

Rapid-CoreX

Designer : AR Lipson

Index

• • • • • • • • • •

Cover Page

Block_Diagram

Project_Architecture

Power - Generation

MCU

Sensing - Hum_Temp

GPIO

Comm - Isolated_CAN

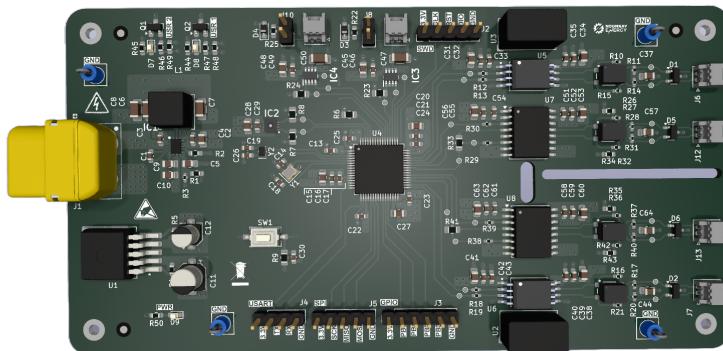
Comm - LIN

Comm - Isolated_RS-485

DATE : 09/09/2024

REV : 1.0.0

Top Side



Bottom Side



DESIGN NOTE:
Example text for informational design notes.

DESCRIPTION:
Description about How it can be used.

LAYOUT NOTE:
Example text for critical layout guidelines.

Part No:
Put part no of the component

Block_Diagram

Project_Architecture

project architecture , block diagram , additional pages need to be mentioned

Sheet: /
File: Rapid_Core-RCP.kicad_sch

Title: Rapid-Core

Size: A4 Date: 2024-09-09
KiCad E.D.A. 8.0.5

Rev: 1.0.1
Id: 1/12

[2] Block_Diagram

A

A

B

B

C

C

D

D

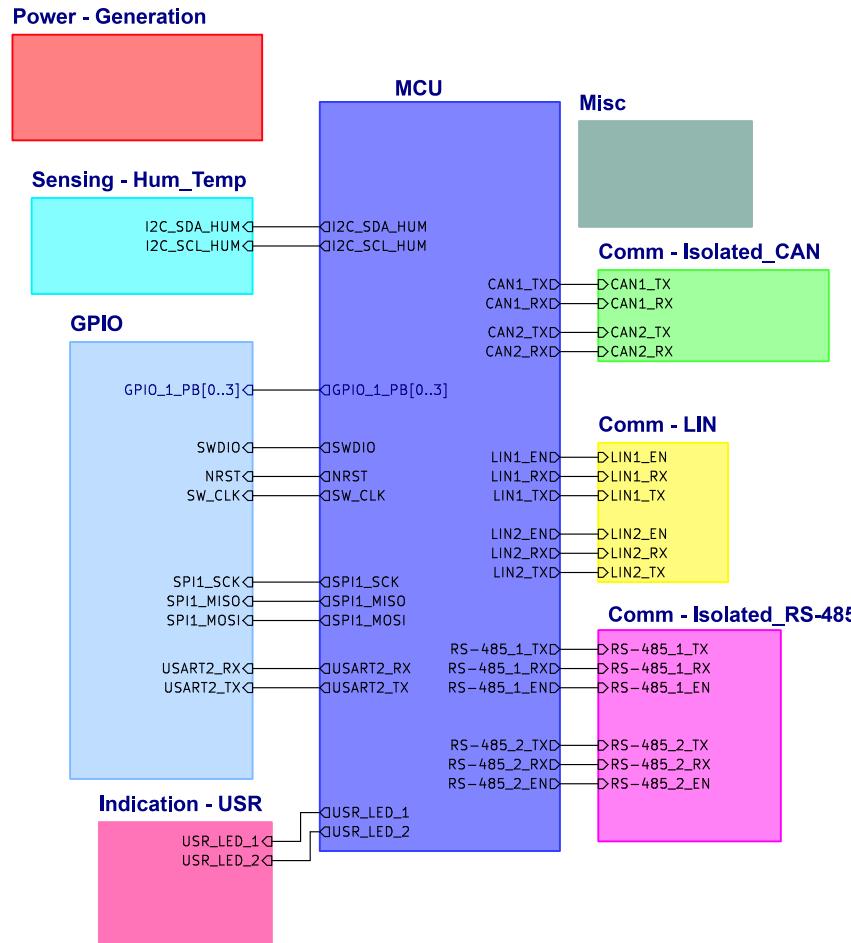
Sheet: /Block_Diagram/
File: Block_Diagram.kicad_sch

Title: Rapid-Core

Size: A4 | Date: 2024-09-09
KiCad E.D.A. 8.0.5

Rev: 1.0.1
Id: 2/12

[3] Project_Architecture



Sheet: /Project_Architecture/
File: Project_Architecture.kicad_sch

Title: Rapid-Core

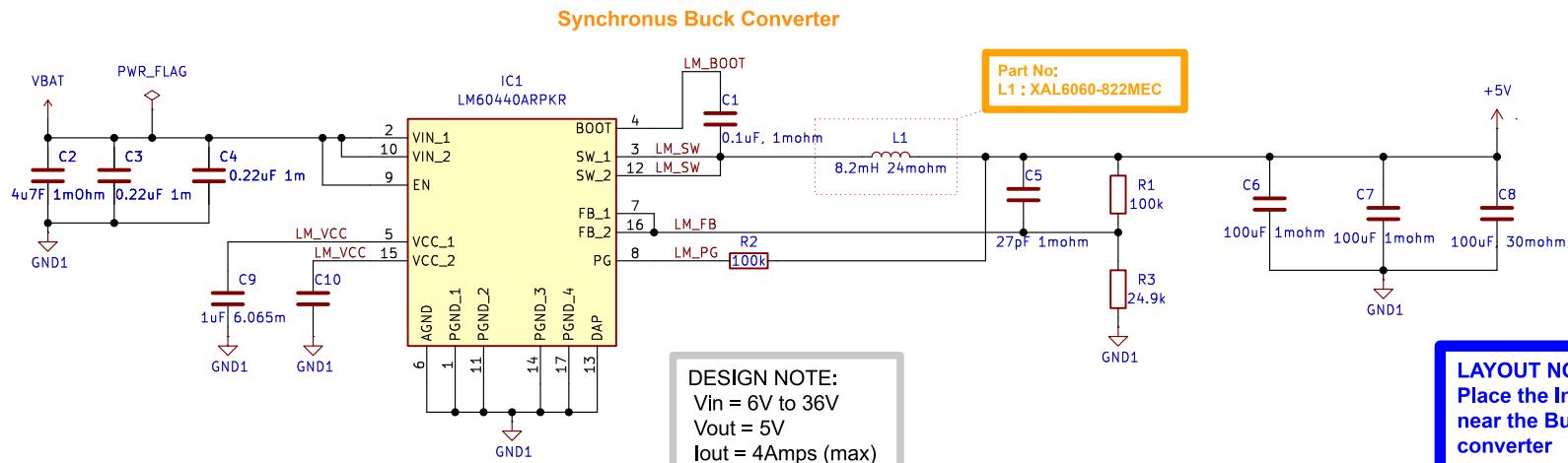
Size: A4 | Date: 2024-09-09

KiCad E.D.A. 8.0.5

Rev: 1.0.1

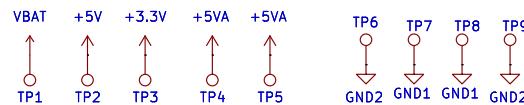
Id: 3/12

[4] Power - Generation

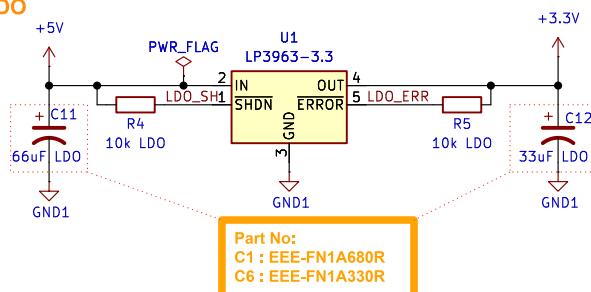


Ref : Refered from WEBENCH TI

Test Points

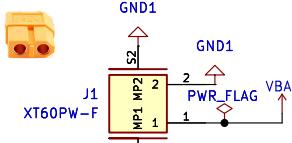
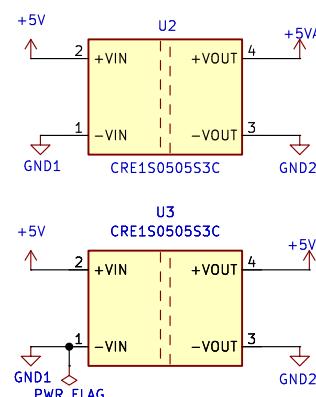


LDO



Ref : Refered From the Data_sheet

Isolated Power Supply



DESIGN NOTE:
MAX of 44v can be applied

DESIGN NOTE:
Do not hot-plug when powered!

Sheet: /Project_Architecture/Power - Generation/
File: Power - Generation.kicad_sch

Title: Rapid-Core

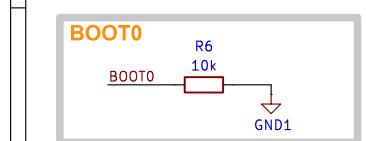
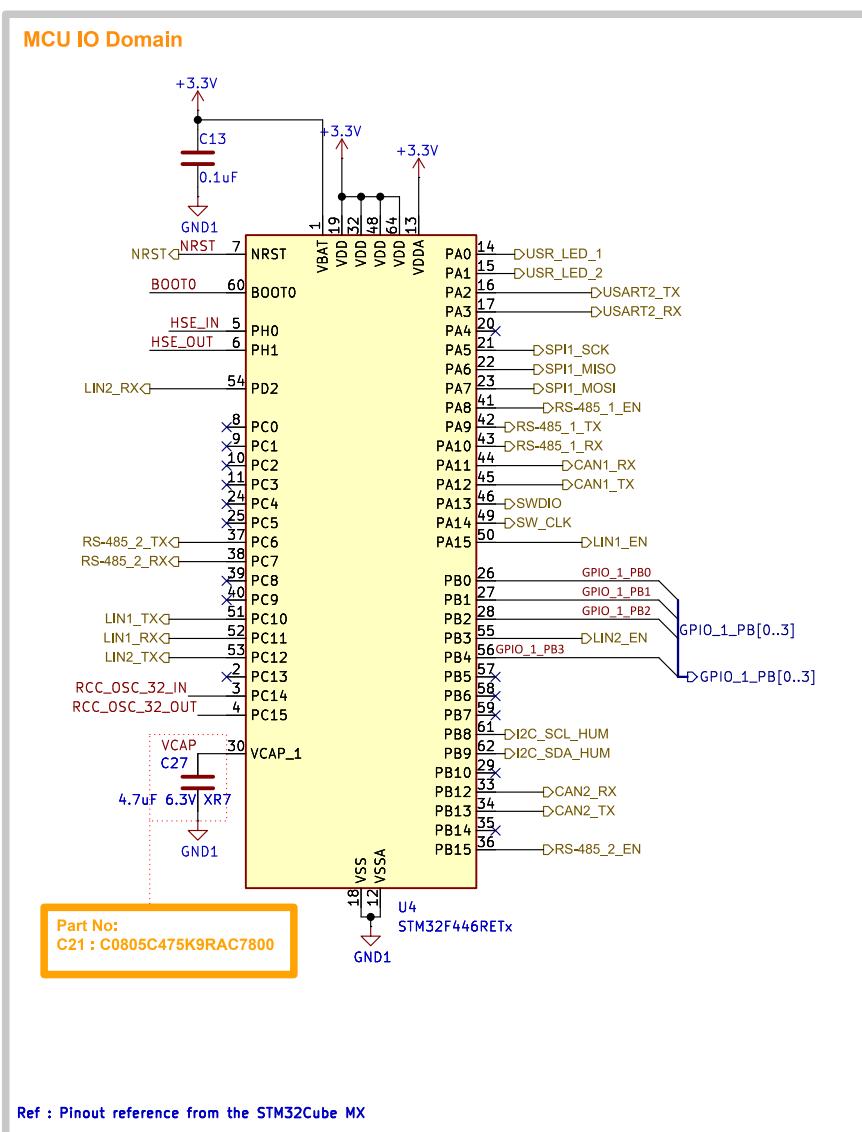
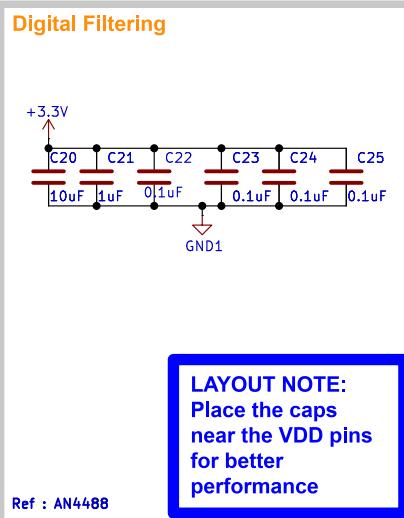
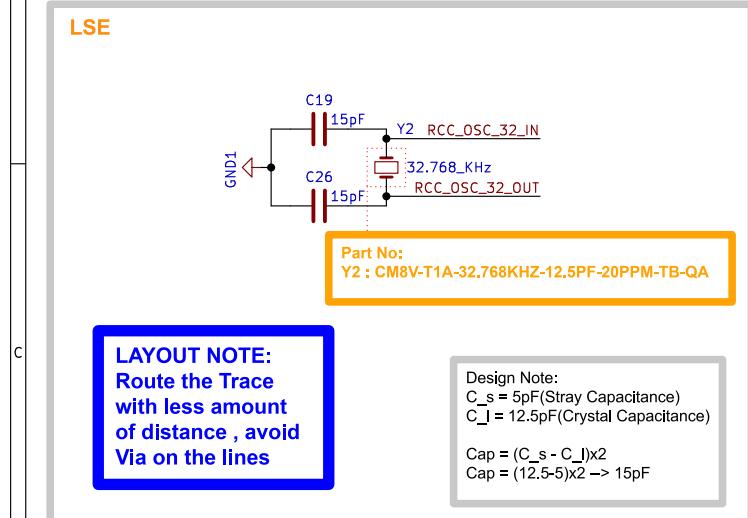
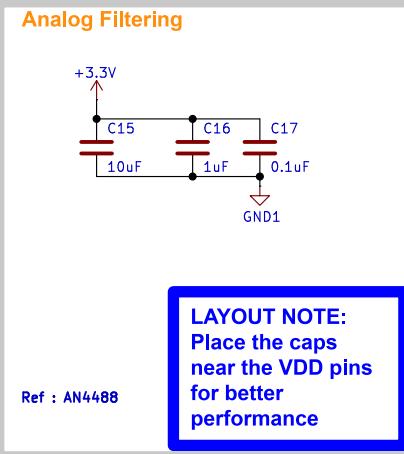
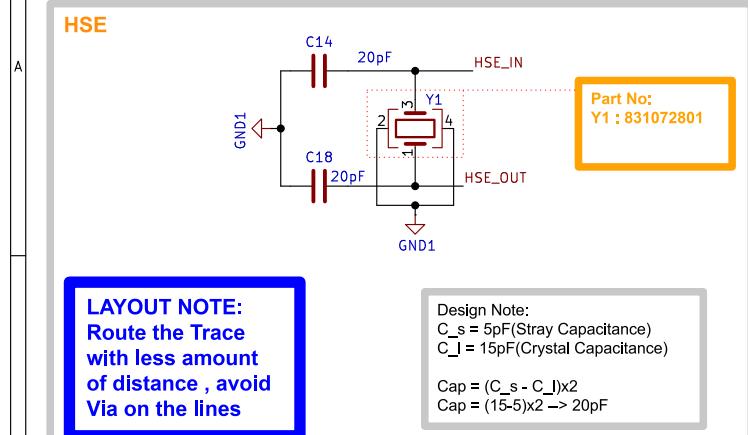
Size: A4 Date: 2024-09-09

KiCad E.D.A. 8.0.5

Rev: 1.0.1

Id: 4/12

[5] MCU



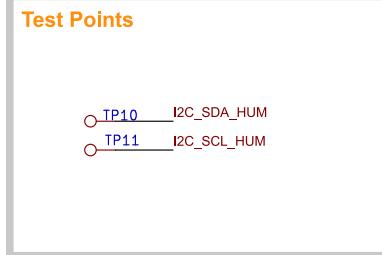
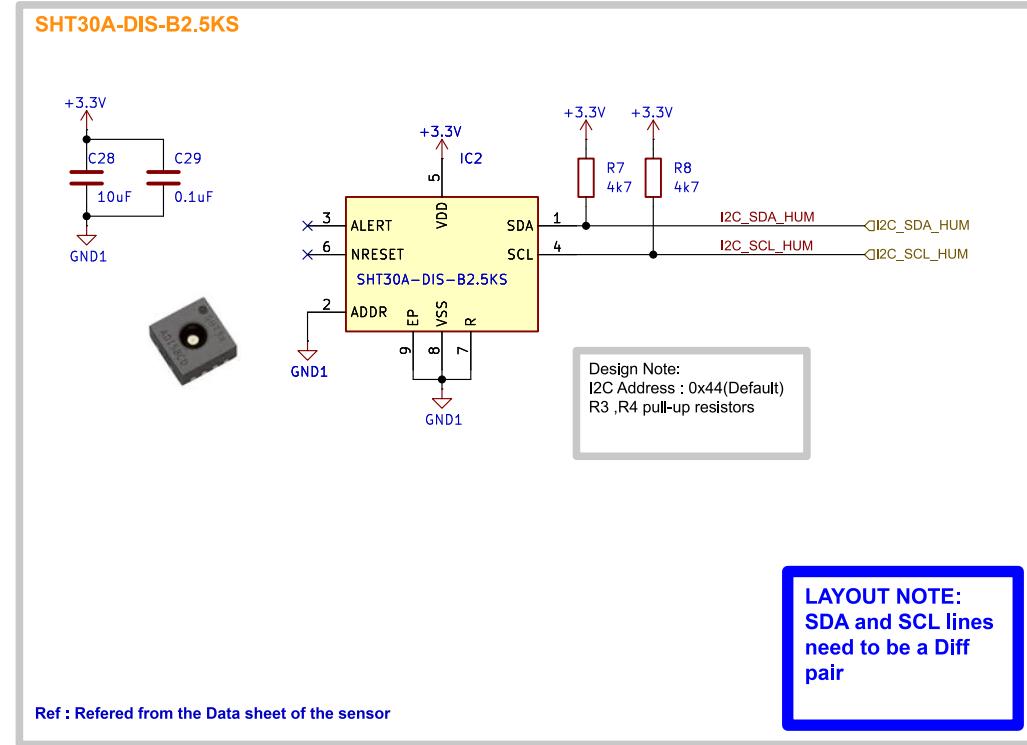
Sheet: /Project_Architecture/MCU/
 File: MCU.kicad_sch

Title: Rapid-Core

Size: A4 Date: 2024-09-09
 KiCad E.D.A. 8.0.5

Rev: 1.0.1
 Id: 5/12

[6] Sensing - Hum_Temp



Sheet: /Project_Architecture/Sensing – Hum_Temp/
File: Sensing – Hum_Temp.kicad_sch

Title: Rapid–Core

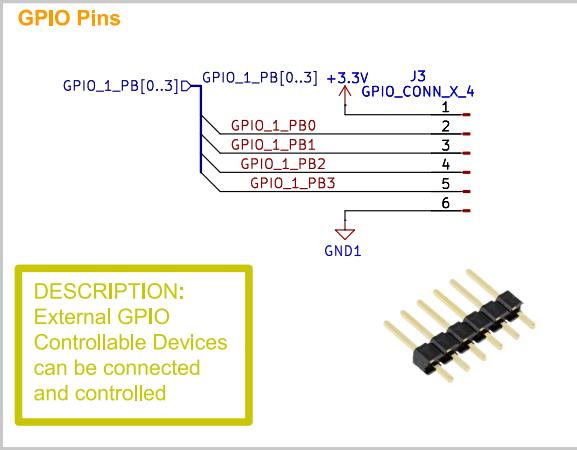
Size: A4 Date: 2024–09–09
KiCad E.D.A. 8.0.5

Rev: 1.0.1
Id: 6/12

[7] GPIO

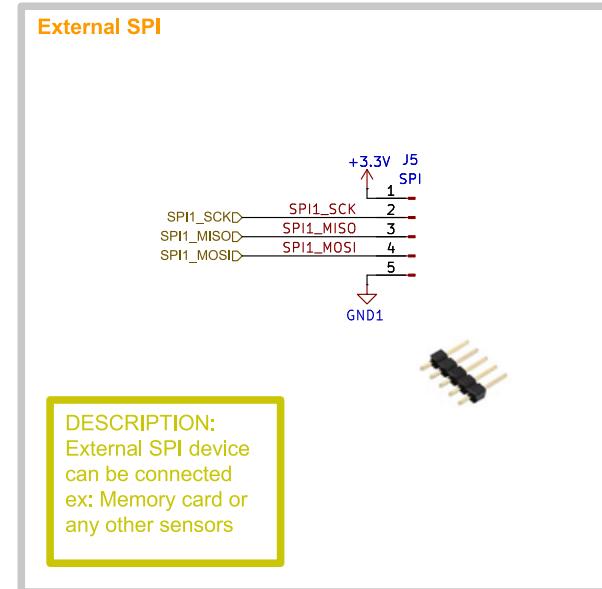
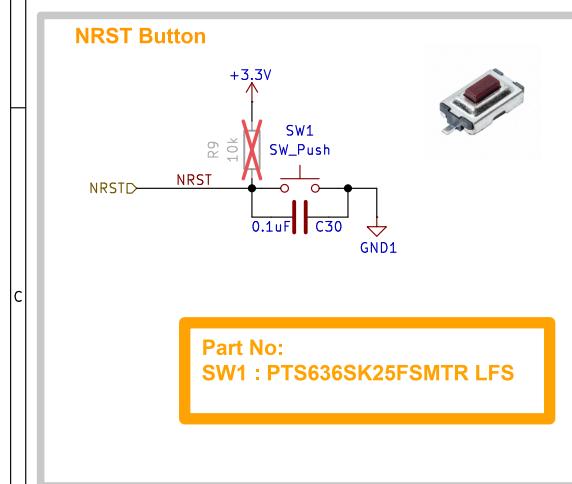
A

A



B

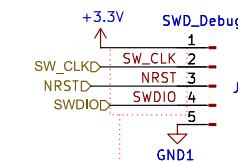
B



D

D

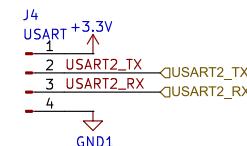
SWD Debug



DESCRIPTION:
Debug Interface for
MCU

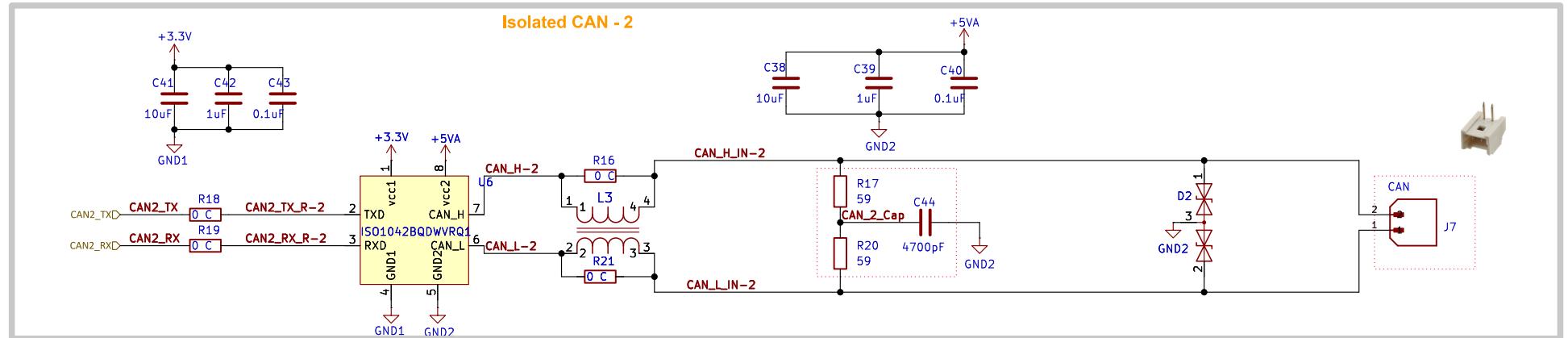
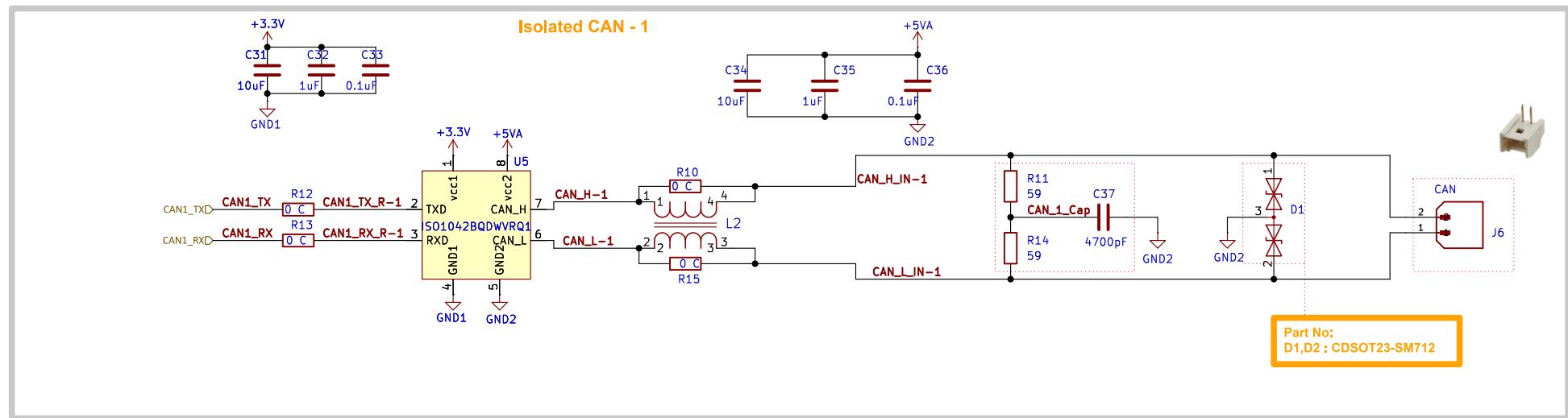
LAYOUT NOTE:
Do not use via on
clk and IO line

External USART/UART



DESCRIPTION:
External
USART/UART
device can be
connected ex:
Memory card or any
other sensors

[8] Comm - Isolated_CAN



Test Points CAN - 1

- TP12 CAN1_TX
- TP13 CAN1_RX
- TP14 CAN_H_IN-1
- TP15 CAN_L_IN-1

Sheet: /Project_Architecture/Comm - Isolated_CAN/
File: Comm - Isolated_CAN.kicad_sch

Title: Rapid-Core

Size: A4 Date: 2024-09-09
KiCad E.D.A. 8.0.5

Rev: 1.0.1
Id: 8/12

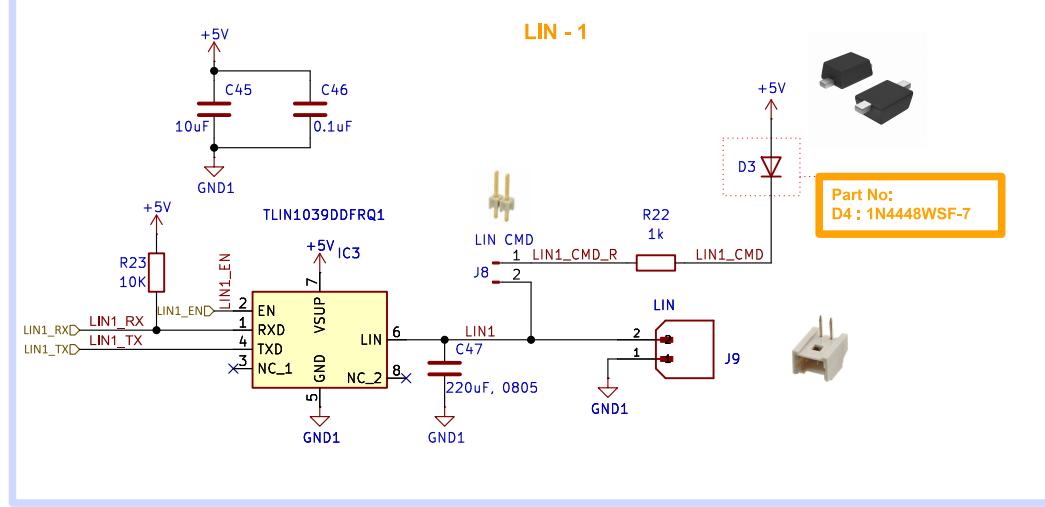
Test Points CAN - 2

- TP16 CAN2_TX

[9] Comm - LIN

Test Points LIN - 1

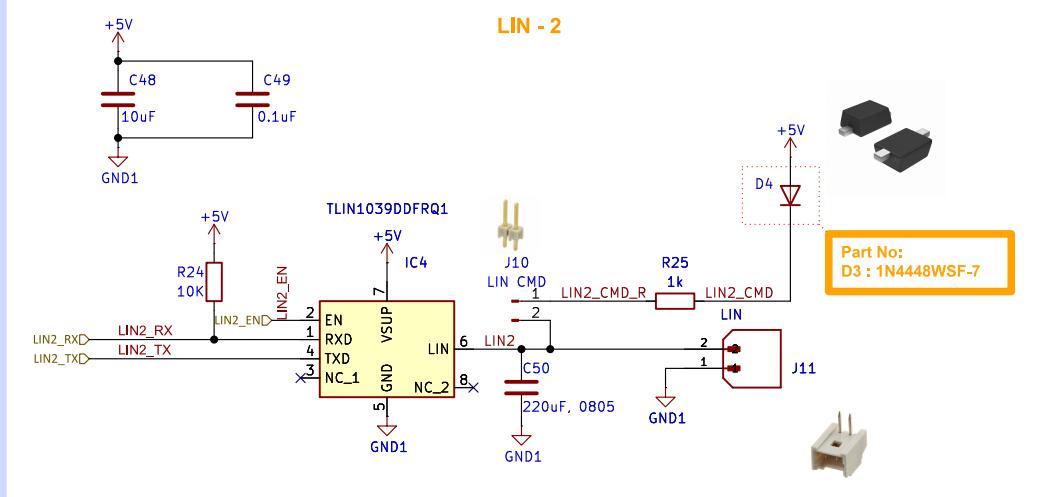
- TP20 LIN1_RX
- TP21 LIN1_TX
- TP22 LIN1_EN
- TP23 LIN1



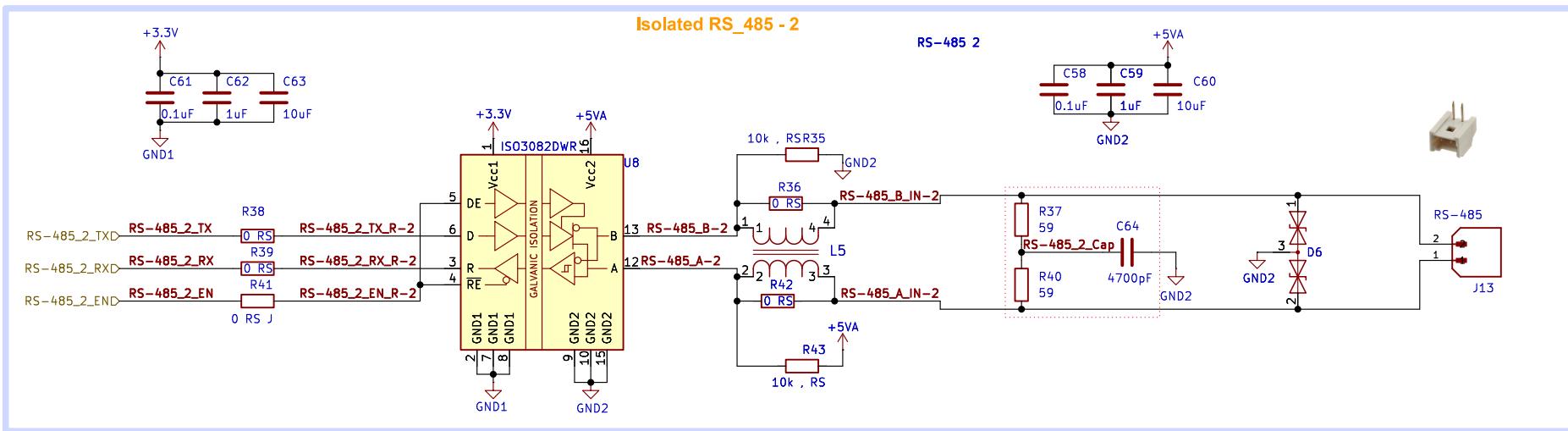
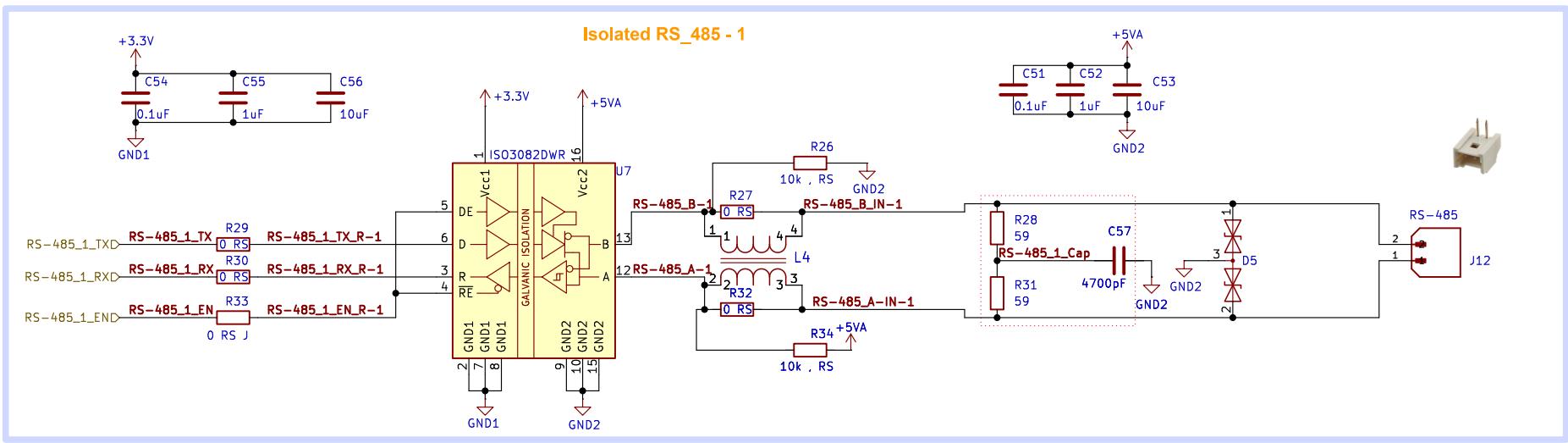
DESIGN NOTE:
 1. If J9 is closed the transceiver acts a Commander.
 2. If J9 is open the transceiver acts a Responder.

Test Points LIN - 2

- TP24 LIN2_RX
- TP25 LIN2_TX
- TP26 LIN2_EN
- TP27 LIN2



[10] Comm - Isolated_RS-485



Test Points RS_485 - 1

- TP28 RS-485_1_TX
- TP29 RS-485_1_RX
- TP30 RS-485_1_EN
- TP31 RS-485_B_IN-1
- TP32 RS-485_A_IN-1
- TP33 RS-485_2_TX
- TP34 RS-485_2_RX
- TP35 RS-485_2_EN
- TP36 RS-485_B_IN-2
- TP37 RS-485_A_IN-2

Test Points RS_485 - 2

Sheet: /Project_Architecture/Comm - Isolated_RS-485/
File: Comm - Isolated_RS-485.kicad_sch

Title: Rapid-Core

Size: A4 Date: 2024-09-09

KiCad E.D.A. 8.0.5

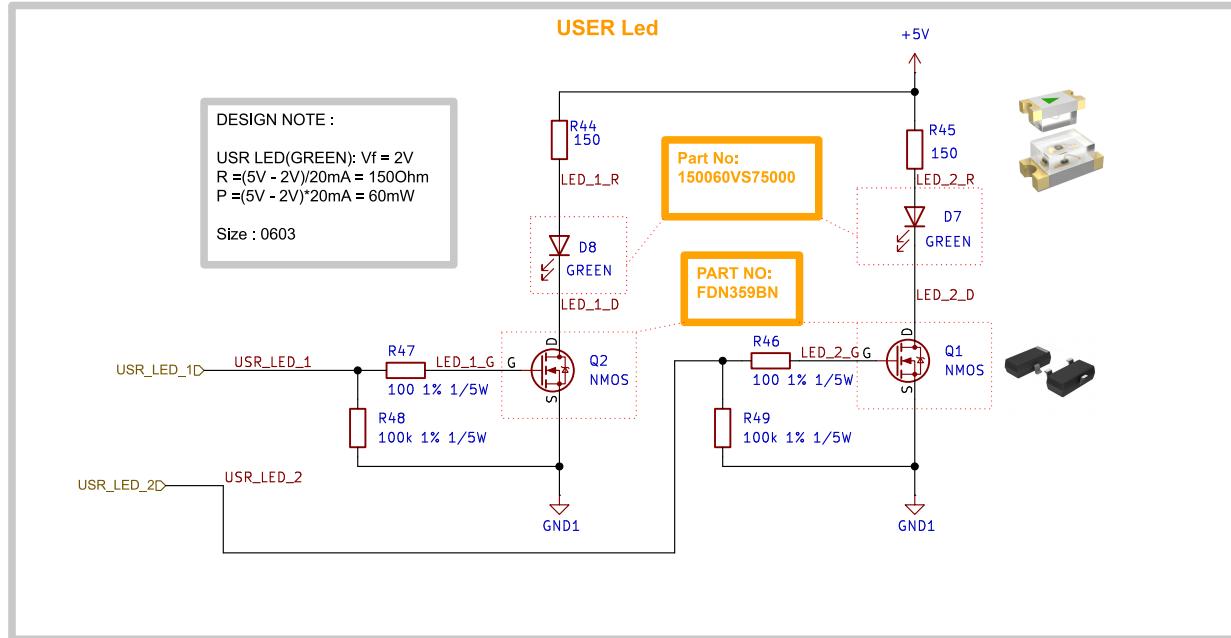
Rev: 1.0.1

Id: 10/12

[11] Indication - USR

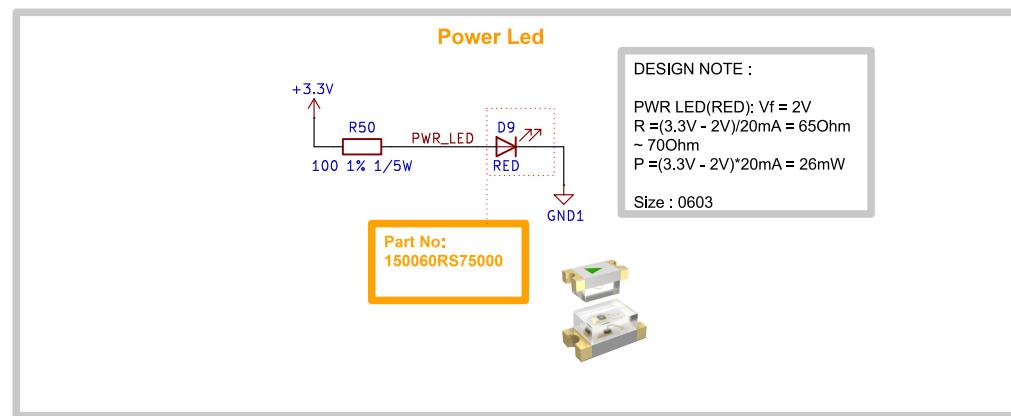
A

A



B

B



D

D

Sheet: /Project_Architecture/Indication - USR/
 File: Indication - USR.kicad_sch

Title: Rapid-Core

Size: A4 | Date: 2024-09-09
 KiCad E.D.A. 8.0.5

Rev: 1.0.1
 Id: 11/12

[12] Misc

A

A

B

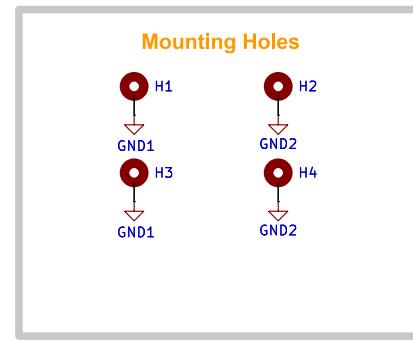
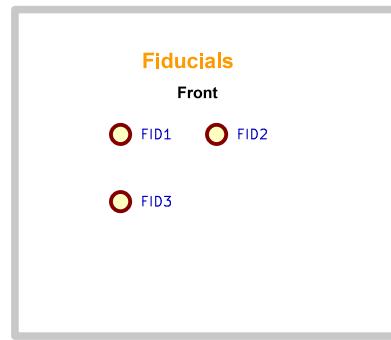
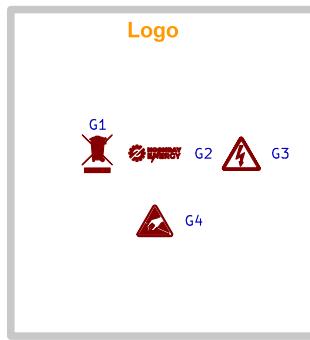
B

C

C

D

D



Sheet: /Project_Architecture/Misc/
File: Misc.kicad_sch

Title: Rapid-Core

Size: A4 | Date: 2024-09-09
KiCad E.D.A. 8.0.5

Rev: 1.0.1
Id: 12/12