

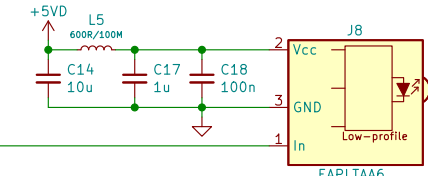
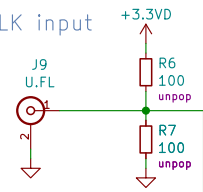
# SPDIF TX v2.2

## Generic version for PCBA

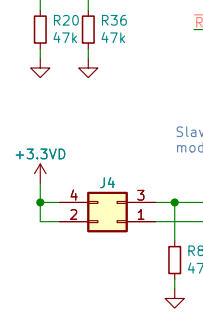
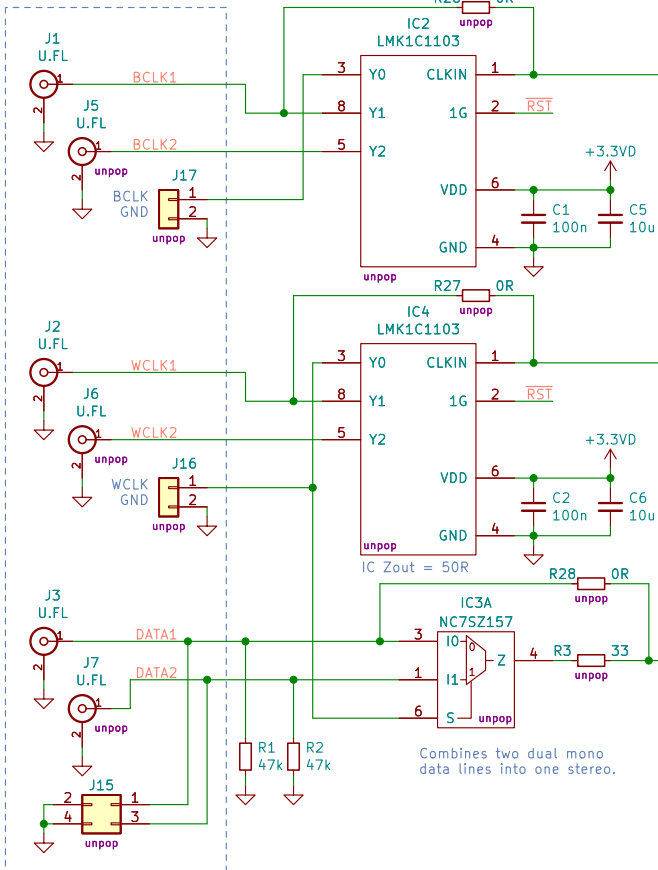
- Two population options:
- Stereo Master/Slave
  - Don't pop clock buffers and data mux, bypass buffers
  - Don't pop second I2S connectors
  - M/S can be selected with jumper
  - Dual Mono
  - Pop buffers and mux, don't pop bypass resistors
  - Pop second I2S connectors
  - No easy way to change to Slave (don't pop jumper)

- Populate after generic build:
- Stereo:
- Bypass resistors R26, R27, R28
  - Master/Slave header J14
- Dual Mono:
- Secondary UFLs J5, J6, J7
  - Clock buffers IC2, IC4, IC3
  - Resistor R3
- Oscillator, in addition:
- Oscillator
  - Clock buffer
  - 1-3 UFLs

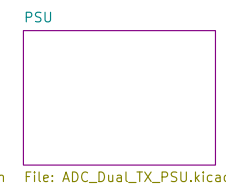
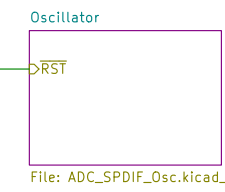
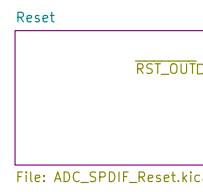
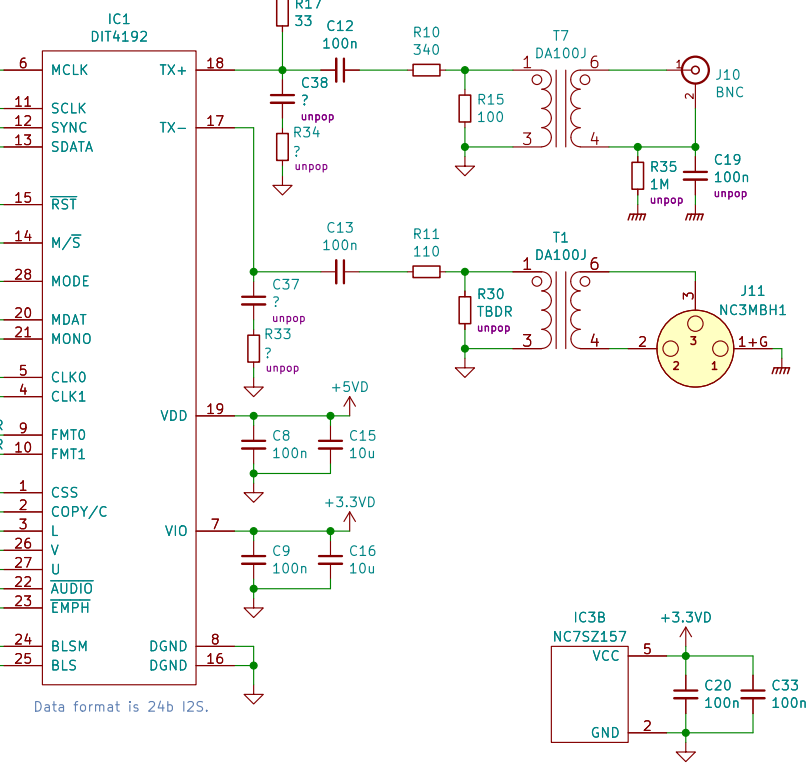
MCLK input



ADC1 & ADC2 connectors



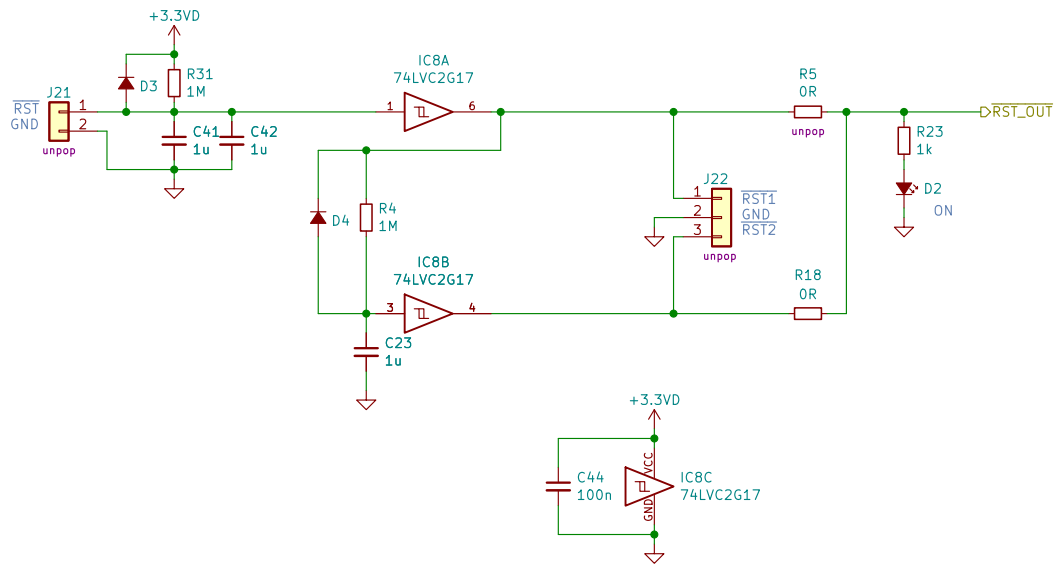
Clocking ratio selection.  
Default (no jumper links):  
MCLK is 128xfs = 192 kHz SR



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<b>ADC SPDIF TX</b>	
Sheet: /	
File: ADC_SPDIF_TX.kicad_sch	
Size: A4	Date: 2023-05-28
KiCad E.D.A.	Rev: v2.2
kidcad (6.0.9)	Id: 1/4

# Reset

## Delay and control clock startup



Following only applies when using SPDIF TX in Dual Mono mode with 2x ADC AK5572:

AK5572EN datasheet suggests following sequence to sync multiple ADCs:

- All devices in Reset, no MCLK
- Lift Reset (PDN high)
- Make pin/register setting changes
- Apply the same MCLK on all devices

I have not seen any sync issues even without considering this.

However, to not violate this, ADC should be out of reset before MCLK is applied. ADC AK5572 board has fairly long reset time constant with 100k+10u (or 1M+1u). Therefore, this board should have longer reset time constant.

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**ADC SPDIF TX**

Sheet: /Reset/  
File: ADC\_SPDIF\_Reset.kicad\_sch

Size: A4 Date: 2023-05-28

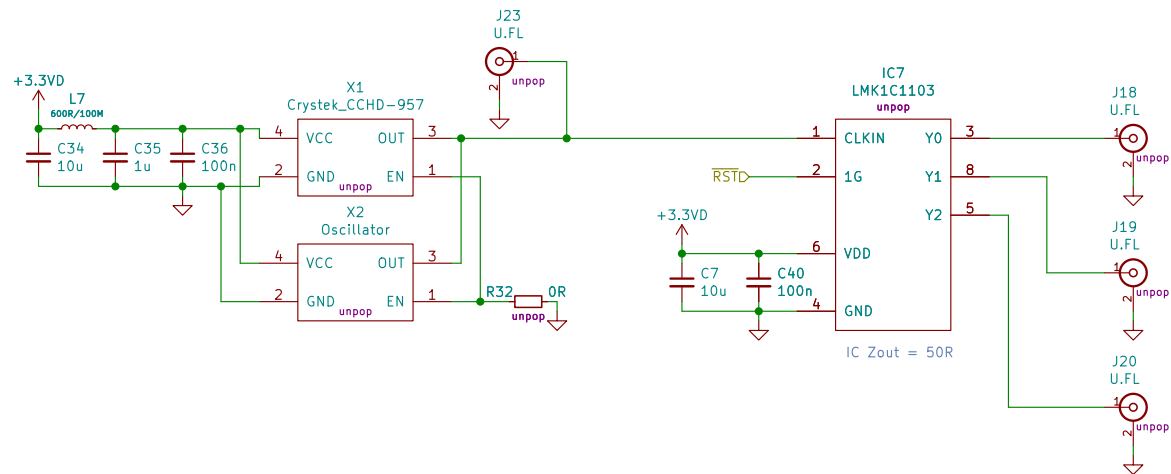
Rev: v2.2

KiCad E.D.A. kicad (6.0.9)

Id: 2/4

# Oscillator

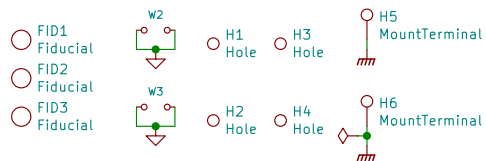
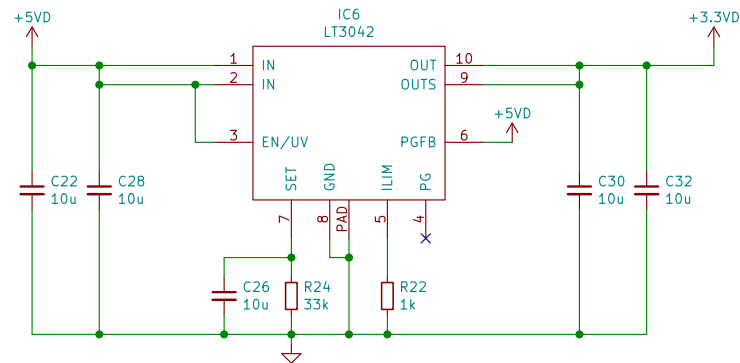
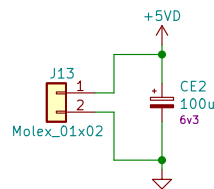
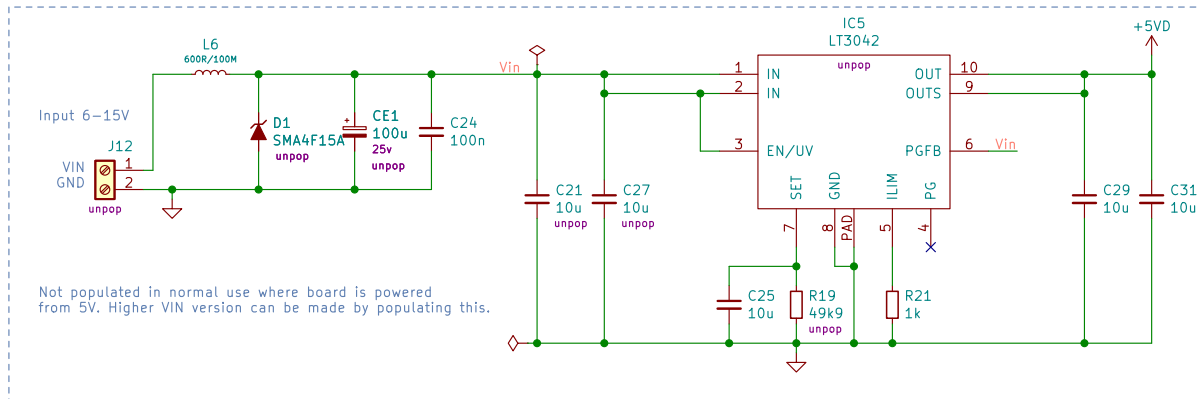
## Optional MCLK oscillator



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<b>ADC SPDIF TX</b>		
Sheet: /Oscillator/ File: ADC_SPDIF_Osc.kicad_sch		
Size: A4	Date: 2023-05-28	Rev: v2.2
KiCad E.D.A.	kicad (6.0.9)	Id: 3/4

# PSU

## 3.3V LDO and optional 5V LDO



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<b>ADC SPDIF TX</b>		
Sheet: /PSU/ File: ADC_Dual_TX_PSU.kicad_sch		
Size: A4	Date: 2023-05-28	Rev: v2.2
KiCad E.D.A.	kicad (6.0.9)	Id: 4/4