

Linear Motor Controller

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Design Notes – This is an example of design notes
 Layout Notes – This is an example of layout notes
 Comments – This is an example of comments

Olibra LLC

Sheet: /
 File: lmc.kicad_sch

Title: Linear Motor Controller

Size: A4 Date: 2025-12-08
 KiCad E.D.A. 9.0.0

Rev: 0.1
 Id: 1/22

A

B

C

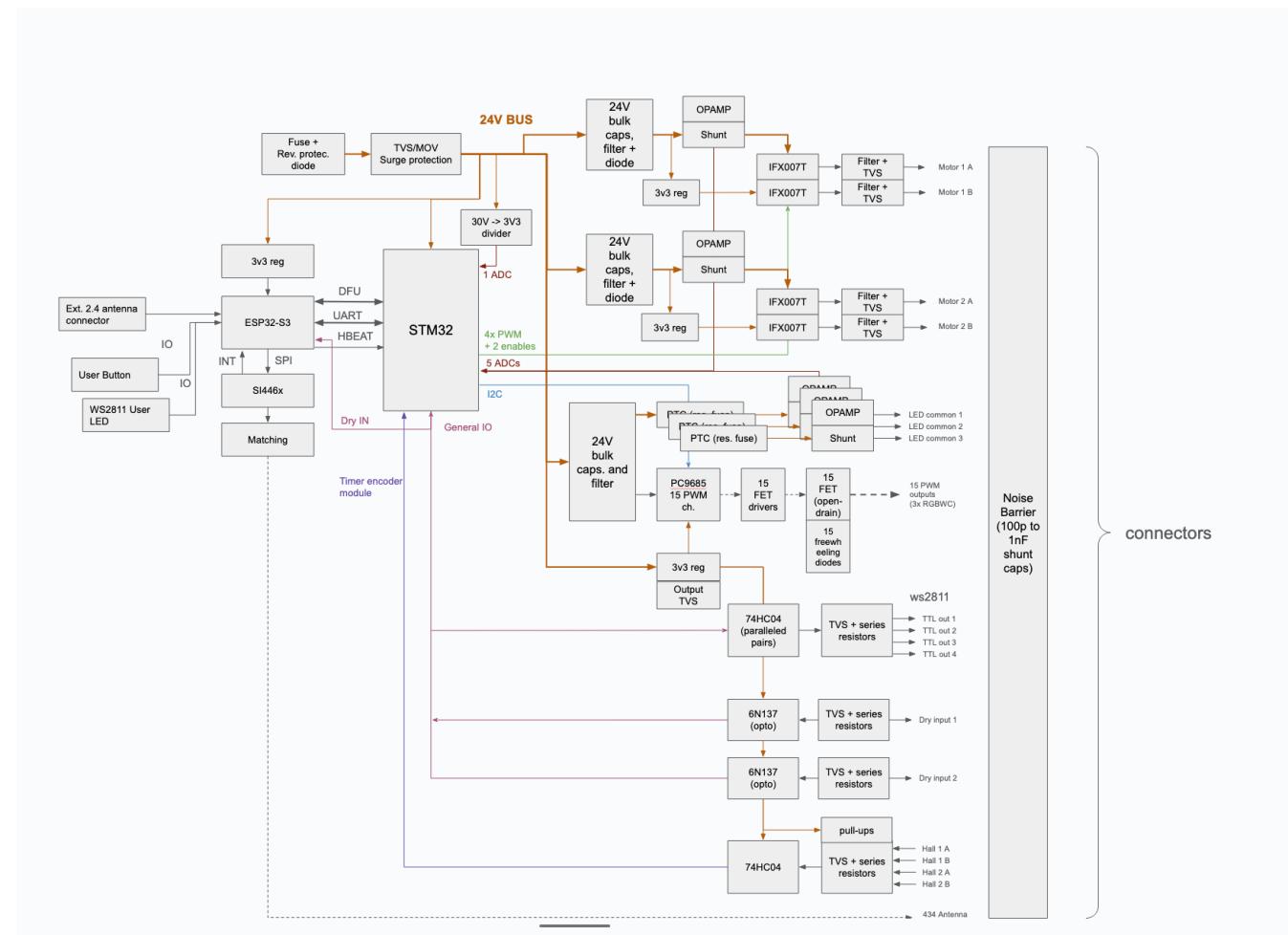
D

A

B

C

D



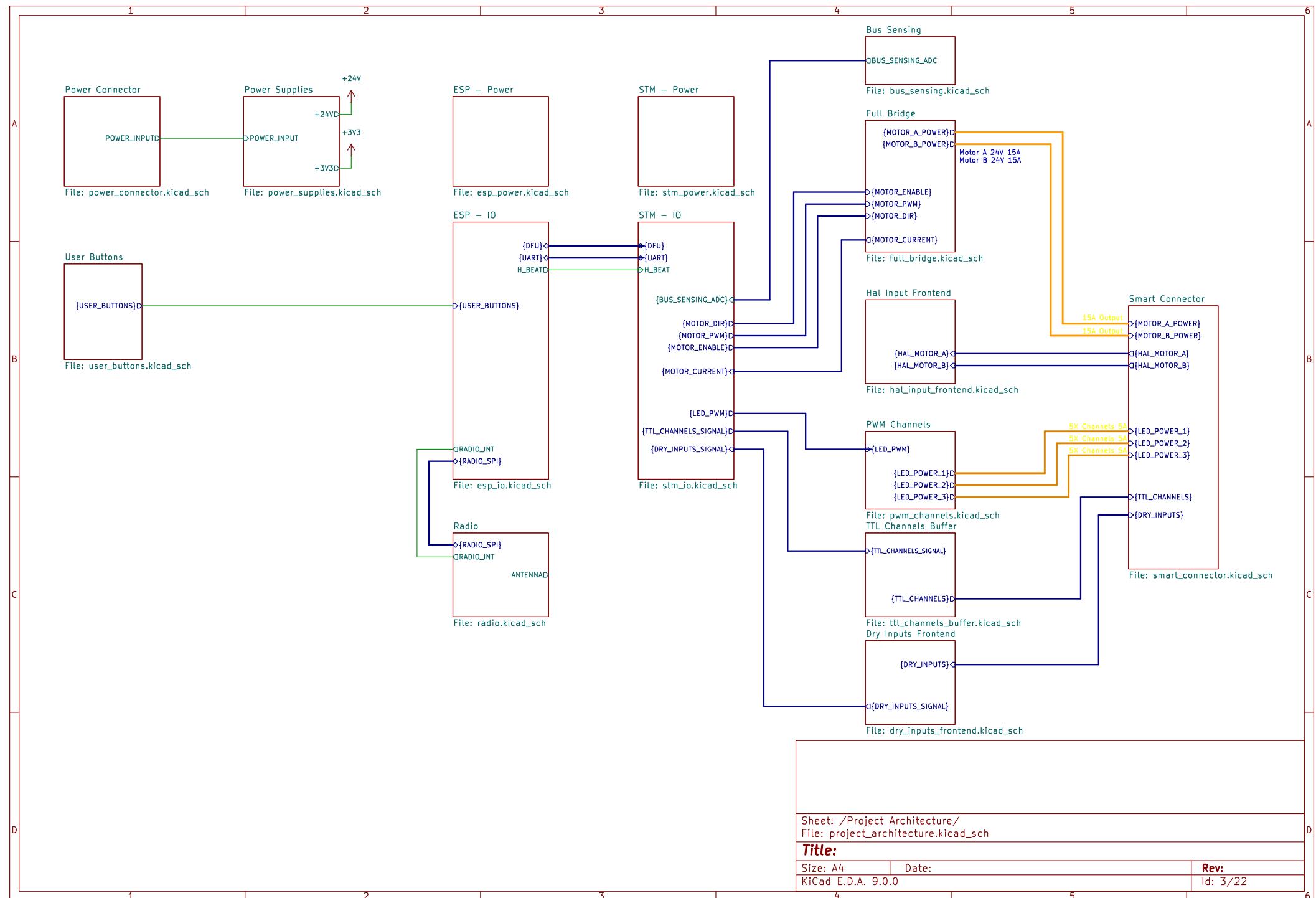
Sheet: /Block Diagram/
File: block_diagram.kicad_sch

Title:

Size: A4 | Date:

KiCad E.D.A. 9.0.0

Rev:
Id: 2/22



1 2 3 4 5 6

A

A

POWER_INPUTD

D+24V

D+3V3

B

B

C

C

D

D

Sheet: /Project Architecture/Power Supplies/
File: power_supplies.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 4/22

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

B

C

C

D

D

POWER_INPUT

Sheet: /Project Architecture/Power Connector/
File: power_connector.kicad_sch

Title:

Size: A4 | Date:
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Rev:
Id: 5/22

1 2 3 4 5 6

1

2

3

4

5

6

A

B

C

D

▷{USER_BUTTONS}

Sheet: /Project Architecture/User Buttons/
File: user_buttons.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 6/22

1

2

3

4

5

6

1 2 3 4 5 6

A

B

C

D

A

B

C

D

Sheet: /Project Architecture/ESP – Power/
File: esp_power.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 7/22

1 2 3 4 5 6

1 2 3 4 5 6

A

A

◇{USER_BUTTONS}

◇{DFU}
◇{UART}
◇H_BEAT

B

B

{RADIO_SPI}◇
RADIO_INT◇

C

C

D

D

Sheet: /Project Architecture/ESP - IO/
File: esp_io.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 8/22

1 2 3 4 5 6

1 2 3 4 5 6

A

B

C

D

A

B

C

D

Sheet: /Project Architecture/STM – Power/
File: stm_power.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 9/22

1 2 3 4 5 6

A

{DFU}◊

{UART}◊

H_BEAT◊

Q{BUS_SENSING_ADC}

D{MOTOR_DIR}

D{MOTOR_PWM}

D{MOTOR_ENABLE}

Q{MOTOR_CURRENT}

D{LED_PWM}

D{TTL_CHANNELS_SIGNAL}

Q{DRY_INPUTS_SIGNAL}

B

B

C

C

D

D

Sheet: /Project Architecture/STM - IO/
File: stm_io.kicad_sch

Title:

Size: A4 | Date:

KiCad E.D.A. 9.0.0

Rev:

Id: 10/22

1 2 3 4 5 6

A

A

{RADIO_SPI}◊

◊RADIO_INT

B

B

◊ANTENNA

C

C

D

D

Sheet: /Project Architecture/Radio/
File: radio.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 11/22

1 2 3 4 5 6

1 2 3 4 5 6

A

A

B

B

C

C

D

D

◁{LED_PWM}

{LED_POWER_1}▷
{LED_POWER_2}▷
{LED_POWER_3}▷

Sheet: /Project Architecture/PWM Channels/
File: pwm_channels.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 12/22

1 2 3 4 5 6

1 2 3 4 5 6

A

A

△{TTL_CHANNELS_SIGNAL}

{TTL_CHANNELS}△

B

B

C

C

D

D

Sheet: /Project Architecture/TTL Channels Buffer/
File: ttl_channels_buffer.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 13/22

1 2 3 4 5 6

1 2 3 4 5 6

A

A

{DRY_INPUTS_SIGNAL} ◇

◇{DRY_INPUTS}

B

B

C

C

D

D

Sheet: /Project Architecture/Dry Inputs Frontend/
File: dry_inputs_frontend.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 14/22

1 2 3 4 5 6

1

2

3

4

5

6

A

A

B

B

C

C

D

D

□{HAL_MOTOR_A}
□{HAL_MOTOR_B}

Sheet: /Project Architecture/Hal Input Frontend/
File: hal_input_frontend.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 15/22

1

2

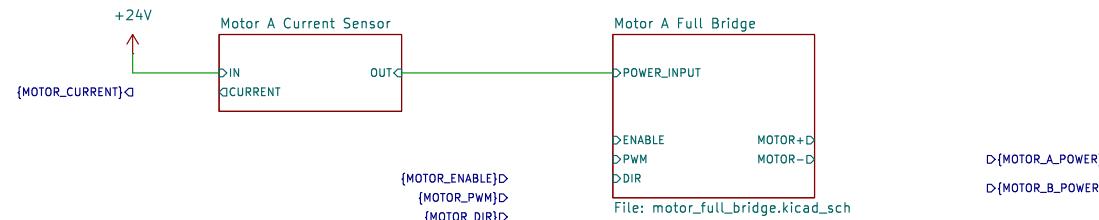
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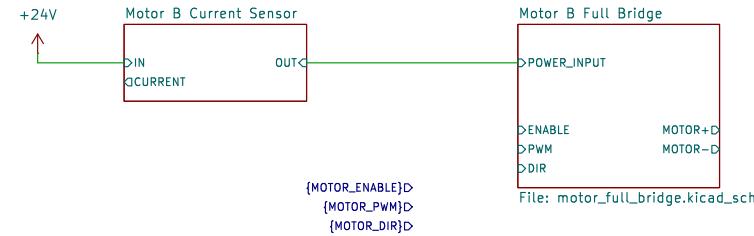
5

6

A



B



C

D

Sheet: /Project Architecture/Full Bridge/
File: full_bridge.kicad_sch

Title:

Size: A4 Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 16/22

A

A

{MOTOR_A_POWER}D
{MOTOR_B_POWER}D

{HAL_MOTOR_B}G
{HAL_MOTOR_A}G

B

B

{LED_POWER_1}D
{LED_POWER_2}D
{LED_POWER_3}D

{TTL_CHANNELS}D
{DRY_INPUTS}D

C

C

D

D

Sheet: /Project Architecture/Smart Connector/
File: smart_connector.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 17/22

1 2 3 4 5 6

A

POWER_INPUT▷

▷ MOTOR+
▷ MOTOR-

B

ENABLED
PWMD
DIR▷

C

D

A

B

C

D

Sheet: /Project Architecture/Full Bridge/Motor A Full Bridge/
File: motor_full_bridge.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 18/22

1 2 3 4 5 6

1 2 3 4 5 6

A

POWER_INPUT▷

▷ MOTOR+
▷ MOTOR-

B

ENABLED
PWMD
DIR▷

C

D

A

B

C

D

Sheet: /Project Architecture/Full Bridge/Motor B Full Bridge/
File: motor_full_bridge.kicad_sch

Title:

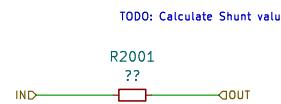
Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 19/22

1 2 3 4 5 6

A

A



B

B

DCURRENT

C

C

D

D

Sheet: /Project Architecture/Full Bridge/Motor A Current Sensor/
File: motor_current_sensor.kicad_sch

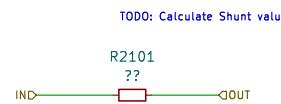
Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 20/22

A

A



B

B

DCURRENT

C

C

D

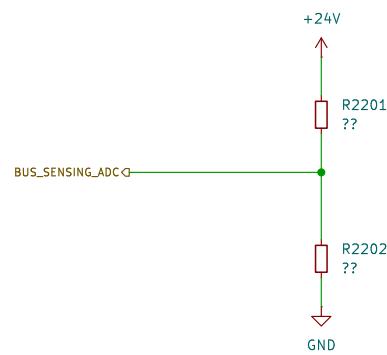
D

Sheet: /Project Architecture/Full Bridge/Motor B Current Sensor/
File: motor_current_sensor.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 21/22



Sheet: /Project Architecture/Bus Sensing/
File: bus_sensing.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. 9.0.0

Rev:
Id: 22/22