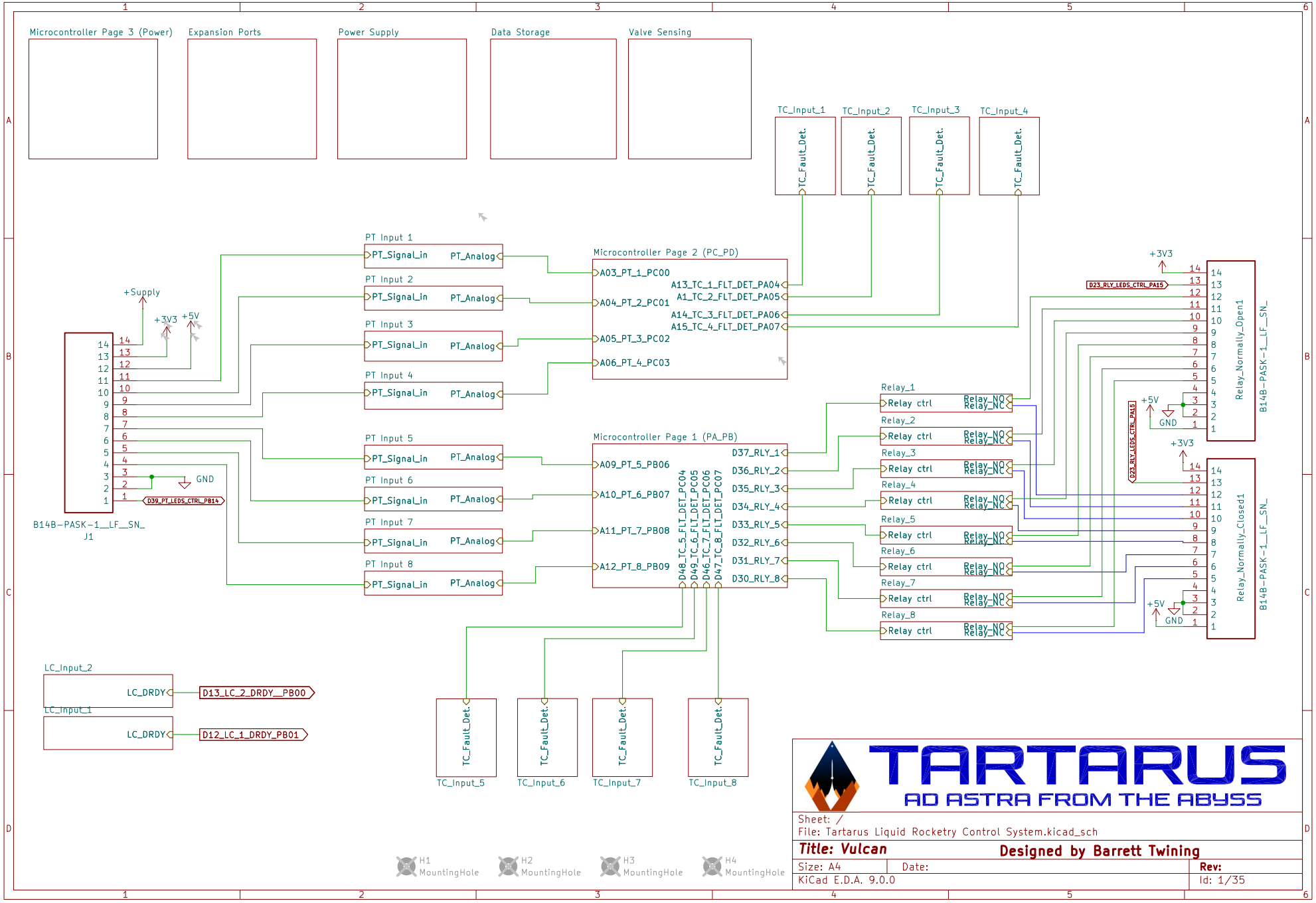
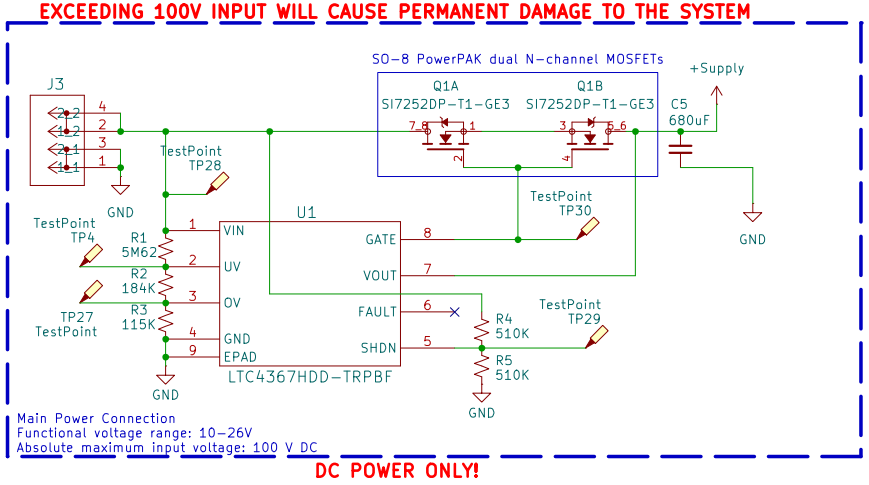
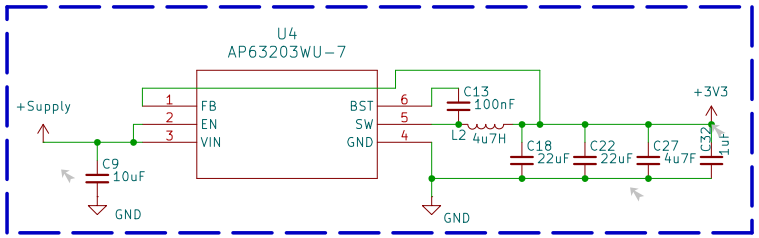
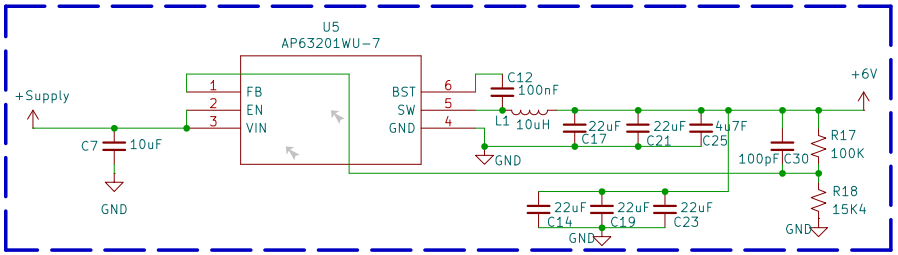

Microcontroller Page 3 (Power)
Expansion Ports
Power Supply
Data Storage
Valve Sensing
TC_Input_1
TC_Input_2
TC_Input_3
TC_Input_4
TC_Fault_Det.
PT Input 1
PT Input 2
PT Input 3
PT Input 4
PT Input 5
PT Input 6
PT Input 7
PT Input 8
PT_Signal_in
PT_Analog
+Supply
+3V3
+5V
GND
B14B-PASK-1__LF__SN_
J1
D39_PT_LEDS_CTRL_PB14
Microcontroller Page 2 (PC_PD)
A03_PT_1_PC00
A04_PT_2_PC01
A05_PT_3_PC02
A06_PT_4_PC03
A13_TC_1_FLT_DET_PA04
A1_TC_2_FLT_DET_PA05
A14_TC_3_FLT_DET_PA06
A15_TC_4_FLT_DET_PA07
Microcontroller Page 1 (PA_PB)
A09_PT_5_PB06
A10_PT_6_PB07
A11_PT_7_PB08
A12_PT_8_PB09
D48_TC_5_FLT_DET_PC04
D49_TC_6_FLT_DET_PC05
D46_TC_7_FLT_DET_PC06
D47_TC_8_FLT_DET_PC07
D37_RLY_1
D36_RLY_2
D35_RLY_3
D34_RLY_4
D33_RLY_5
D32_RLY_6
D31_RLY_7
D30_RLY_8
Relay_1
Relay_2
Relay_3
Relay_4
Relay_5
Relay_6
Relay_7
Relay_8
Relay ctrl
Relay_NO
Relay_NC
D23_RLY_LEDS_CTRL_PA15
Relay_Normally_Open1
Relay_Normally_Closed1
B14B-PASK-1__LF__SN_
LC_Input_2
LC_Input_1
LC_DRDY
D13_LC_2_DRDY__PB00
D12_LC_1_DRDY_PB01
TC_Input_5
TC_Input_6
TC_Input_7
TC_Input_8
H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole
TARTARUS
AD ASTRA FROM THE ABYSS
Sheet: /
File: Tartarus Liquid Rocketry Control System.kicad_sch
Title: Vulcan
Designed by Barrett Twining
Size: A4
Date:
Rev:
KiCad E.D.A. 9.0.0
Id: 1/35

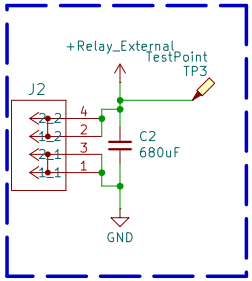
WARNING!
EXCEEDING 100V INPUT WILL CAUSE PERMANENT DAMAGE TO THE SYSTEM

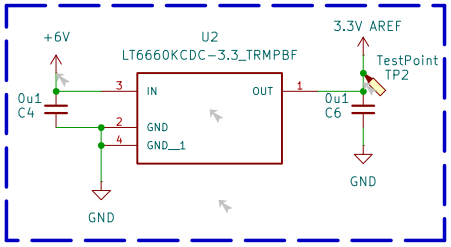


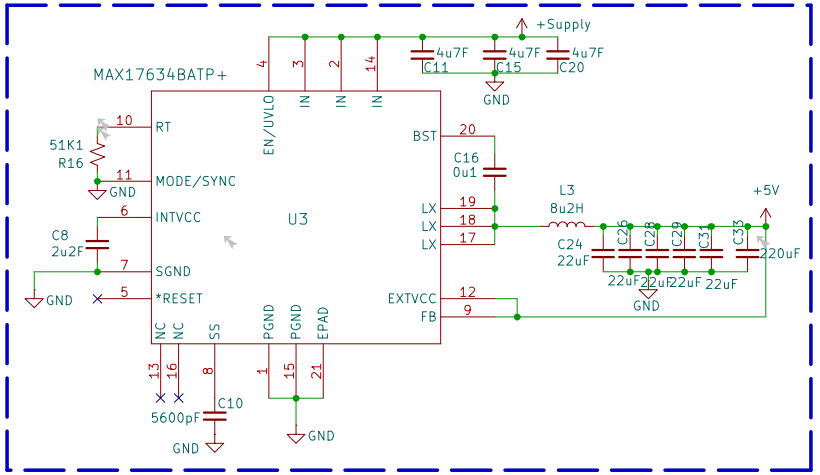
DC POWER ONLY!

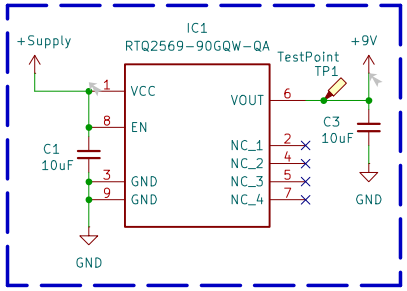


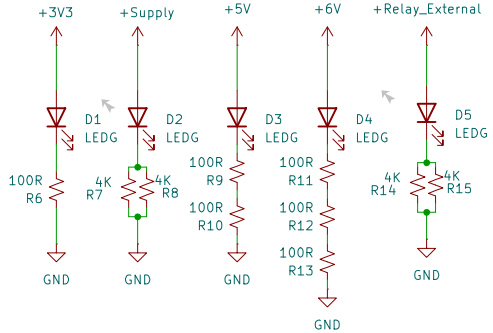










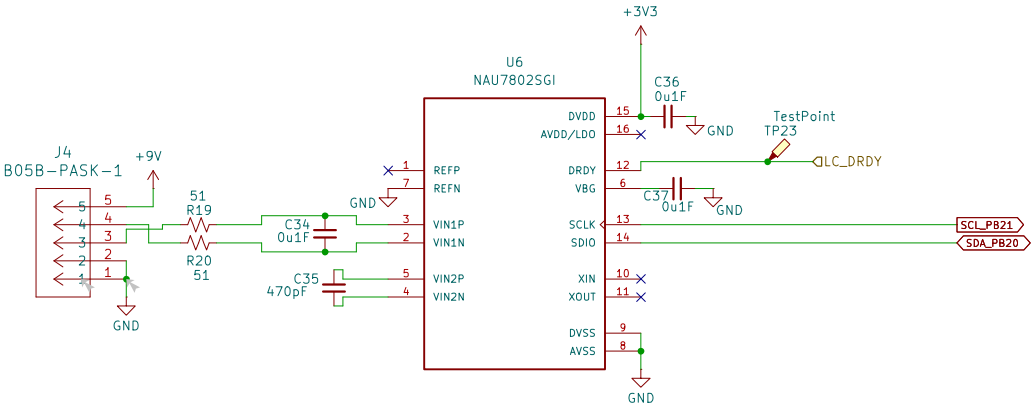


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /Power Supply/
File: Liquid Rocketry Power Supplies.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 2/35

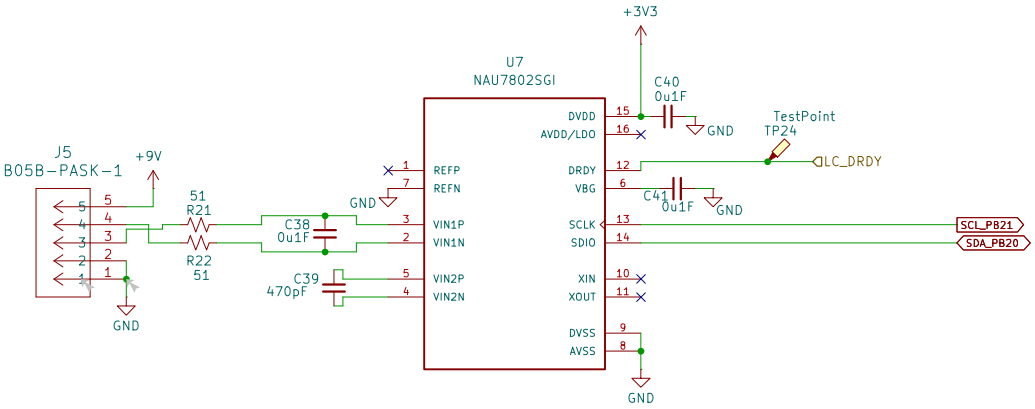


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /LC_Input_1/
File: page3.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 3/35



TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /LC_Input_2/
File: page3.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 4/35

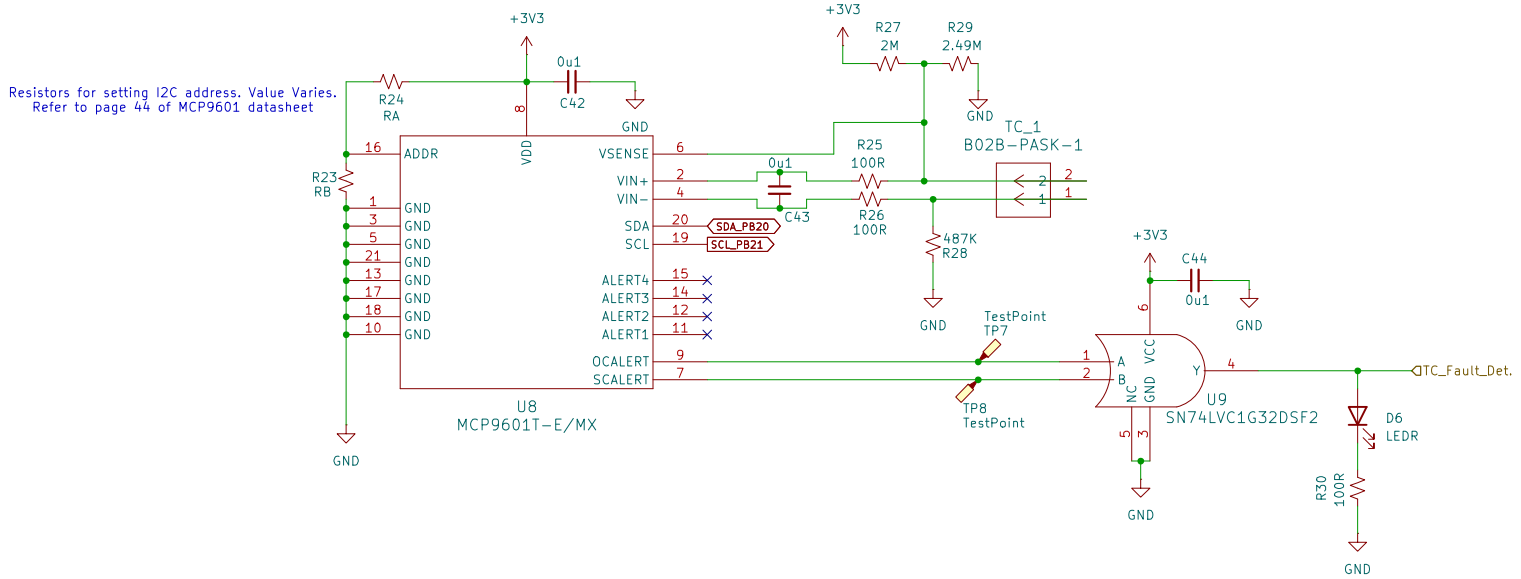


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_1/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 5/35

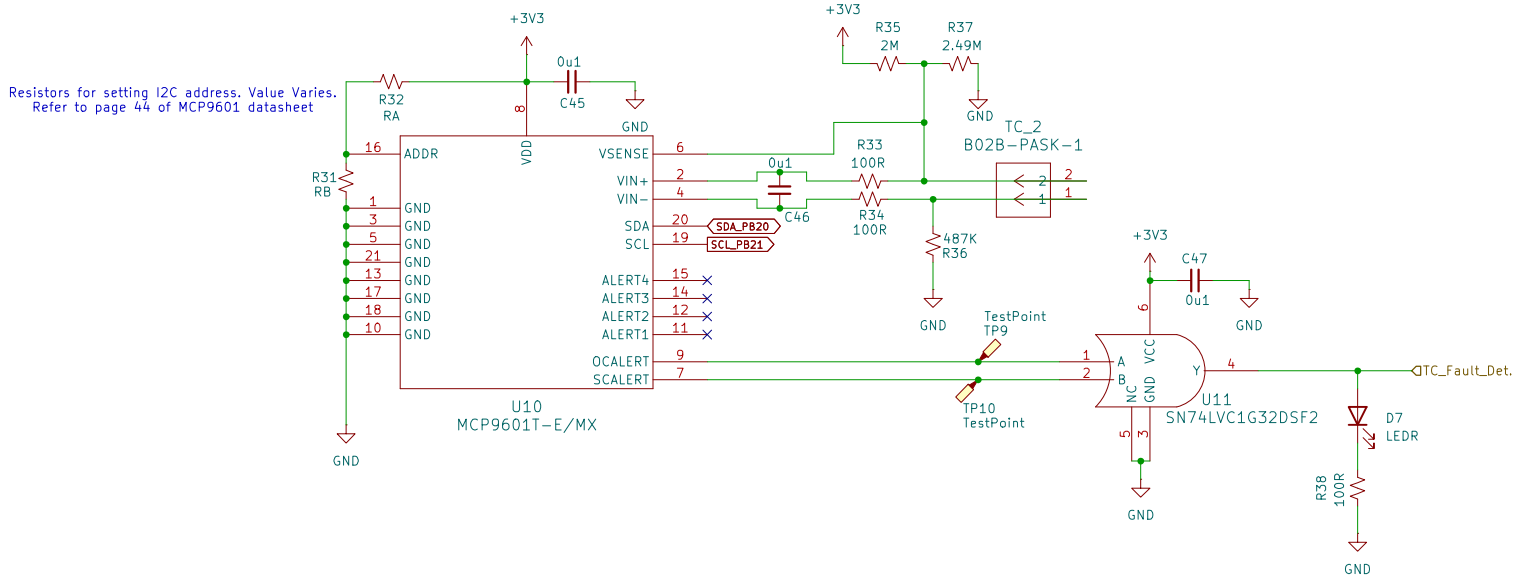


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_2/
File: TC_Input_1.kicad_sch

Title:

Size: A4 | Date: | **Rev:**
KiCad E.D.A. 9.0.0 | Id: 6/35

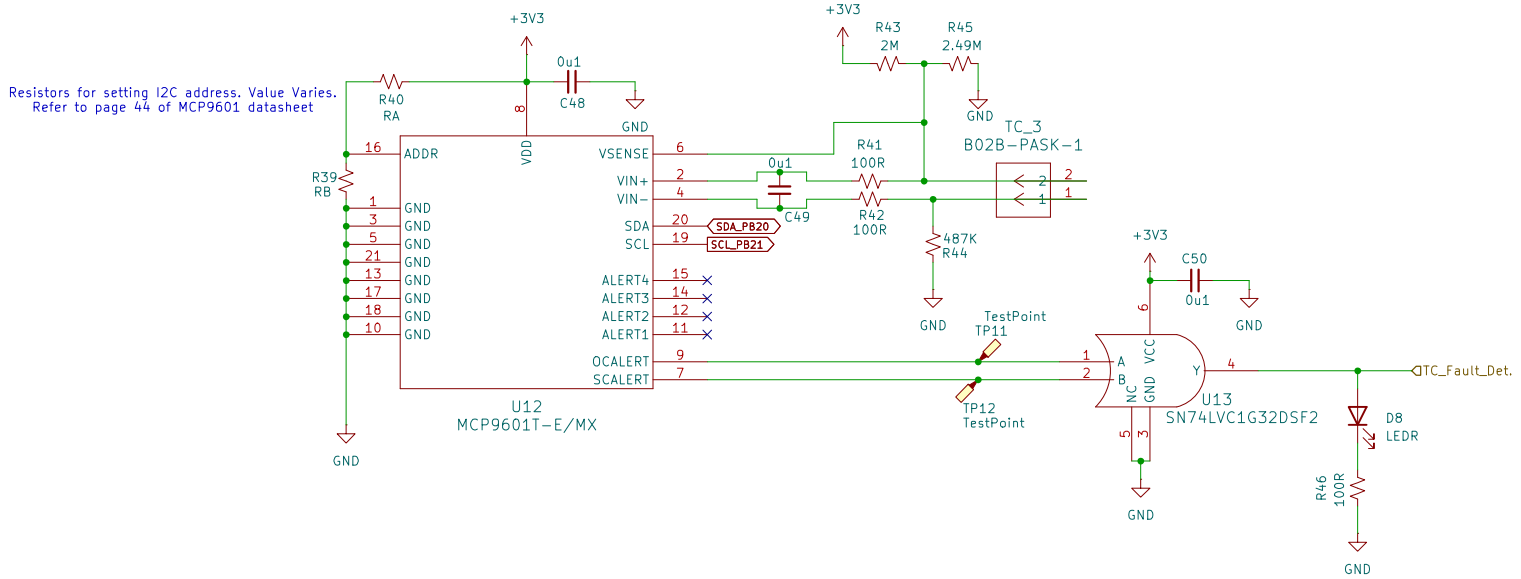


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_3/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 7/35

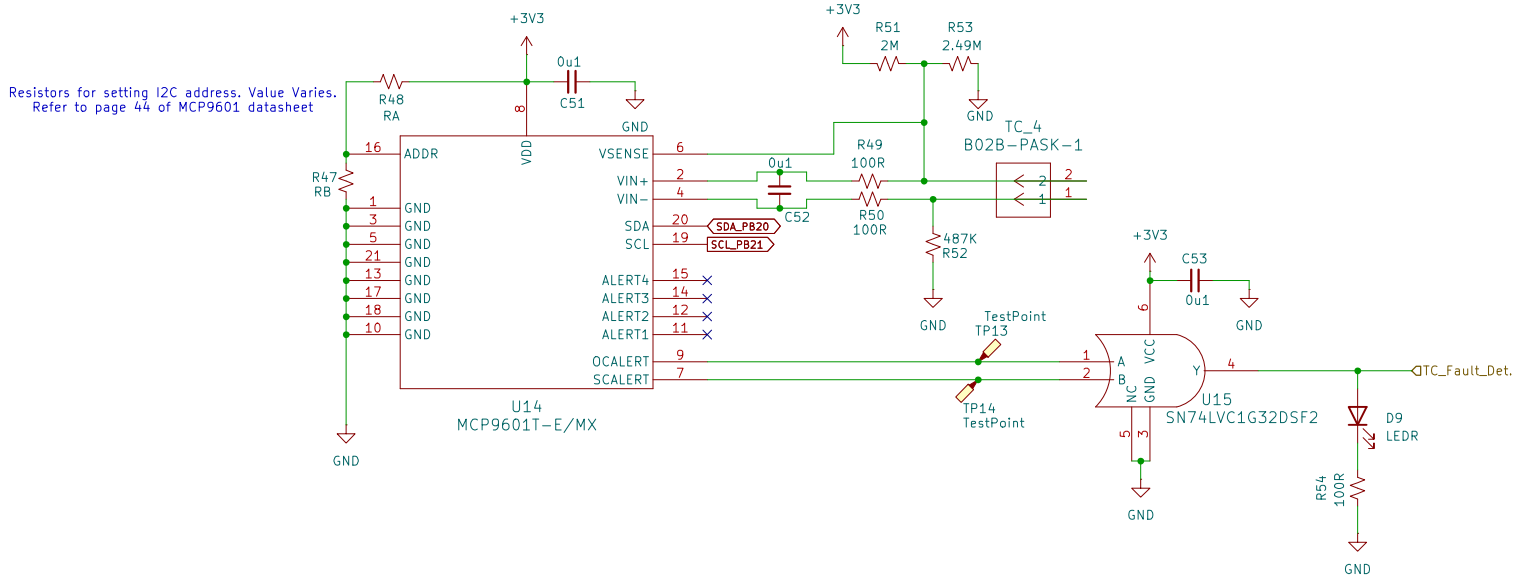


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_4/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 8/35

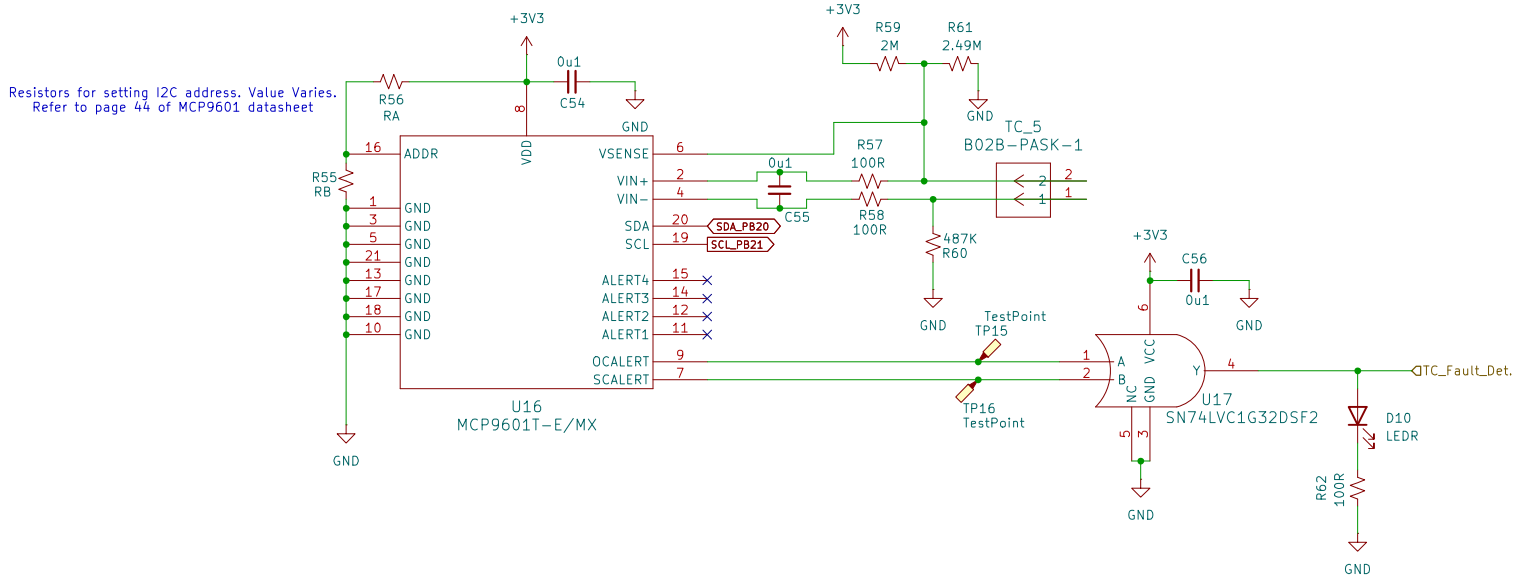


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_5/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 9/35

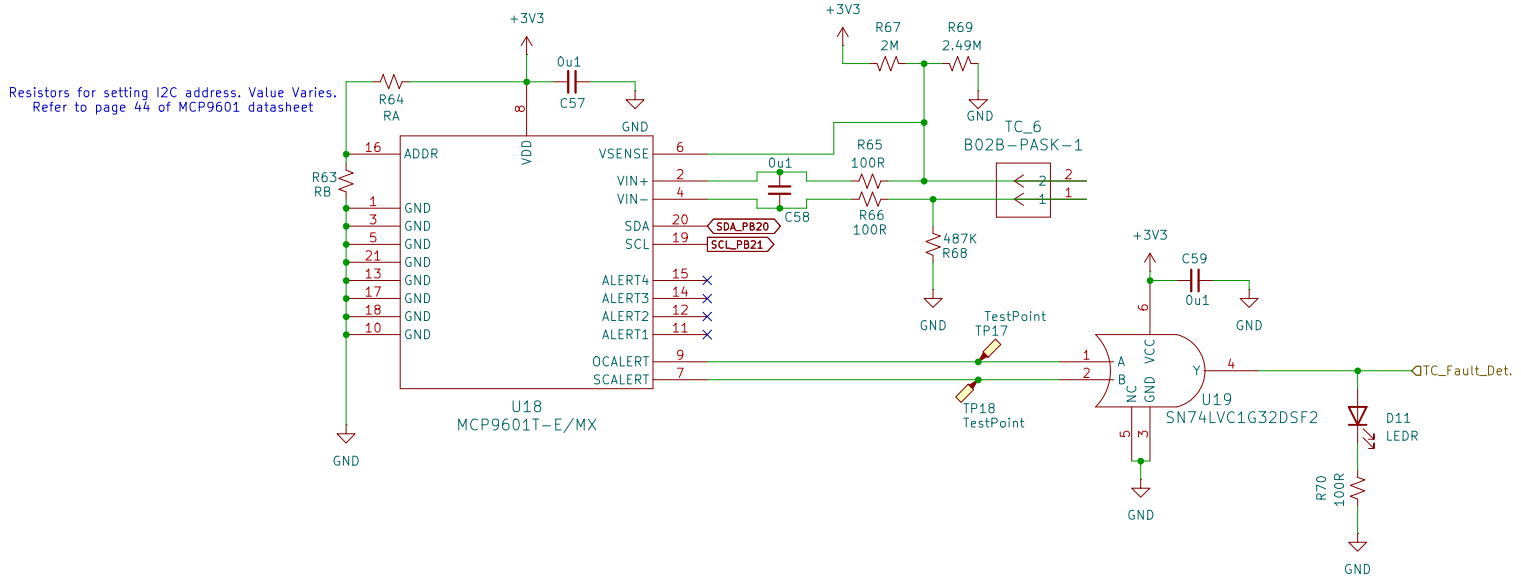


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_6/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 10/35

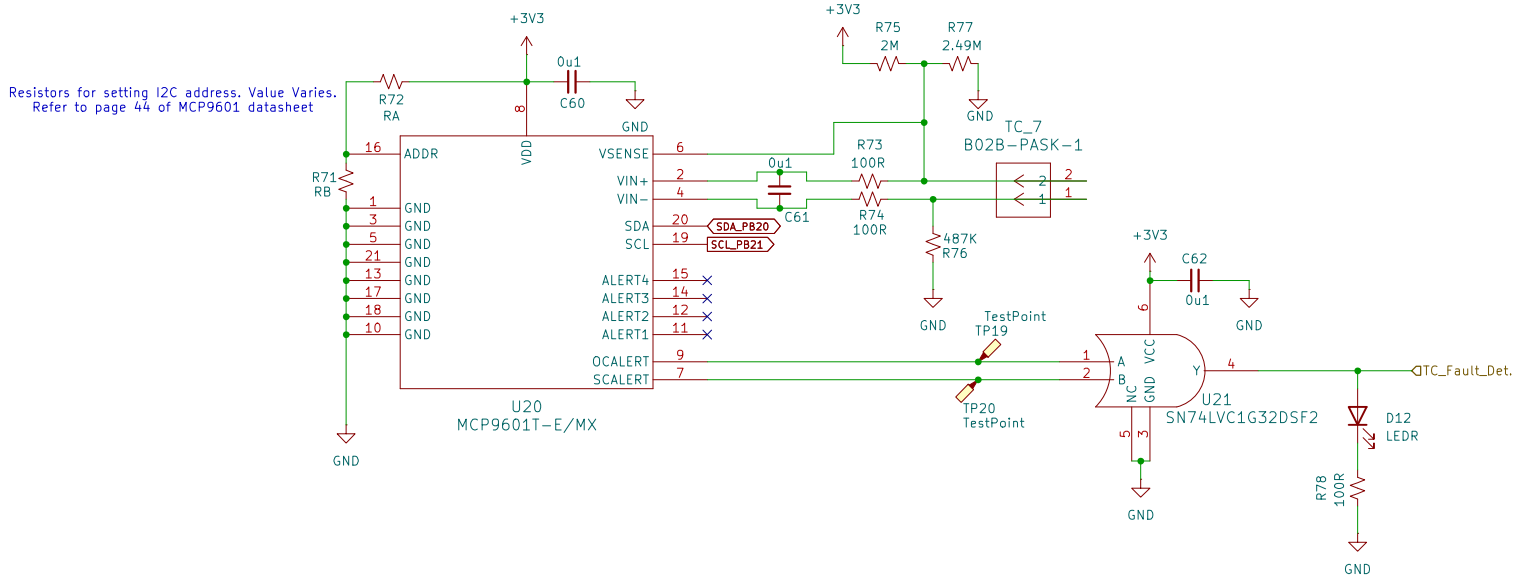


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_7/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 11/35

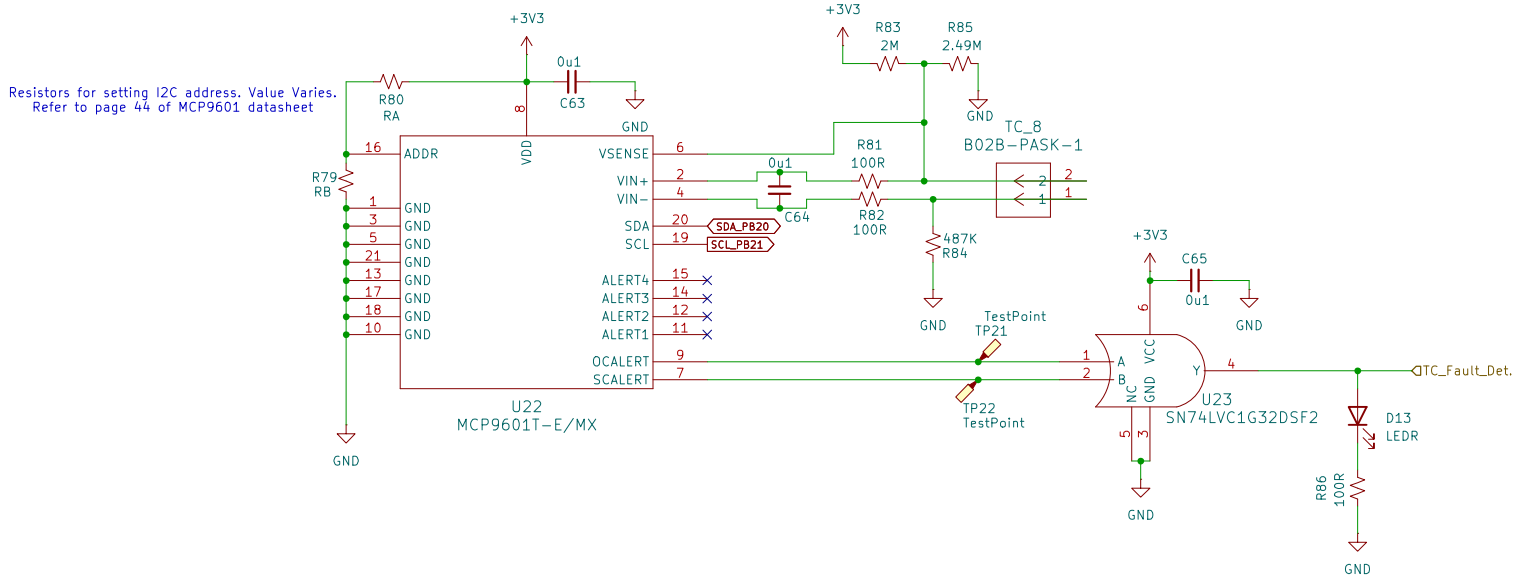


TABLE 6-2: RECOMMENDED RESISTOR VALUES FOR I²C ADDRESSING

Device #	Command Byte	Values	
		R_{XA} (kΩ)	R_{XB} (kΩ)
1	1100 000x	ADDR Pin Tied to GND	
2	1100 001x	R_{2A} = 10	R_{2B} = 2.2
3	1100 010x	R_{3A} = 10	R_{3B} = 4.3
4	1100 011x	R_{4A} = 10	R_{4B} = 7.5
5	1100 100x	R_{5A} = 10	R_{5B} = 13
6	1100 101x	R_{6A} = 10	R_{6B} = 22
7	1100 110x	R_{7A} = 10	R_{7B} = 43
8	1100 111x	ADDR Pin Tied to V_{DD}	

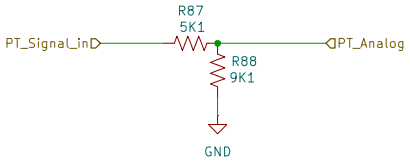
Note: Standard 5% tolerance resistors are used in the table; however, 1% tolerance resistors provide better ratio matching.

TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /TC_Input_8/
File: TC_Input_1.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 12/35



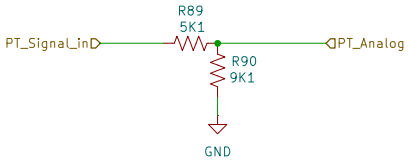
TARTARUS

AD ASTRA FROM THE ABYSS

Sheet: /PT Input 1/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 13/35

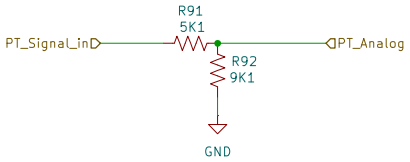


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /PT Input 2/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 14/35

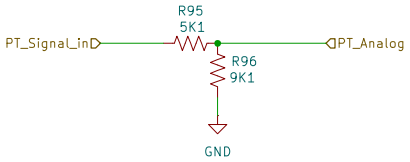


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /PT Input 3/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 15/35



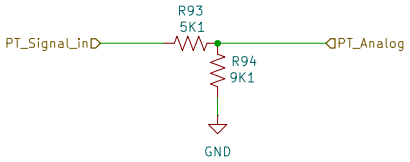
TARTARUS

AD ASTRA FROM THE ABYSS

Sheet: /PT Input 4/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 16/35

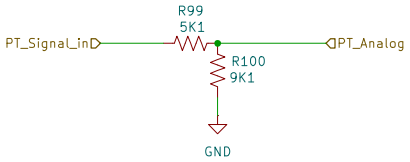


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /PT Input 5/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 17/35

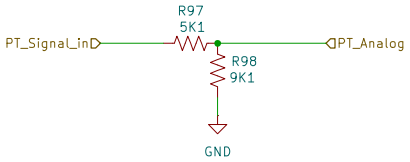


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /PT Input 6/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 18/35

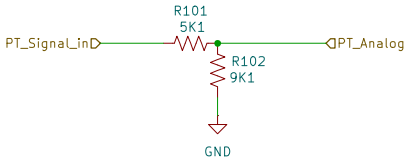


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /PT Input 7/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 19/35

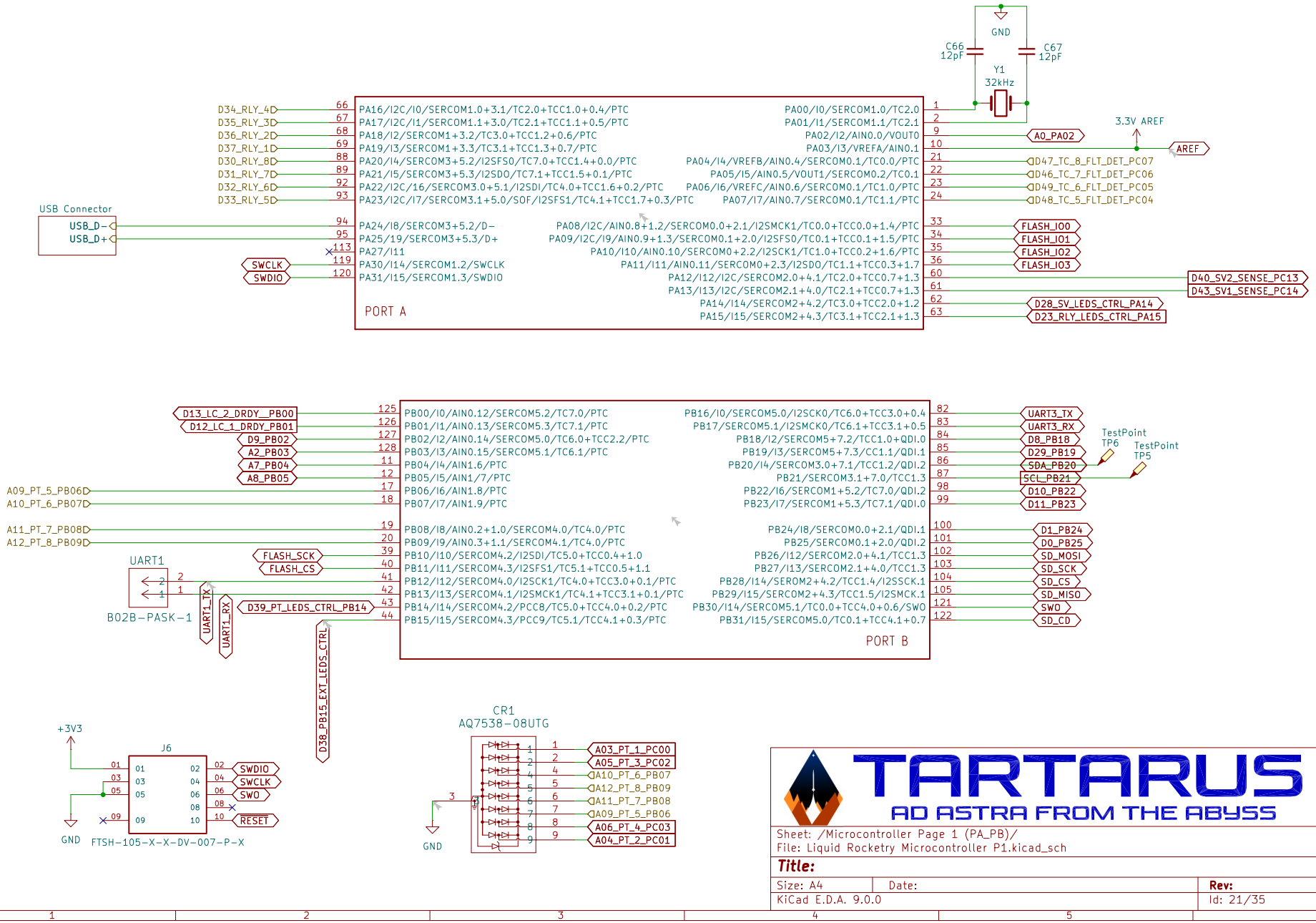


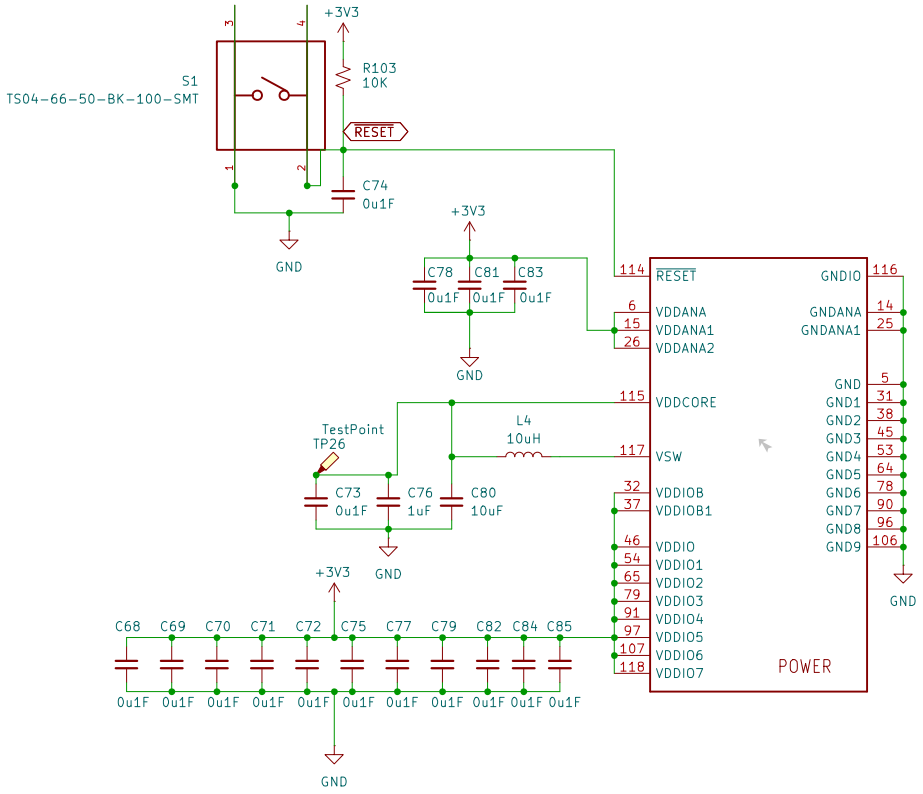
TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /PT Input 8/
File: PT Input.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 20/35


GND
C66
12pF
C67
12pF
Y1
32kHz
3.3V AREF
AREF
A0_PA02
D34_RLY_4
D35_RLY_3
D36_RLY_2
D37_RLY_1
D30_RLY_8
D31_RLY_7
D32_RLY_6
D33_RLY_5
D47_TC_8_FLT_DET_PC07
D46_TC_7_FLT_DET_PC06
D49_TC_6_FLT_DET_PC05
D48_TC_5_FLT_DET_PC04
USB Connector
USB_D-
USB_D+
SWCLK
SWDIO
PA16/I2C/I0/SERCOM1.0+3.1/TC2.0+TCC1.0+0.4/PTC
PA17/I2C/I1/SERCOM1.1+3.0/TC2.1+TCC1.1+0.5/PTC
PA18/I2/SERCOM1+3.2/TC3.0+TCC1.2+0.6/PTC
PA19/I3/SERCOM1+3.3/TC3.1+TCC1.3+0.7/PTC
PA20/I4/SERCOM3+5.2/I2SFS0/TC7.0+TCC1.4+0.0/PTC
PA21/I5/SERCOM3+5.3/I2SDO/TC7.1+TCC1.5+0.1/PTC
PA22/I2C/16/SERCOM3.0+5.1/I2SDI/TC4.0+TCC1.6+0.2/PTC
PA23/I2C/I7/SERCOM3.1+5.0/SOF/I2SFS1/TC4.1+TCC1.7+0.3/PTC
PA24/I8/SERCOM3+5.2/D-
PA25/I9/SERCOM3+5.3/D+
PA27/I11
PA30/I14/SERCOM1.2/SWCLK
PA31/I15/SERCOM1.3/SWDIO
PA00/I0/SERCOM1.0/TC2.0
PA01/I1/SERCOM1.1/TC2.1
PA02/I2/AIN0.0/VOUT0
PA03/I3/VREFA/AIN0.1
PA04/I4/VREFB/AIN0.4/SERCOM0.1/TC0.0/PTC
PA05/I5/AIN0.5/VOUT1/SERCOM0.2/TC0.1
PA06/I6/VREFC/AIN0.6/SERCOM0.1/TC1.0/PTC
PA07/I7/AIN0.7/SERCOM0.1/TC1.1/PTC
PA08/I2C/AIN0.8+1.2/SERCOM0.0+2.1/I2SMCK1/TC0.0+TCC0.0+1.4/PTC
PA09/I2C/I9/AIN0.9+1.3/SERCOM0.1+2.0/I2SFS0/TC0.1+TCC0.1+1.5/PTC
PA10/I10/AIN0.10/SERCOM0+2.2/I2SCK1/TC1.0+TCC0.2+1.6/PTC
PA11/I11/AIN0.11/SERCOM0+2.3/I2SDO/TC1.1+TCC0.3+1.7
PA12/I12/I2C/SERCOM2.0+4.1/TC2.0+TCC0.7+1.3
PA13/I13/I2C/SERCOM2.1+4.0/TC2.1+TCC0.7+1.3
PA14/I14/SERCOM2+4.2/TC3.0+TCC2.0+1.2
PA15/I15/SERCOM2+4.3/TC3.1+TCC2.1+1.3
PORT A
FLASH_IO0
FLASH_IO1
FLASH_IO2
FLASH_IO3
D40_SV2_SENSE_PC13
D43_SV1_SENSE_PC14
D28_SV_LEDS_CTRL_PA14
D23_RLY_LEDS_CTRL_PA15
D13_LC_2_DRDY__PB00
D12_LC_1_DRDY_PB01
D9_PB02
A2_PB03
A7_PB04
A8_PB05
A09_PT_5_PB06
A10_PT_6_PB07
A11_PT_7_PB08
A12_PT_8_PB09
PB00/I0/AIN0.12/SERCOM5.2/TC7.0/PTC
PB01/I1/AIN0.13/SERCOM5.3/TC7.1/PTC
PB02/I2/AIN0.14/SERCOM5.0/TC6.0+TCC2.2/PTC
PB03/I3/AIN0.15/SERCOM5.1/TC6.1/PTC
PB04/I4/AIN1.6/PTC
PB05/I5/AIN1/7/PTC
PB06/I6/AIN1.8/PTC
PB07/I7/AIN1.9/PTC
PB08/I8/AIN0.2+1.0/SERCOM4.0/TC4.0/PTC
PB09/I9/AIN0.3+1.1/SERCOM4.1/TC4.0/PTC
PB10/I10/SERCOM4.2/I2SDI/TC5.0+TCC0.4+1.0
PB11/I11/SERCOM4.3/I2SFS1/TC5.1+TCC0.5+1.1
PB12/I12/SERCOM4.0/I2SCK1/TC4.0+TCC3.0+0.1/PTC
PB13/I13/SERCOM4.1/I2SMCK1/TC4.1+TCC3.1+0.1/PTC
PB14/I14/SERCOM4.2/PCC8/TC5.0+TCC4.0+0.2/PTC
PB15/I15/SERCOM4.3/PCC9/TC5.1/TCC4.1+0.3/PTC
PB16/I0/SERCOM5.0/I2SCK0/TC6.0+TCC3.0+0.4
PB17/SERCOM5.1/I2SMCK0/TC6.1+TCC3.1+0.5
PB18/I2/SERCOM5+7.2/TCC1.0+QDI.0
PB19/I3/SERCOM5+7.3/CC1.1/QDI.1
PB20/I4/SERCOM3.0+7.1/TCC1.2/QDI.2
PB21/SERCOM3.1+7.0/TCC1.3
PB22/I6/SERCOM1+5.2/TC7.0/QDI.2
PB23/I7/SERCOM1+5.3/TC7.1/QDI.0
PB24/I8/SERCOM0.0+2.1/QDI.1
PB25/SERCOM0.1+2.0/QDI.2
PB26/I12/SERCOM2.0+4.1/TCC1.3
PB27/I13/SERCOM2.1+4.0/TCC1.3
PB28/I14/SEROM2+4.2/TCC1.4/I2SSCK.1
PB29/I15/SERCOM2+4.3/TCC1.5/I2SMCK.1
PB30/I14/SERCOM5.1/TC0.0+TCC4.0+0.6/SWO
PB31/I15/SERCOM5.0/TC0.1+TCC4.1+0.7
PORT B
UART3_TX
UART3_RX
D8_PB18
D29_PB19
SDA_PB20
SCL_PB21
D10_PB22
D11_PB23
D1_PB24
D0_PB25
SD_MOSI
SD_SCK
SD_CS
SD_MISO
SWO
SD_CD
TestPoint
TP6
TestPoint
TP5
UART1
B02B-PASK-1
UART1_TX
UART1_RX
FLASH_SCK
FLASH_CS
D39_PT_LEDS_CTRL_PB14
D38_PB15_EXT_LEDS_CTRL
+3V3
J6
SWDIO
SWCLK
SWO
RESET
GND
FTSH-105-X-X-DV-007-P-X
CR1
AQ7538-08UTG
A03_PT_1_PC00
A05_PT_3_PC02
A10_PT_6_PB07
A12_PT_8_PB09
A11_PT_7_PB08
A09_PT_5_PB06
A06_PT_4_PC03
A04_PT_2_PC01
GND
TARTARUS
AD ASTRA FROM THE ABYSS
Sheet: /Microcontroller Page 1 (PA_PB)/
File: Liquid Rocketry Microcontroller P1.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 9.0.0
Id: 21/35



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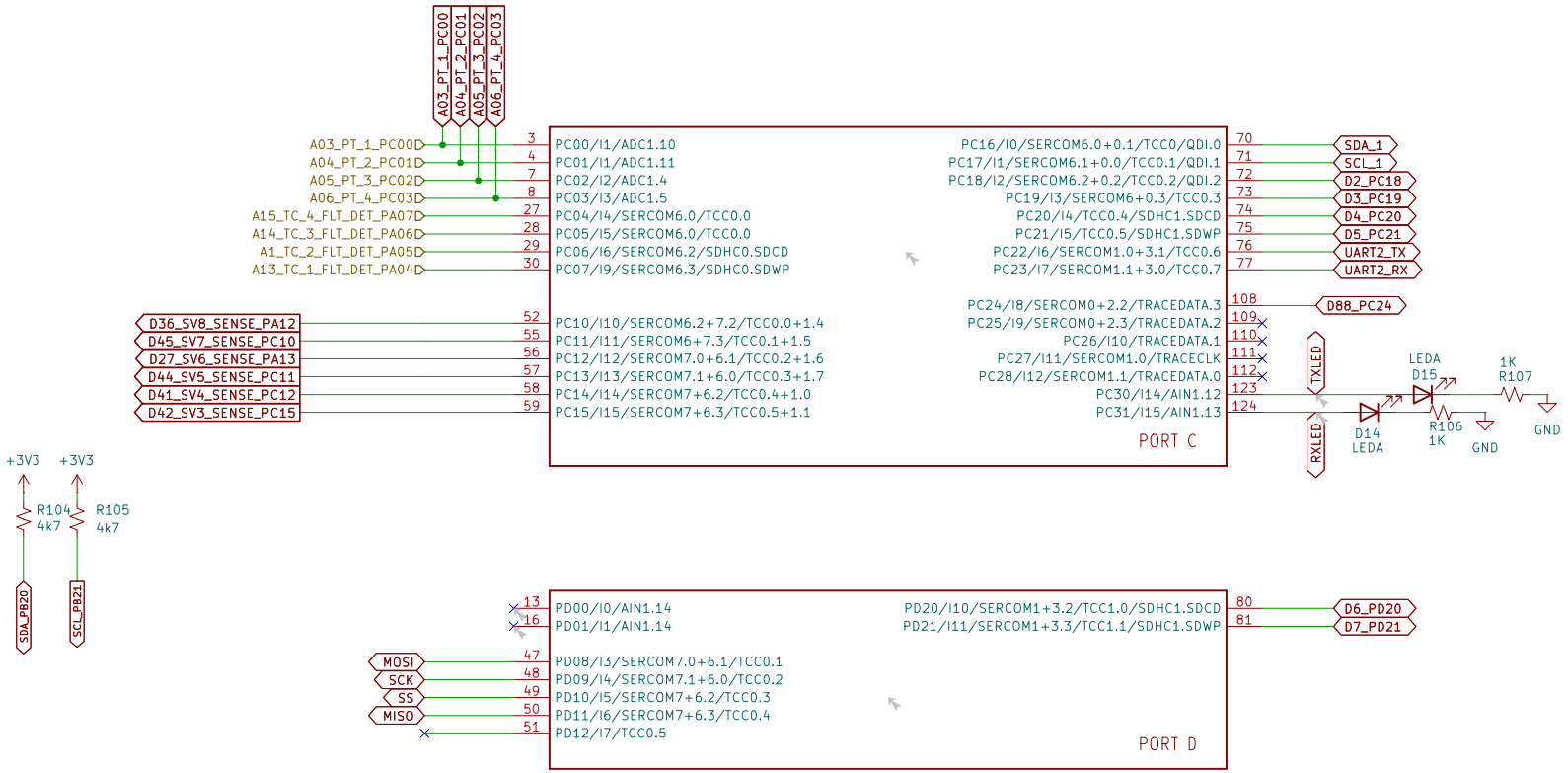
AD ASTRA FROM THE ABYSS

Sheet: /Microcontroller Page 3 (Power)/
File: Liquid Rocketry Microcontroller P3.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 22/35



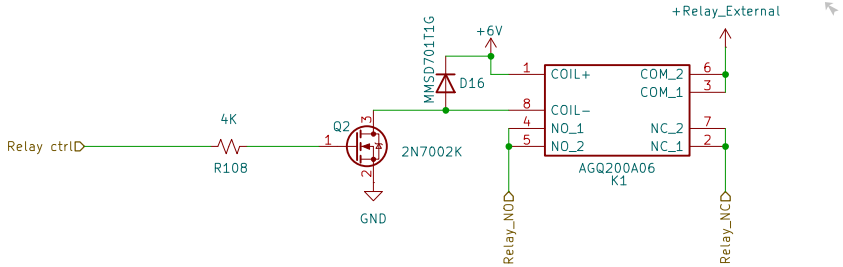
TARTARUS

AD ASTRA FROM THE ABYSS

Sheet: /Microcontroller Page 2 (PC_PD)/
File: Liquid Rocketry Microcontroller P2.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 23/35



TARTARUS

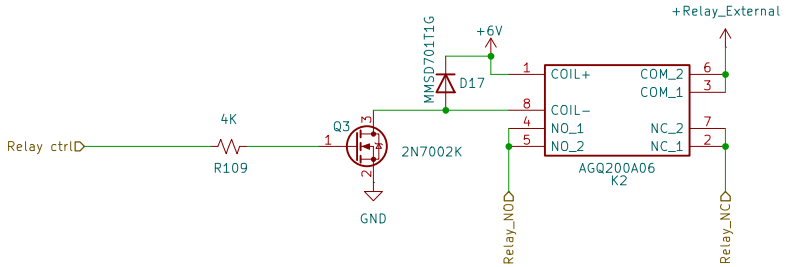
AD ASTRA FROM THE ABYSS

Sheet: /Relay_1/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 24/35



TARTARUS

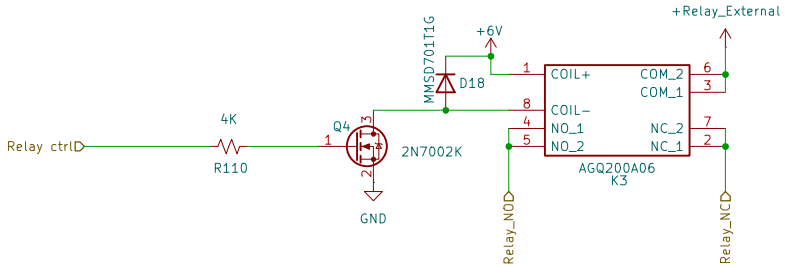
AD ASTRA FROM THE ABYSS

Sheet: /Relay_2/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 25/35



TARTARUS

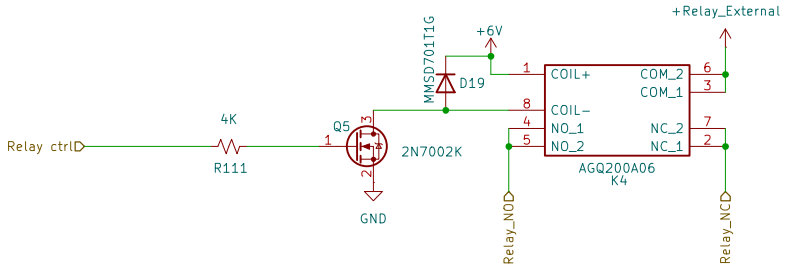
AD ASTRA FROM THE ABYSS

Sheet: /Relay_3/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 26/35



TARTARUS

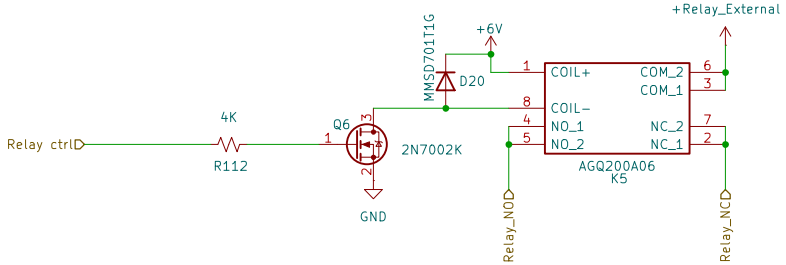
AD ASTRA FROM THE ABYSS

Sheet: /Relay_4/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 27/35



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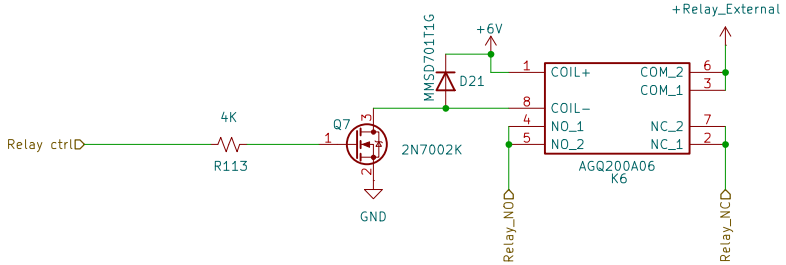
AD ASTRA FROM THE ABYSS

Sheet: /Relay_5/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 28/35



TARTARUS

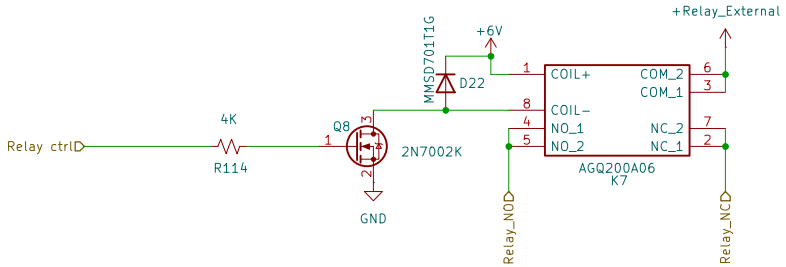
AD ASTRA FROM THE ABYSS

Sheet: /Relay_6/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 29/35



TARTARUS

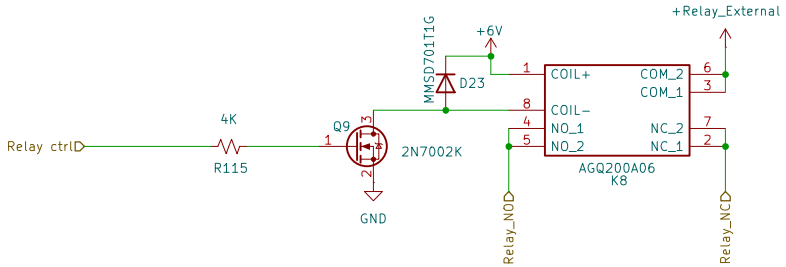
AD ASTRA FROM THE ABYSS

Sheet: /Relay_7/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 30/35



TARTARUS

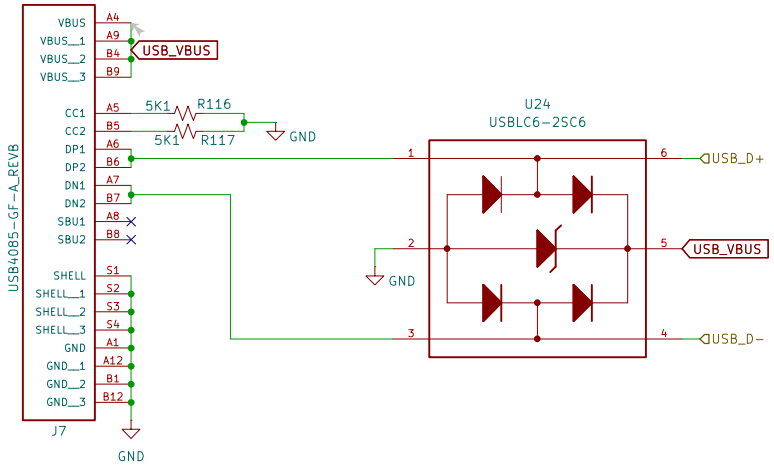
AD ASTRA FROM THE ABYSS

Sheet: /Relay_8/

File: Liquid Rocketry Relays.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 31/35



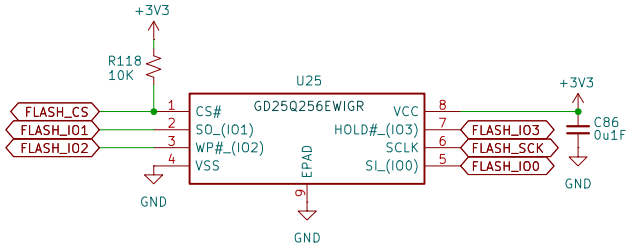
TARTARUS

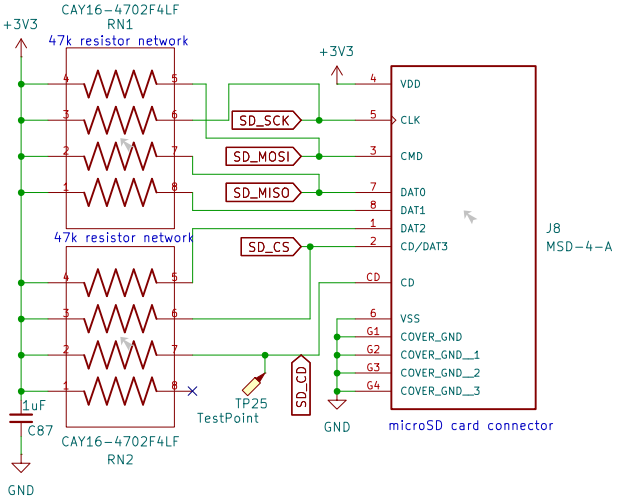
AD ASTRA FROM THE ABYSS

Sheet: /Microcontroller Page 1 (PA_PB)/USB Connector/
File: Liquid Rocketry_USB Connector.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 32/35





TARTARUS

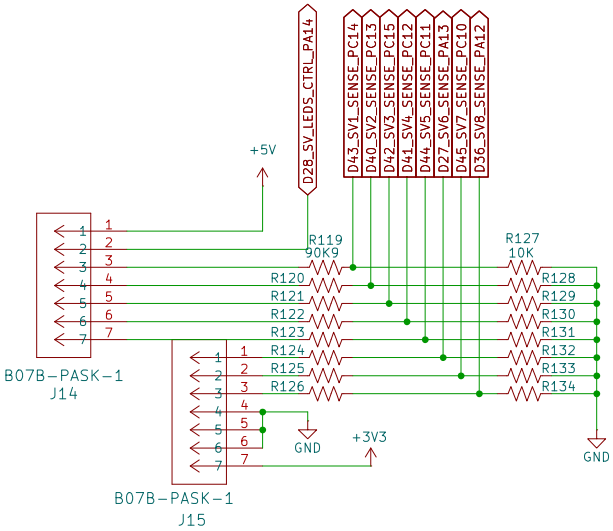
AD ASTRA FROM THE ABYSS

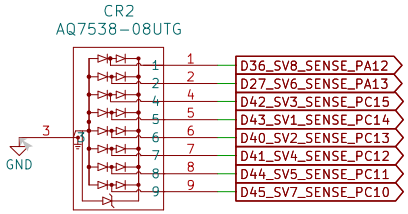
Sheet: /Data Storage/

File: Liquid Rocketry uSD Card.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 33/35



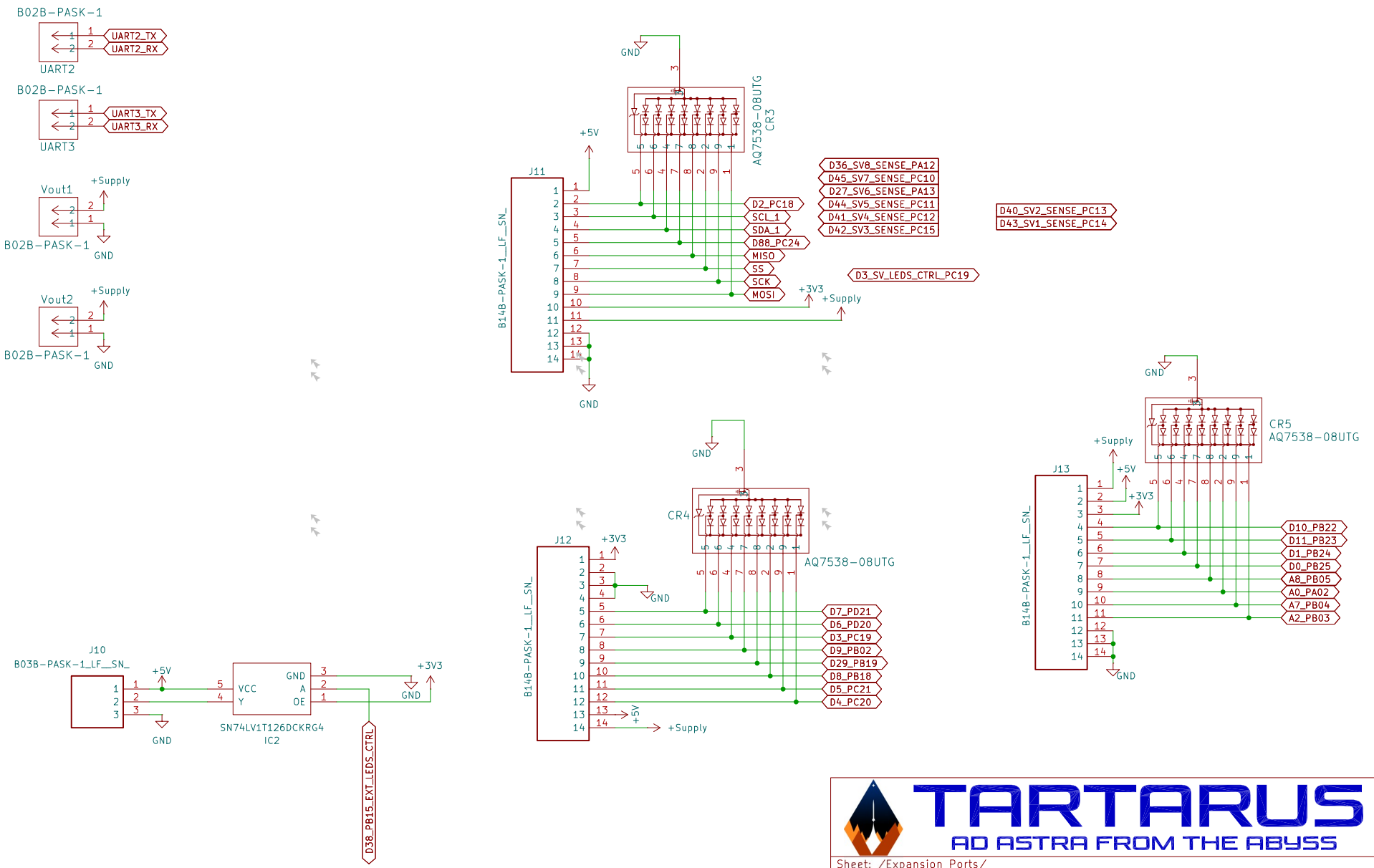


TARTARUS
AD ASTRA FROM THE ABYSS

Sheet: /Valve Sensing/
File: Liquid Rocketry Valve Sensing.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 34/35



TARTARUS

AD ASTRA FROM THE ABYSS

Sheet: /Expansion Ports/

File: Liquid Rocketry Expansion Ports.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 9.0.0		Id: 35/35