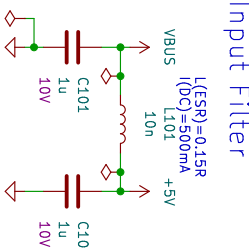


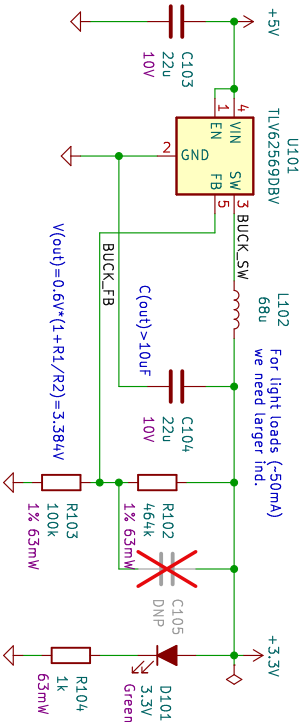
open source hardware



VBUS power comes from USB Type C Connector

3.3V Digital Supply (BUCK)

- * $V_{in}(MAX)=5V$
- * $I_{out}(MAX)=250mA$
- * $f(sw)=1.5MHz$



$$L(I_{loadmax}) = \frac{V_o(V_i - V_o)}{dI_L \cdot f(sw) \cdot V_i} = \frac{3.3(5 - 3.3)}{0.25 \cdot 1.566 \cdot 5} = 3.3(5 - 3.3) / 0.25 \cdot 1.566 \cdot 5 = 12\mu H \rightarrow \text{next size } 15\mu H$$

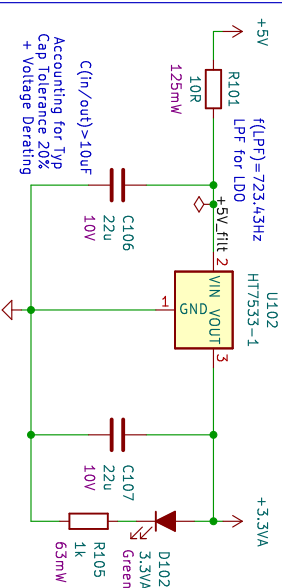
For light loads (~50mA) we need larger ind.

Test Points



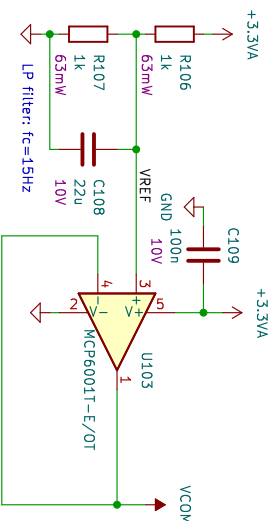
3.3V Analog Supply (LDO)

- * $V_{in}(MAX)=5V$
- * $I_{out}(MAX)=100mA$



Accounting for Typ Cap Tolerance 20% + Voltage Derating

Bias Generator



LP

Sheet: / [1] Power /

File: power.kicad_sch

Title: **STM Audio Board**

Size: A4

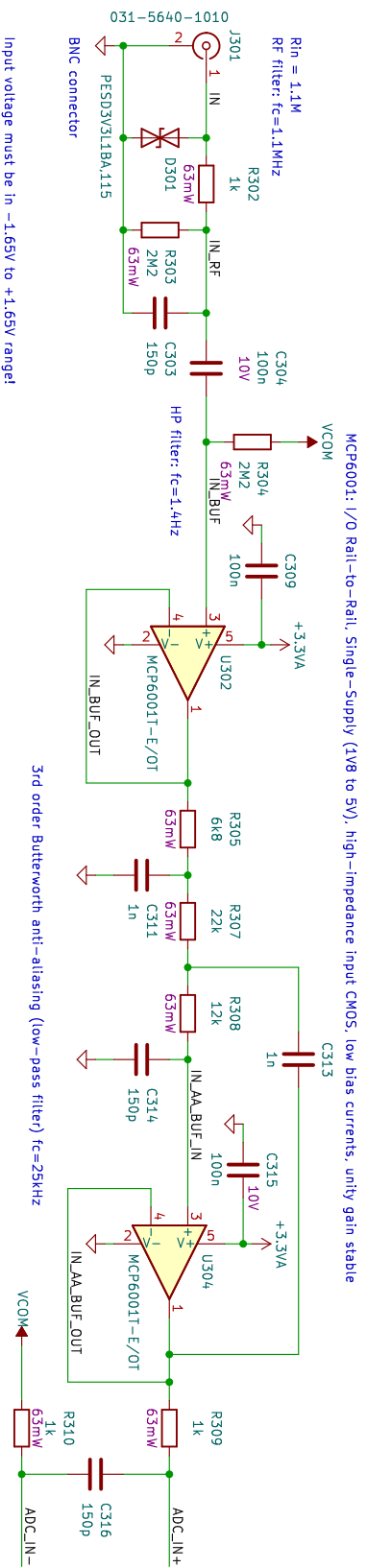
Date: 2023-02-03

Kicad E.D.A. kicad (7.0.0)

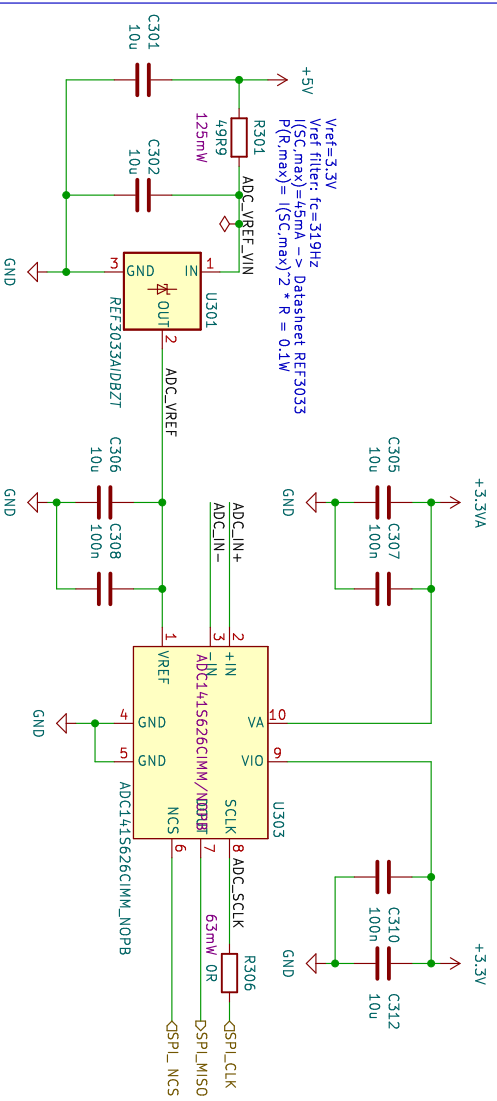
Rev: **0.1**

Id: 2/5

Analog Front End



14-Bit S/H ADC



LP

Sheet: / [3] ADC /

File: adc.kicad_sch

Title: STM Audio Board

Size: A4

Date: 2023-02-04

KICad E.D.A. kicad (7.0.0)

Rev: 0.1
Id: 4/5

