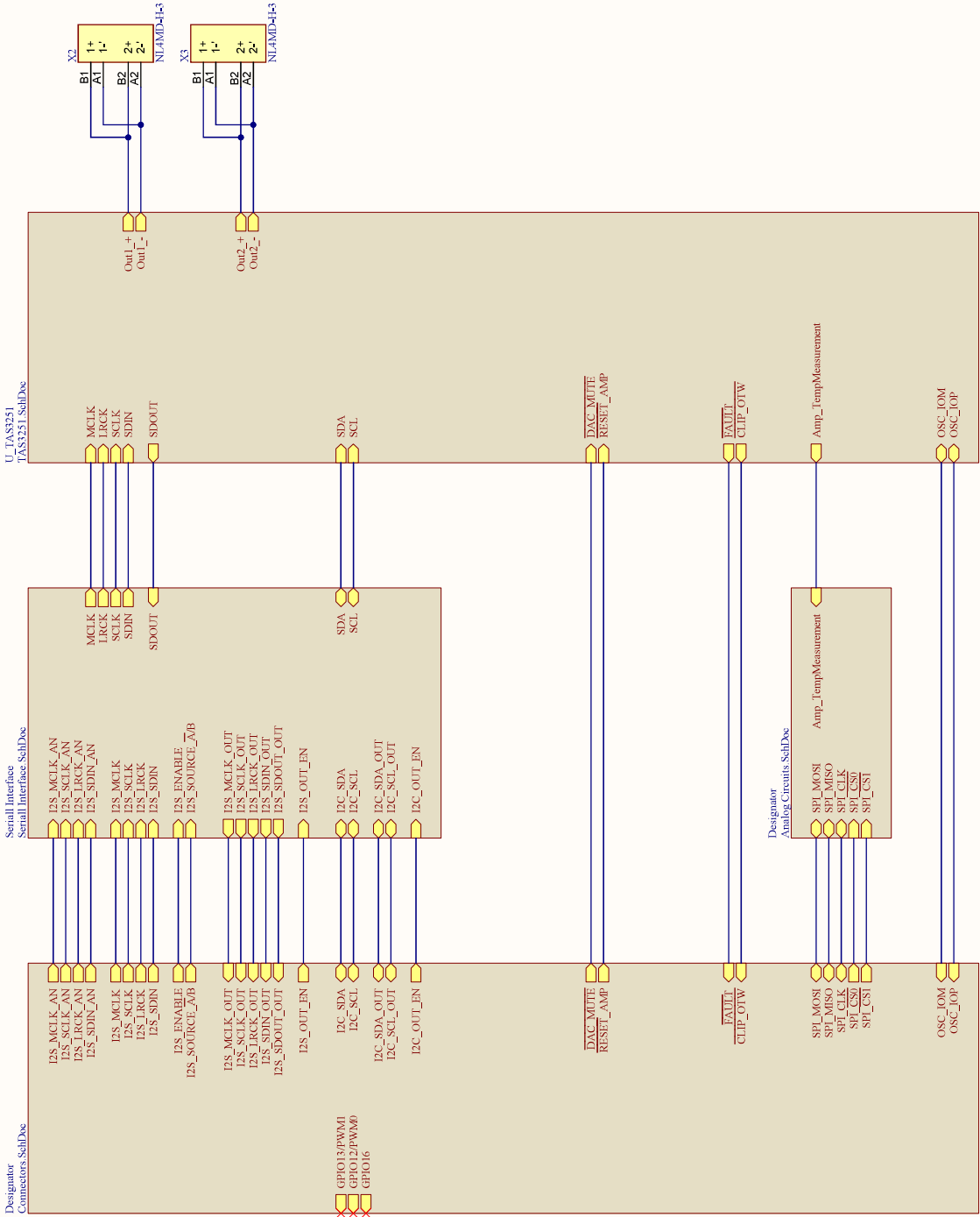


Amplifier Board Overview

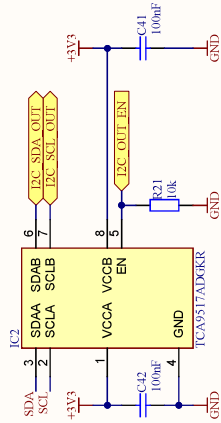
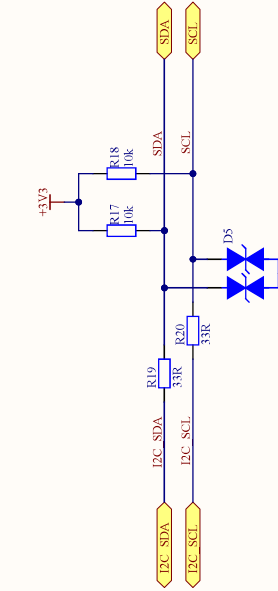


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Revision	A	Sheet Name Schematics.SchDoc	
Author Last Change	Hendrik Thiele	ID No. : SP00001	
Reviewer	-	Sheet 3 of 7	
Approver	-	Last Change Date 14.08.2024	
Change-No.	xxx		

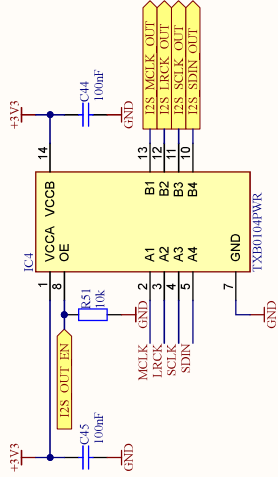
I2C for Amplifier Controlling

I2C for next Amplifier Board

I2S for next Amplifier Board



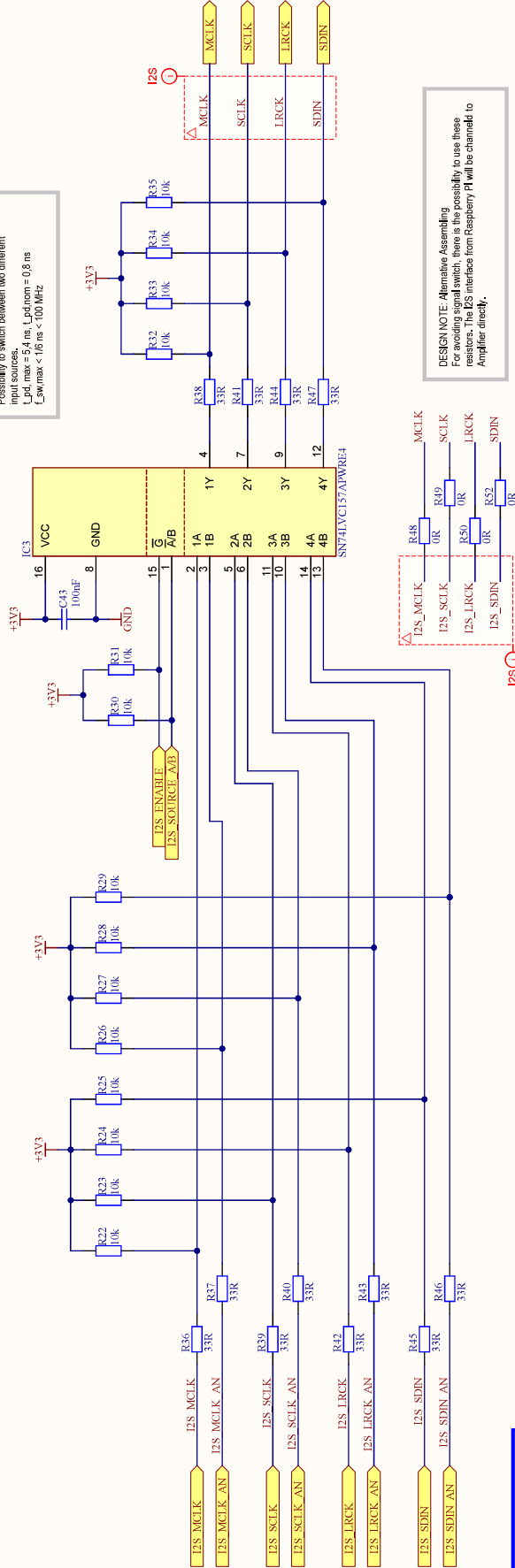
DESIGN NOTE: Signal Forwarding
forwarding I2C signals for next amplifier



DESIGN NOTE: Alternative Assembling
Signal transceiver for next amplifier board

I2S for Amplifier

DESIGN NOTE: Input Switch
Possibility to switch between two different
input sources.
 $L_{pd, max} = 54 \text{ ns}$, $L_{pd, nom} = 0.8 \text{ ns}$
 $L_{sw, max} < 10 \text{ ns}$, $L_{sw, nom} < 100 \text{ MHz}$



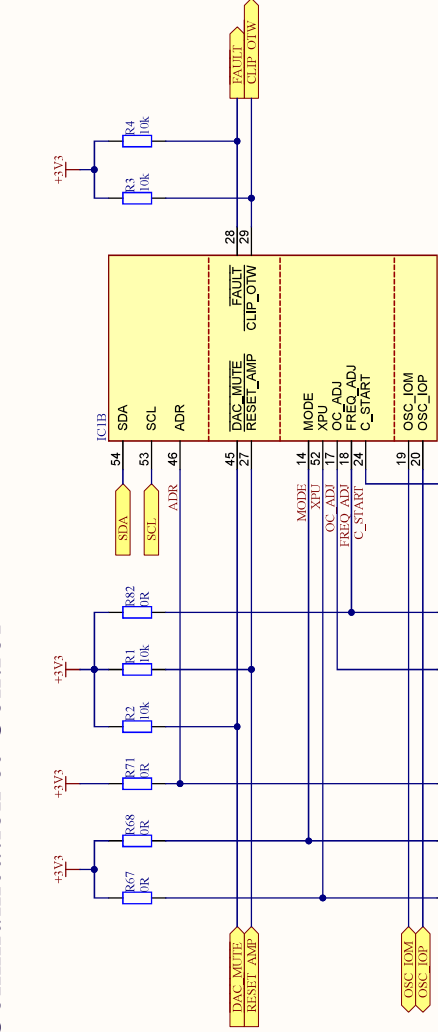
DESIGN NOTE: Alternative Assembling
For avoiding signal switch, there is the possibility to use these
resistors. The I2S interface from Raspberry Pi will be channelled to
Amplifier directly.

LAYOUT NOTE: I2S Interface
Die Längendifferenz zwischen den 4
I2S Leitungen sollte < 9 mm sein

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Approver	-		
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Communication & Control



DESIGN NOTE:
 Mode: Output mode config. BTL = 0 = 0V; PBTL = 1 = 3.3V
 DAC_MUTE, RESET_AMP: Digital Input Signal (0V, 3.3V)
 FAULT_1, CLIP_OTW: Digital Output Signal (0V, 3.3V)
 OSC_ADJ: Overcurrent Threshold programming pin
 FREQ_ADJ: Oscillator frequency programming pin
 OSC_IOM, OSC_JOP: PWM switching oscillator synchronisation
 interface. Do not connect if unused.

Heat Sink

DESIGNNOTE: I2S interface

MCU Master clock used for internal clock line and sub-circuit and slave machine clocking

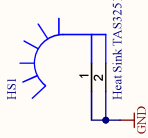
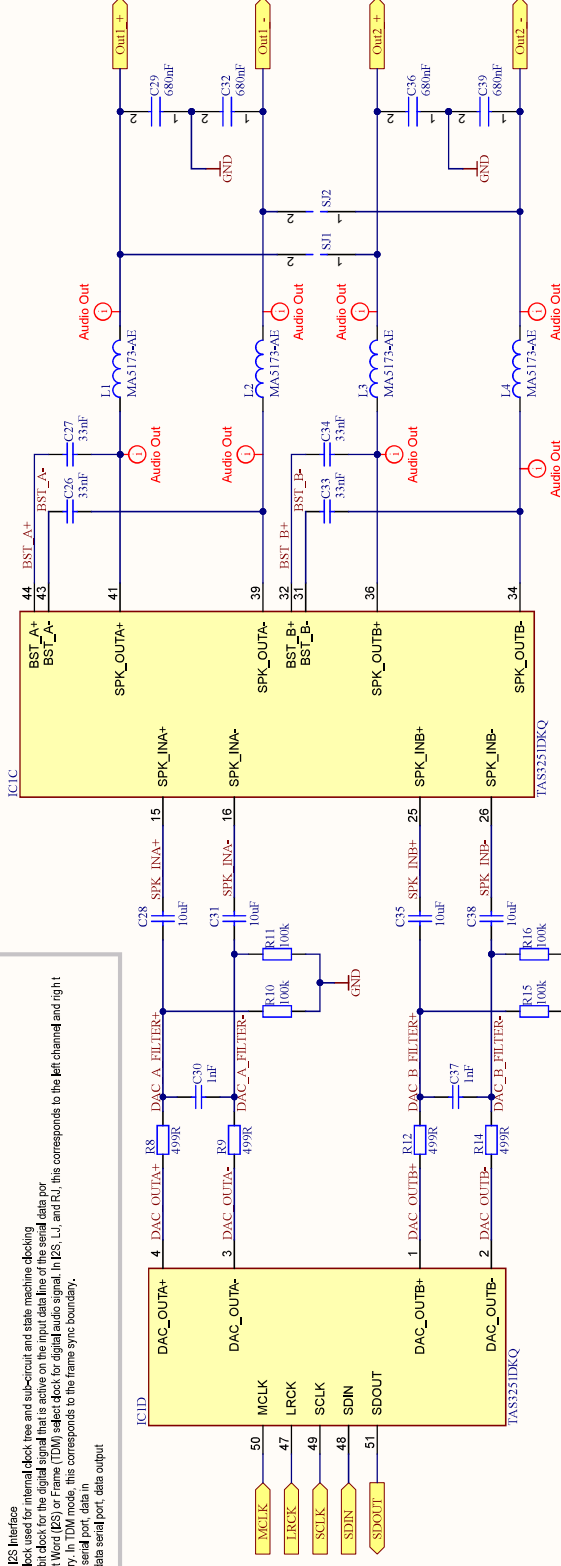
SC1X Serial or bit clock for the digital signal that is active on the input data line of the serial data port

LRCK: Left-Right Word (RS) or Frame (DW) select clock for digital audio signal. In I2S, LR and RW

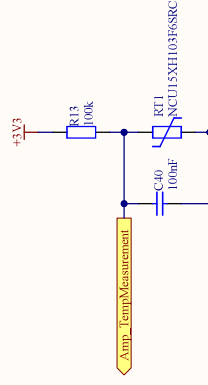
Channel boundary. In TDW mode, this corresponds to the frame sync boundary.

SC1X: serial data serial port, data in

SDOUT: Audio data serial port, data output



Temp Measurement

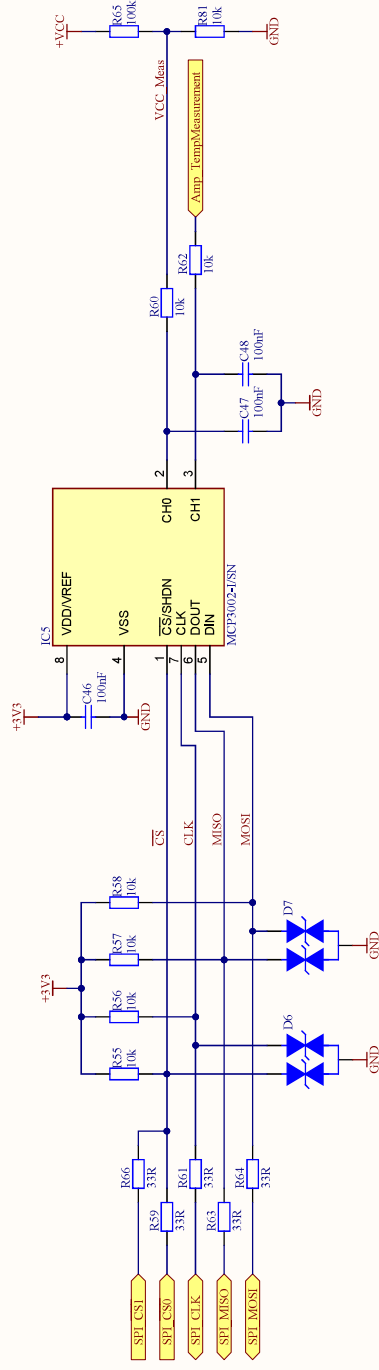


With shorting **SJ1** and **SJ2** the work mode can be changed from BTL Mode (Stere) to PTBL Mode (Mono)

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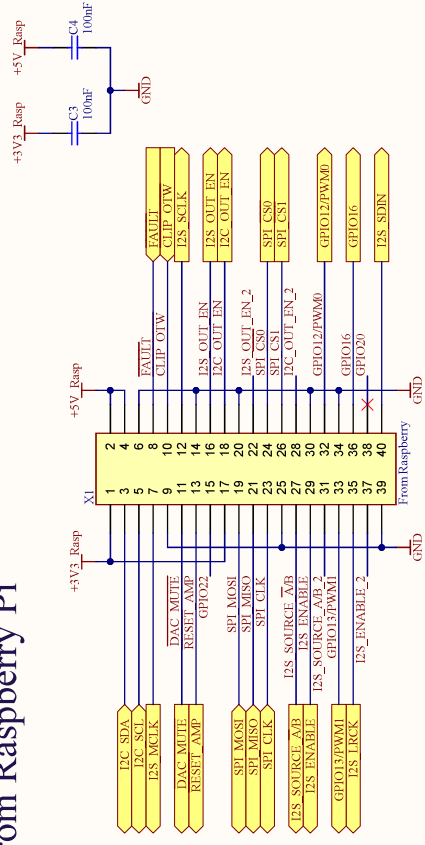
Title: Amplifier Board TAS3251	
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Temperature and Supply Voltage Measurement

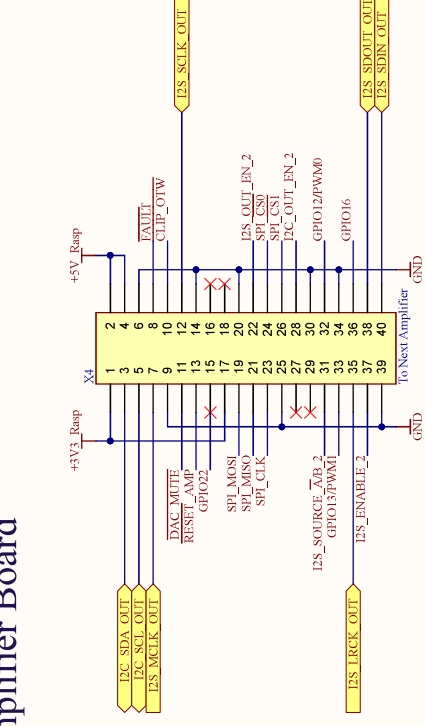


State	In review	Title: Amplifier Board TAS3251 Sheet Name: Analog Circuits_SchDoc ID No. : SP00001 Sheet 6 of 7
Revision	A	
Author	Last Change	
Reviewer	Hendrik Thiele	
Approver	-	
Last Change Date	09.09.2024	
Change-No.	xxx	

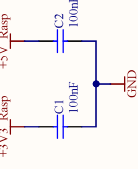
To / From Raspberry Pi



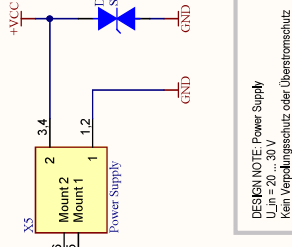
To next Amplifier Board



To next Amplifier Board

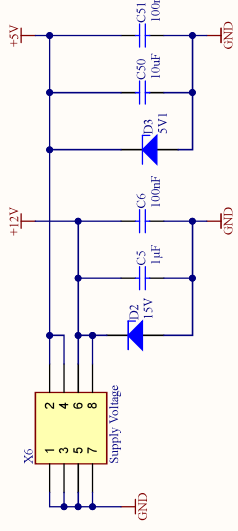


Power Supply

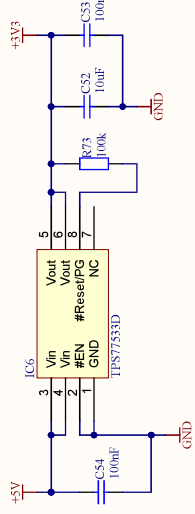


DESIGN NOTE: Power Supply
U_{in} = 20 ... 30 V
Kein Verpolungsschutz oder Überstromschutz

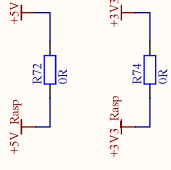
Voltage Terminal



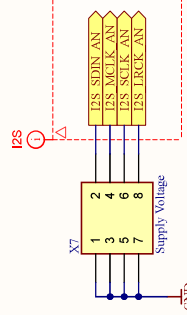
3V3 Voltage Supply



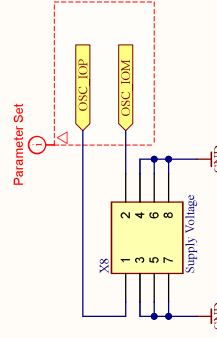
Connection Voltage Supplies



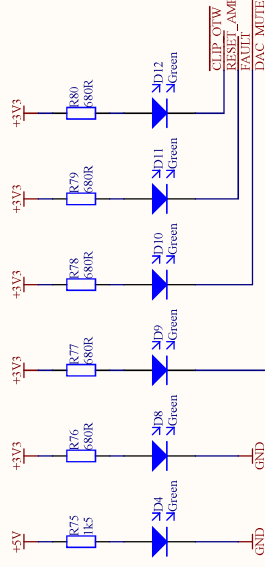
External I2S Source



Amplifier Sync Interface



LED Interface



DESIGN NOTE: LED
 $I_{LED} = 2 \text{ mA}$, $U_{LED,typ} = 1.9 \text{ V}$
 for $U_B = 3.3 \text{ V} \rightarrow R_{U_B} = (3.3 \text{ V} - 1.9 \text{ V}) / 2 \text{ mA} = 700 \text{ Ohm}$
 for $U_B = 5 \text{ V} \rightarrow R_{U_B} = (5 \text{ V} - 1.9 \text{ V}) / 2 \text{ mA} = 1.55 \text{ kOhm}$

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Reviewer	-	
Approver	-	
Last Change Date	09.09.2024	
Change-No.	xxx	

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