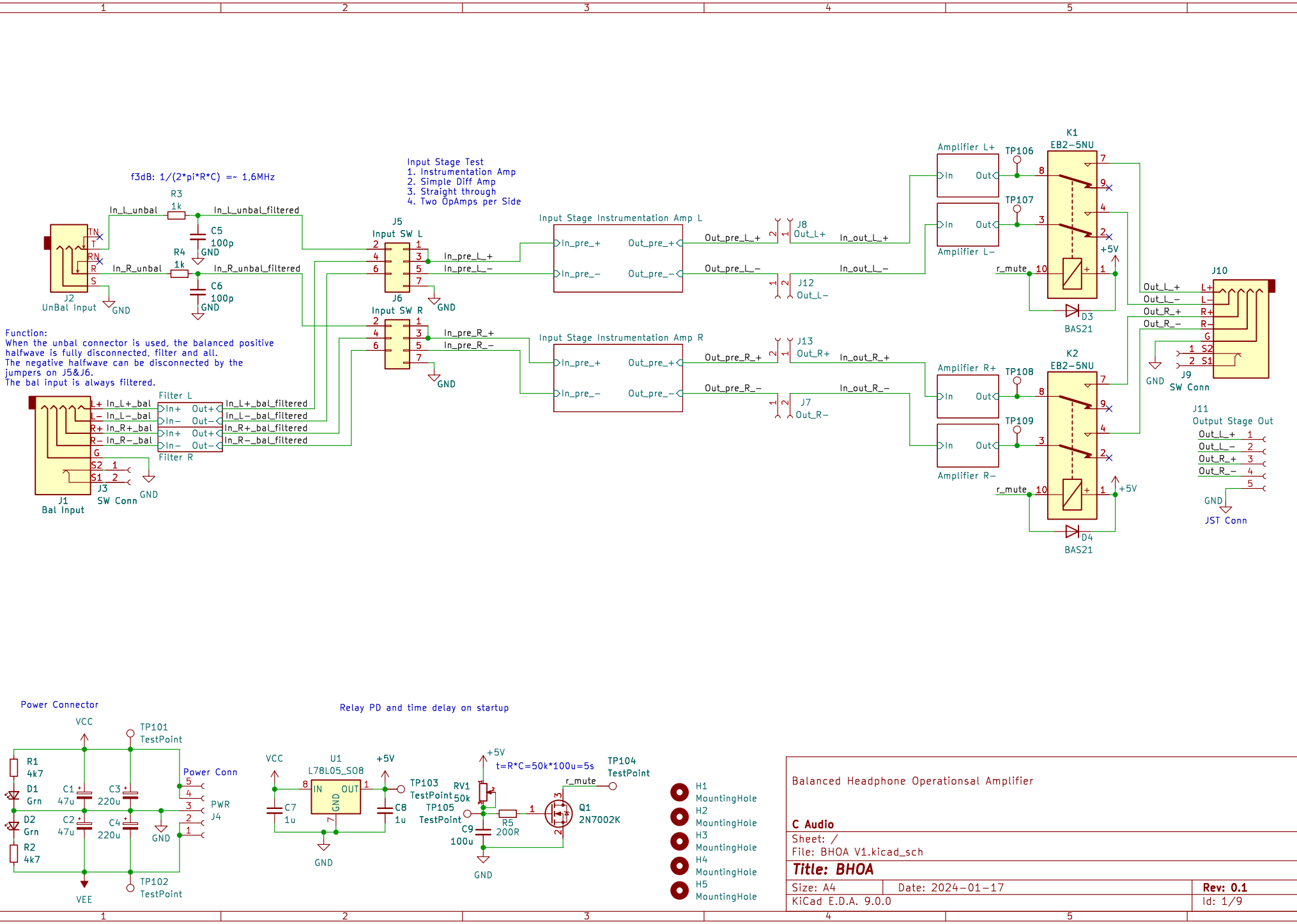
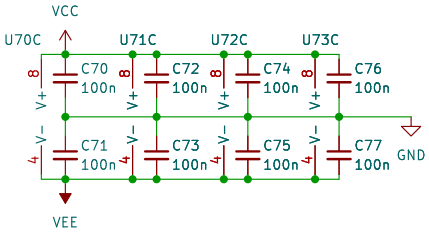
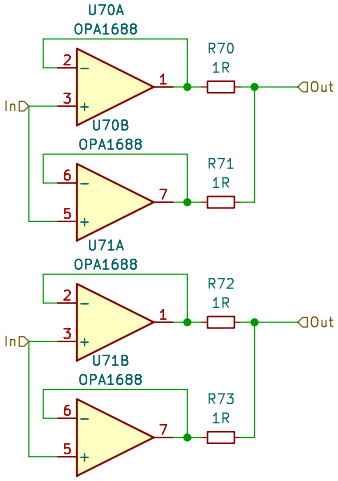
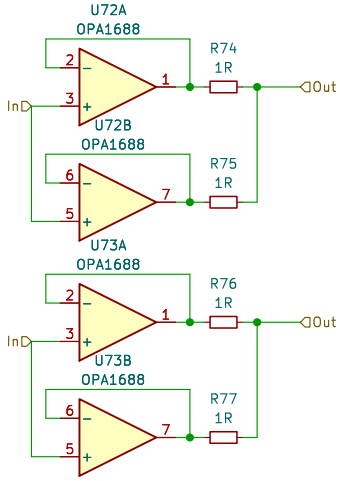

f3dB: 1/(2*pi*R*C) =~ 1,6MHz
Input Stage Test
1. Instrumentation Amp
2. Simple Diff Amp
3. Straight through
4. Two OpAmps per Side
Function:
When the unbal connector is used, the balanced positive halfwave is fully disconnected, filter and all.
The negative halfwave can be disconnected by the jumpers on J5&J6.
The bal input is always filtered.
J1 Bal Input
J2 UnBal Input
J3 SW Conn
J4 PWR
J5 Input SW L
J6 Input SW R
J7
J8
J9 SW Conn
J10
J11 Output Stage Out
J12
J13
K1 EB2-5NU
K2 EB2-5NU
D3 BAS21
D4 BAS21
Filter L
Filter R
Input Stage Instrumentation Amp L
Input Stage Instrumentation Amp R
Amplifier L+
Amplifier L-
Amplifier R+
Amplifier R-
TP106
TP107
TP108
TP109
r_mute
JST Conn
Power Connector
Power Conn
TP101 TestPoint
TP102 TestPoint
TP103 TestPoint
TP104 TestPoint
TP105 TestPoint
U1 L78L05_SO8
t=R*C=50k*100u=5s
Relay PD and time delay on startup
H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole
H5 MountingHole
Balanced Headphone Operationsal Amplifier
C Audio
Sheet: /
File: BHOA V1.kicad_sch
Title: BHOA
Size: A4
Date: 2024-01-17
Rev: 0.1
KiCad E.D.A. 9.0.0
Id: 1/9







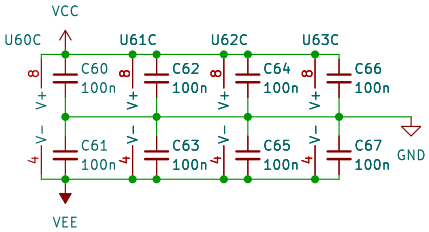
Paralleled OPAMP outputs for more power and lower distortion
Balanced Headphone Operationsal Amplifier

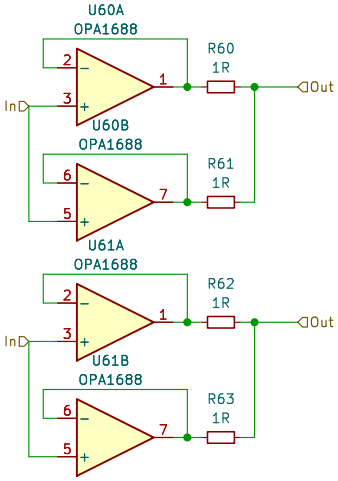
C Audio

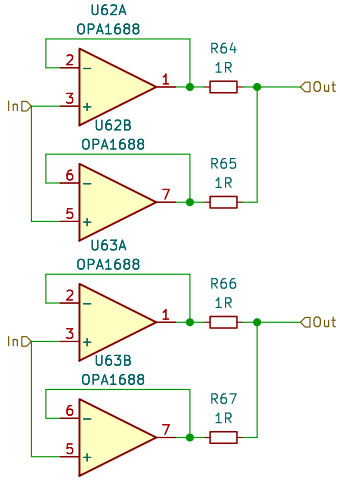
Sheet: /Amplifier L-/
File: amp.kicad_sch

Title: BHOA

Size: A4	Date: 2023-10-31	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 2/9







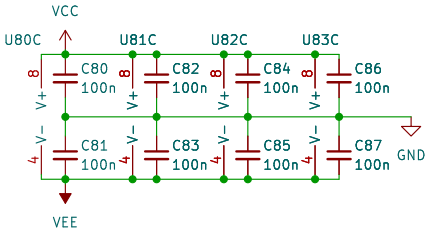
Paralleled OPAMP outputs for more power and lower distortion
Balanced Headphone Operationsal Amplifier

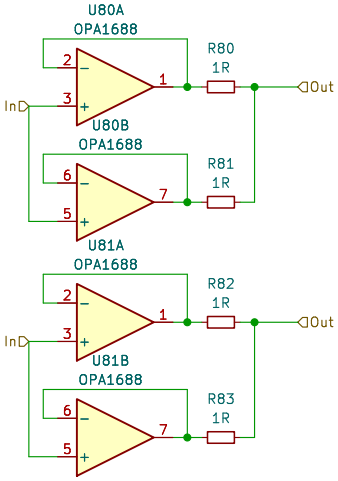
C Audio

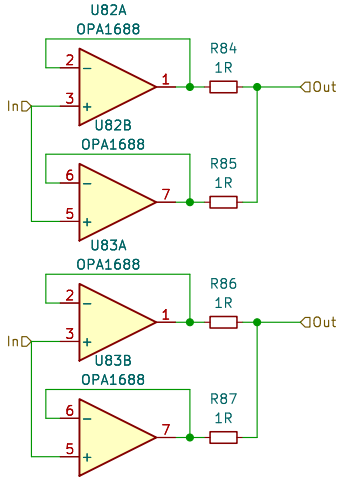
Sheet: /Amplifier L+/
File: amp.kicad_sch

Title: BHOA

Size: A4	Date: 2023-10-31	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 3/9







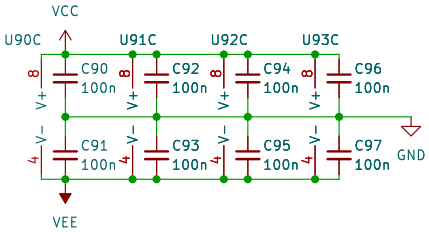
Paralleled OPAMP outputs for more power and lower distortion
Balanced Headphone Operationsal Amplifier

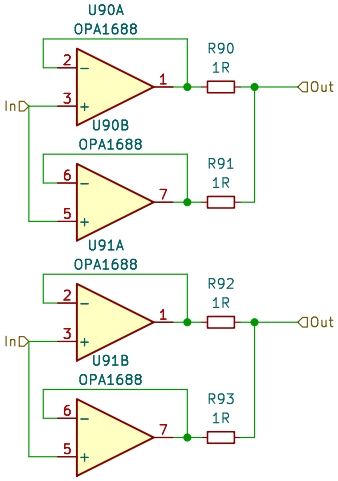
C Audio

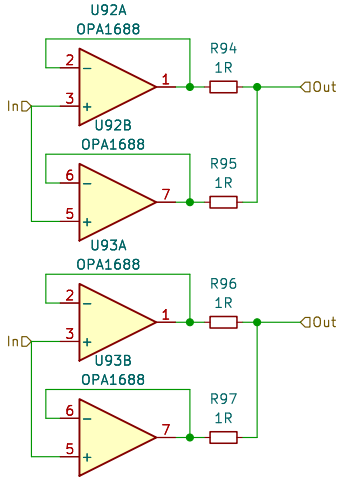
Sheet: /Amplifier R+/
File: amp.kicad_sch

Title: BHOA

Size: A4	Date: 2023-10-31	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 4/9







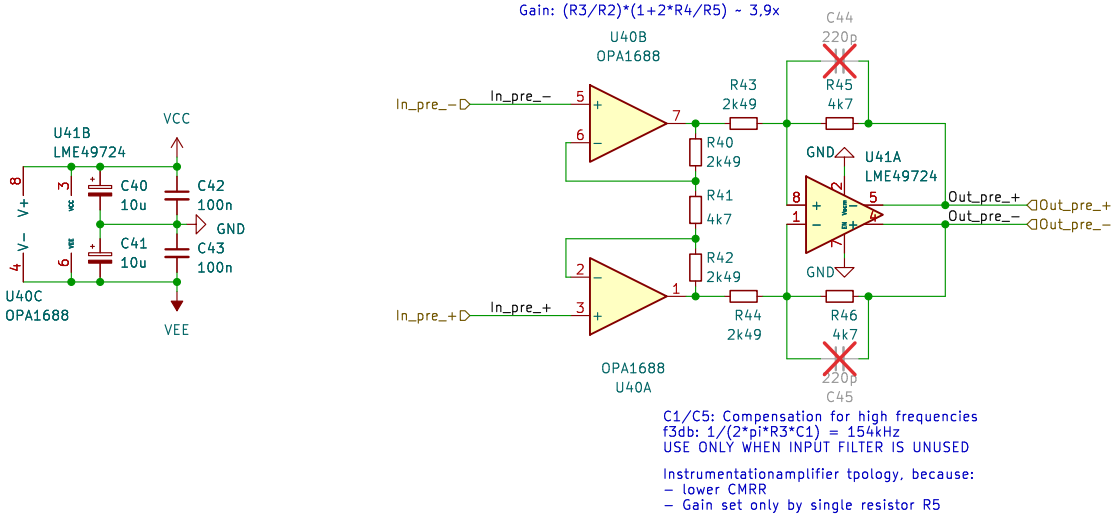
Paralleled OPAMP outputs for more power and lower distortion
Balanced Headphone Operationsal Amplifier

C Audio

Sheet: /Amplifier R-/
File: amp.kicad_sch

Title: BHOA

Size: A4	Date: 2023-10-31	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 5/9



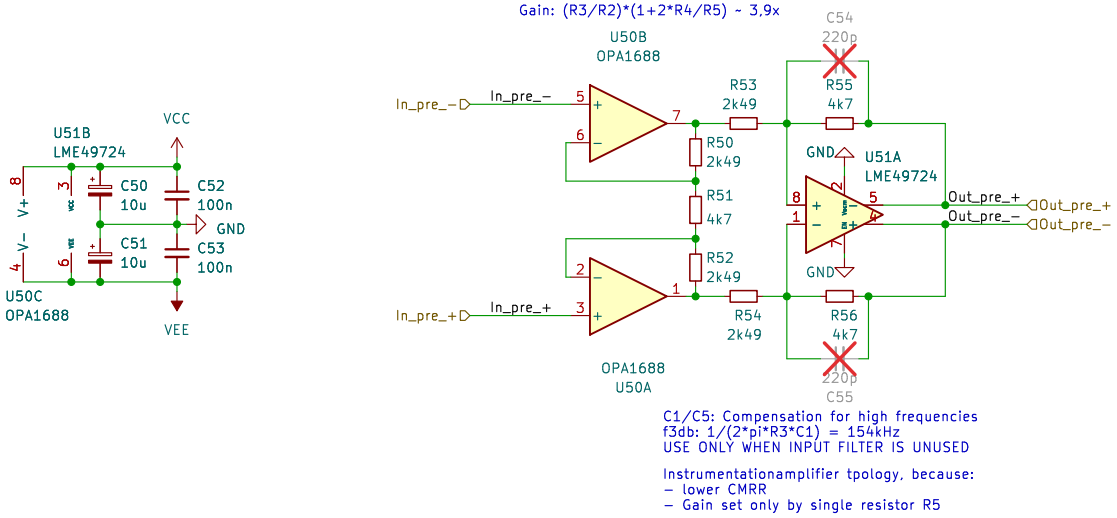
Balanced Headphone Operationsal Amplifier

C Audio

Sheet: /Input Stage Instrumentation Amp L/
File: Input Stage.kicad_sch

Title: BHOA

Size: A4	Date:	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 6/9



Balanced Headphone Operationsal Amplifier

C Audio

Sheet: /Input Stage Instrumentation Amp R/
File: Input Stage.kicad_sch

Title: BHOA

Size: A4	Date:	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 7/9

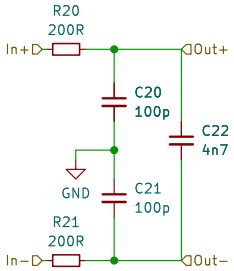
Common mode (CM) and differetial mode (DM)
filter for RF interferences

For reference: OP AMP APPLICATIONS by Walter Jung p7.128

Caps: Polypropylene (e.g. WIMA FKP2) or NP0 ceramic
Res: Metall Thin Film

R1=R8 should be <= 1% resistors
C2=C4 should be <= 5% capacitors

f3db: 1/(2*pi*(R1+R8)*(((C2*C4)/(C2+C4))+C3) =~2MHz
Filter BW ~ 100x Input BW =~ 2MHz



Balanced Headphone Operationsal Amplifier

C Audio

Sheet: /Filter L/
File: input_filter.kicad_sch

Title: BHOA

Size: A4	Date:	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 8/9

Common mode (CM) and differetial mode (DM)
filter for RF interferences

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R1=R8 should be <= 1% resistors
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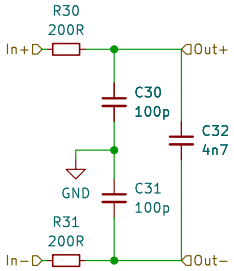
f3db: 1/(2*pi*(R1+R8)*(((C2*C4)/(C2+C4))+C3) =~2MHz
Filter BW ~ 100x Input BW =~ 2MHz



Balanced Headphone Operationsal Amplifier

C Audio

Sheet: /Filter R/
File: input_filter.kicad_sch

Title: BHOA

Size: A4	Date:	**Rev: 0.1**
KiCad E.D.A. 9.0.0		Id: 9/9