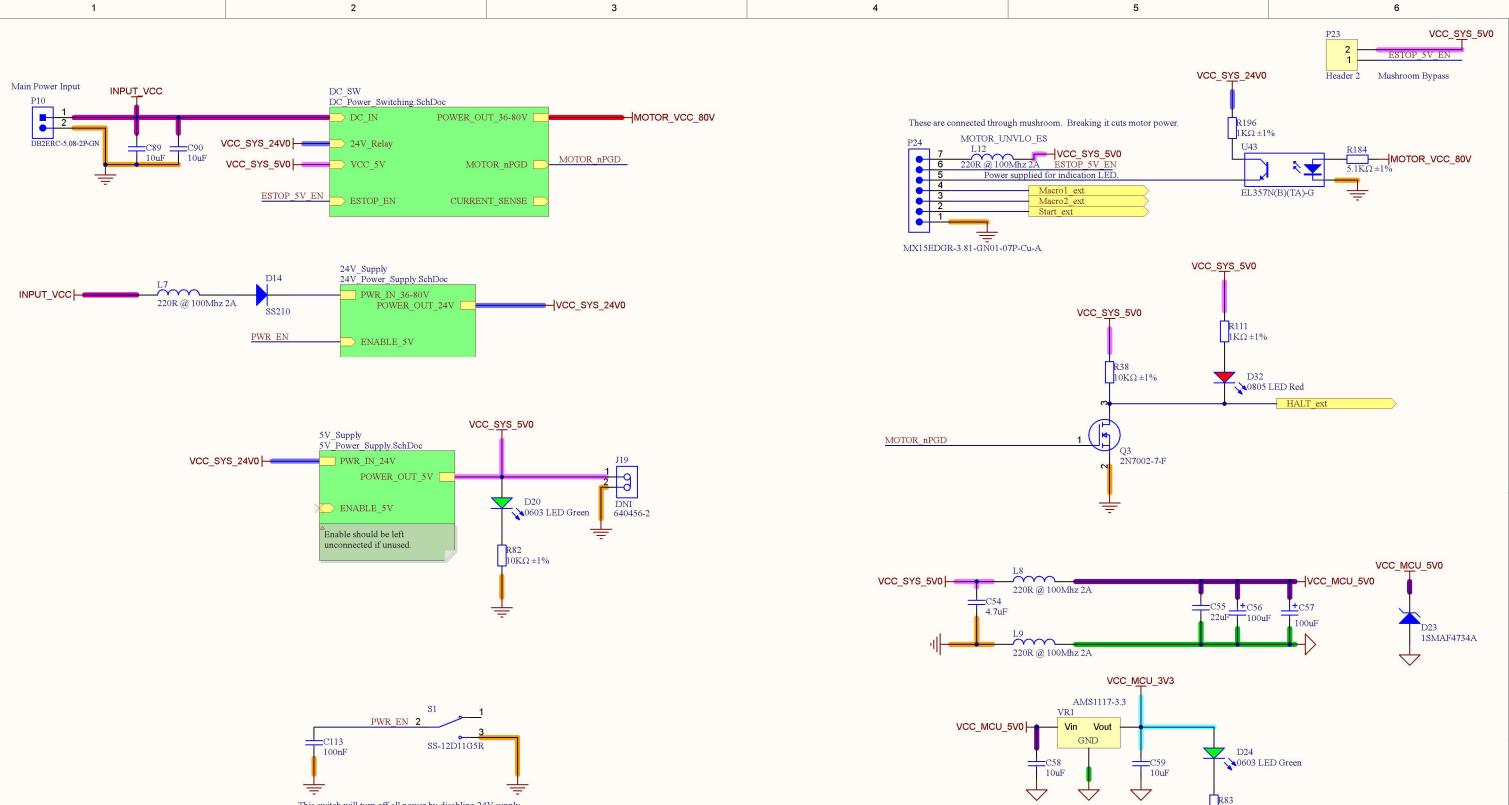
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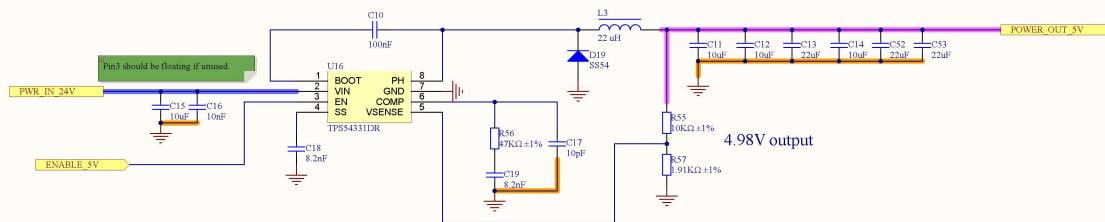


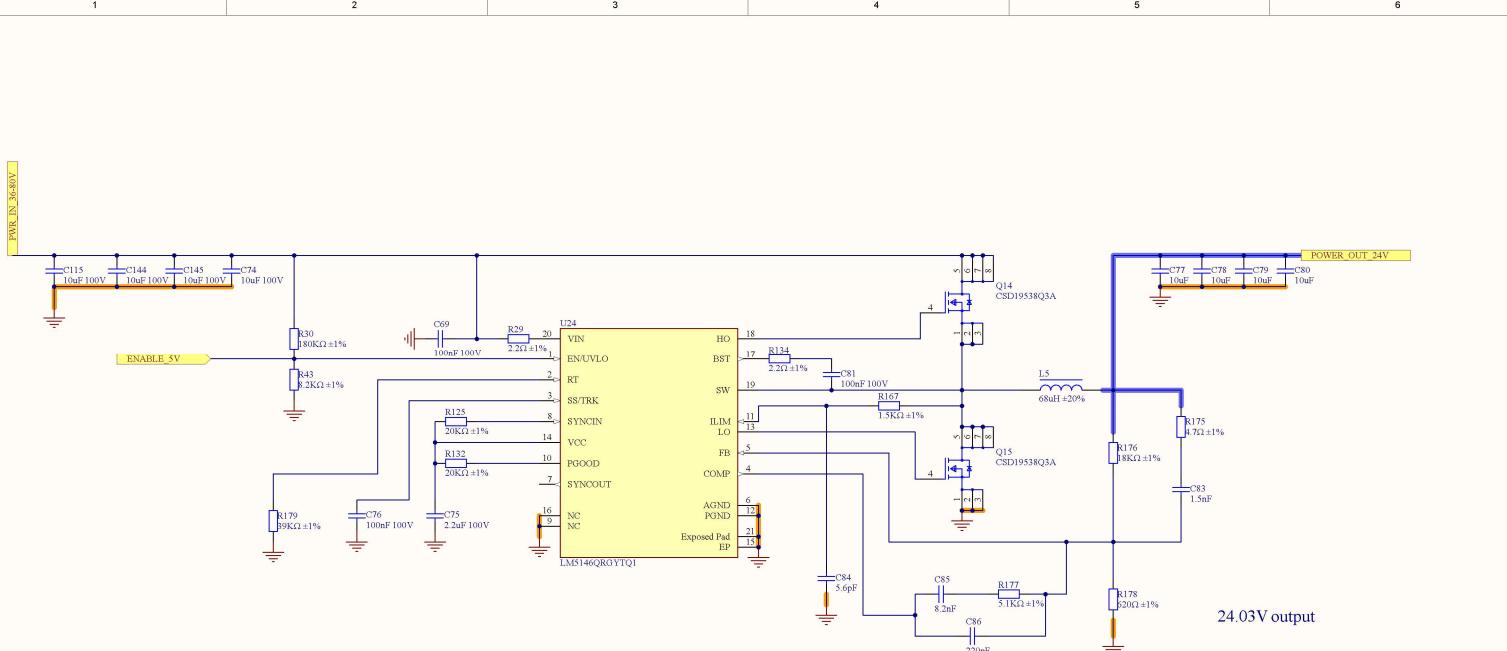
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Expatria
Technologies

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Longboard_32bit_extPrjPCB	B9
DESIGN DOCUMENT	AM
DC_Power_Regulation.SchDoc	
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DATE	2024-06-09 9:13:38 AM





24.03V output



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SHEET 24/2

24V Power Supply

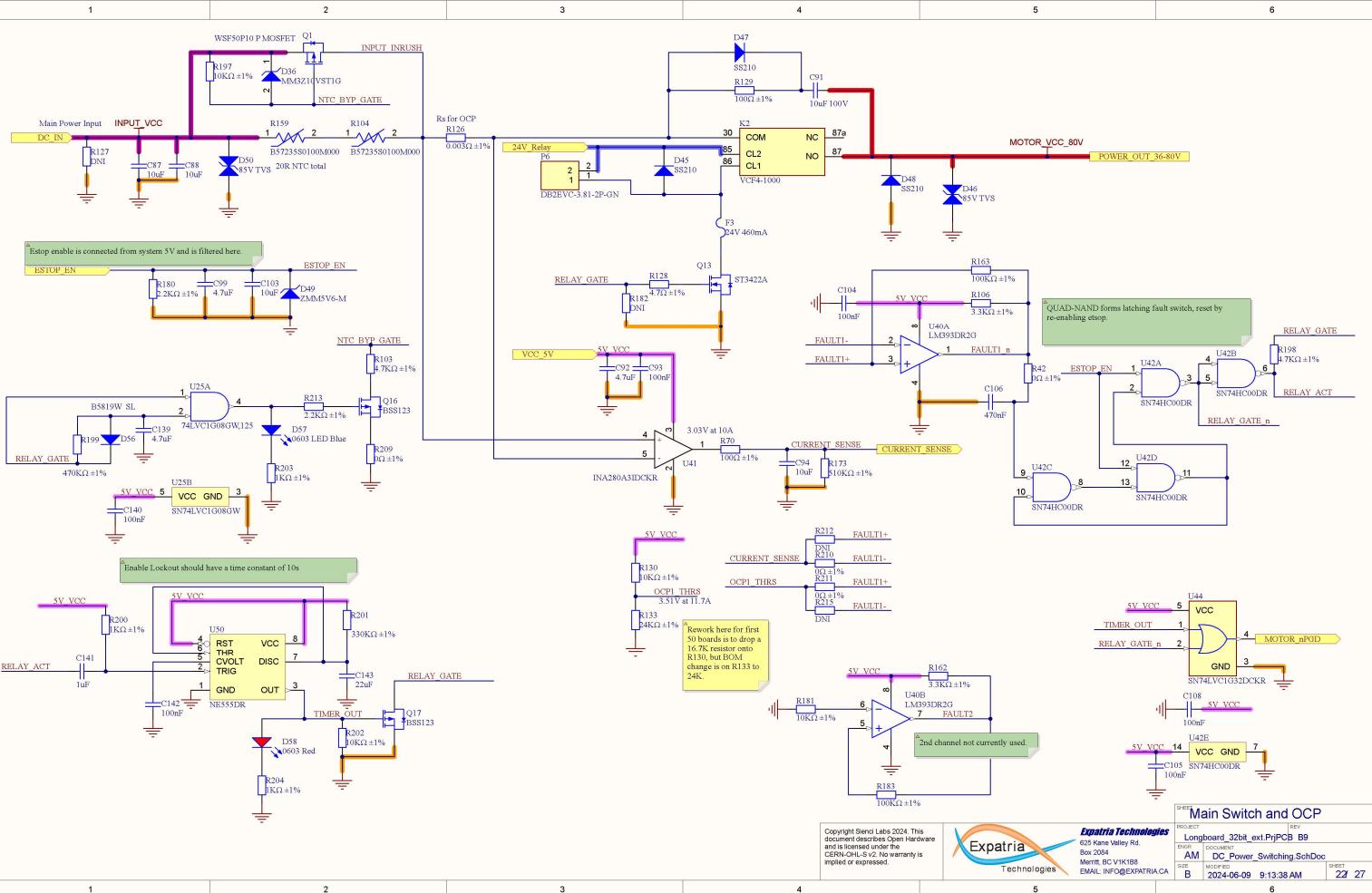
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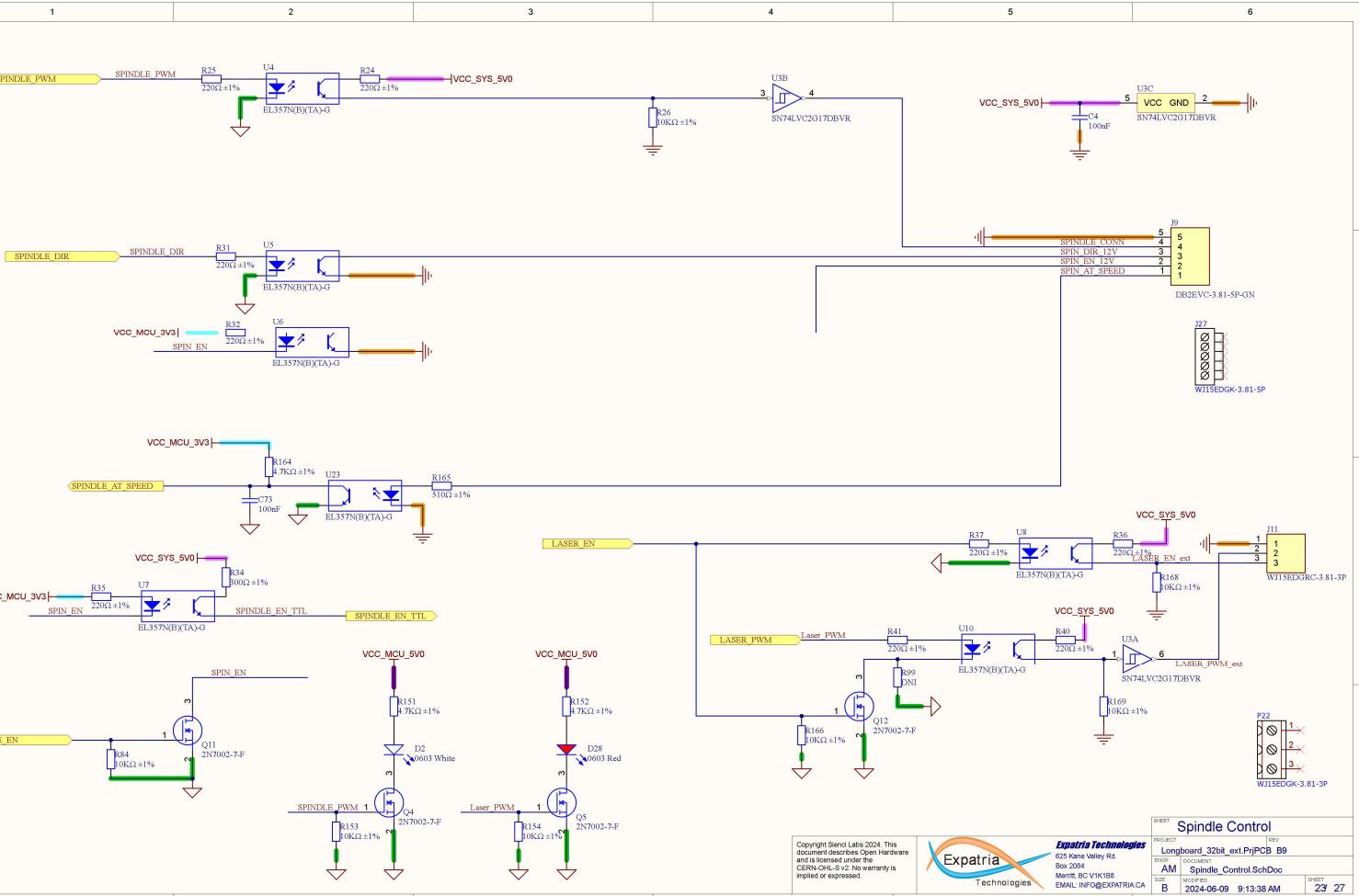
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Main Switch and OCP
PROJECT REV
Longboard_32bit_extPjPCB_B9
RELEASE DOCUMENT AM DC_Power_Switching.SchDoc
B 2024-06-09 9:13:38 AM
SHEET 23 / 27



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Page 10

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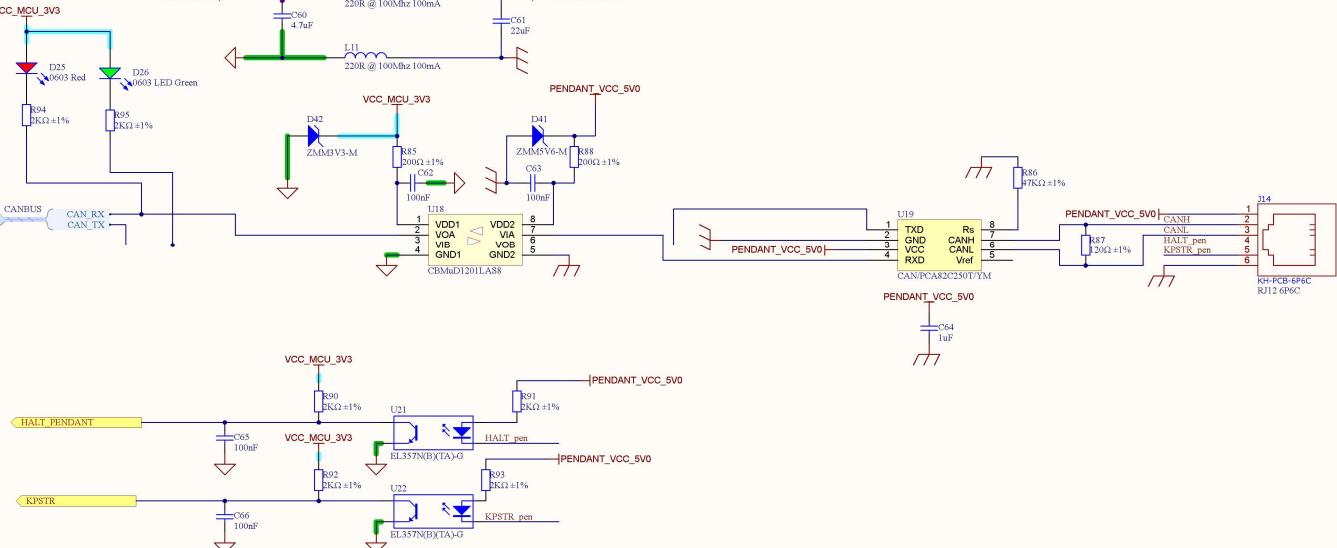
625 Ranch Valley Rd.
Box 2084

Box 2004
Merritt, BC V1K1B8

EMAIL: INFO@EXPATRIA.C

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BRANCH	DOCUMENT		
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SIZE	B	2024-06-09 9:13:38 AM	

1 2 3 4 5 6



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Expatria
Technologies

CANBUS Pendant

Longboard_32bit_extPrjPCB_B9

REV B

PROJECT DOCUMENTS

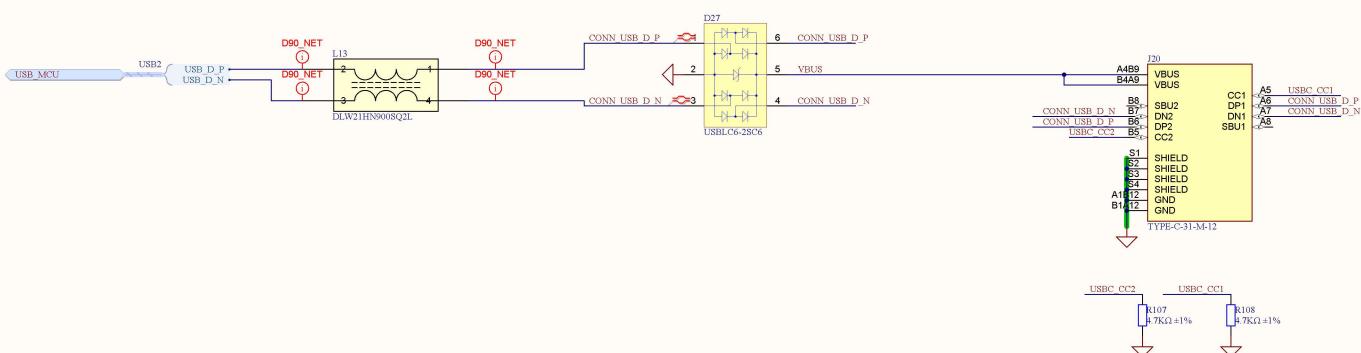
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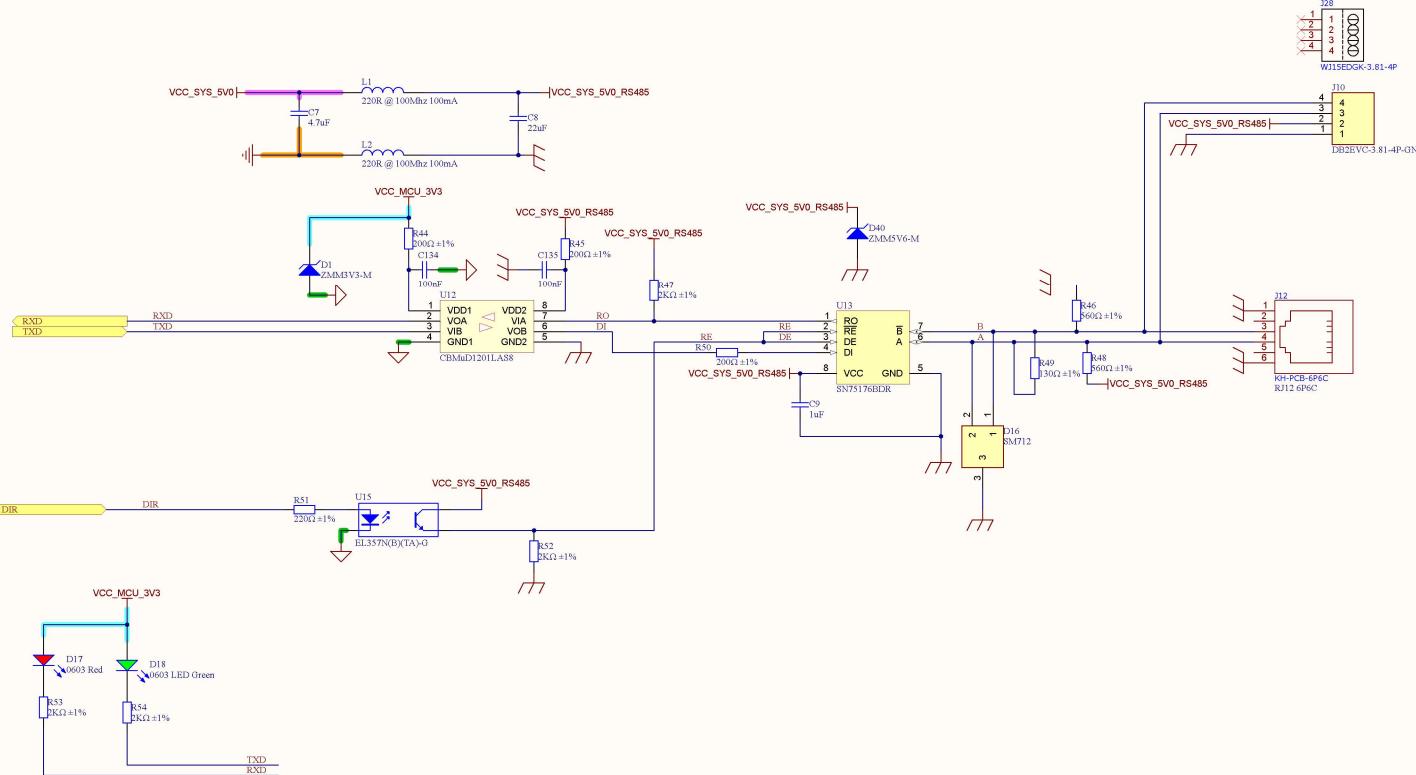
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Expatria
Technologies

USBC MCU Connector	
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Longboard_32bit_extPrjPCB	B9
BOARD	DOCUMENT
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SIZE	25x27
MOUL	2024-06-09 9:13:38 AM
SHEET	25/27



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Expatria Technologies

REET PS 125, Grade 11

RS485_Spindle

Longboard 32bit ext.PriPCB B9

ENOR DOCUMENT

AM RS485.SchDoc

B 2024-06-09 9:13:38 AM

6

• 100 •

1 2 3 4 5 6

Change Log

A

Date	Revision	Description
2/14/24	B6	Initial commit of original SLB files to be modified.
03/27/24	B7	Update power supply and other changes
4/1/24	B8	BOM updates for availability Footprint and 3d model updates
6/9/24	B9	Added series resistor to OCP and updated component values.

A

B

Date	Revision	Description

B

C

D

1 2 3 4 5 6

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Expatria
Technologies

PROJECT : Change Log.SchDoc
REV : B9
Longboard_32bit_extPrjPCB
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TIME : 27/27