

Sheet: power

File: power.sch

Sheet: coreboard

File: coreboard.sch

Sheet: mechanics

File: mechanics.sch

Sheet: audio-codec

File: audio-codec.sch

Sheet: audio-inputs

File: audio-inputs.sch

Sheet: audio-outputs

File: audio-outputs.sch

Sheet: headphone

File: Headphone.sch

Sheet: usb

File: usb.sch

Sheet: midi

File: midi.sch

Sheet: control-chain

File: control-chain.sch

Notes

- All resistors named as RA* must have 1% tolerance
- All non-polarized capacitors named as CA* must use NP0 Temp. Coef.
- All other non-polarized capacitors should use X7R Temp. Coef.
- Decoupling caps must be placed as close as possible of the IC power pins

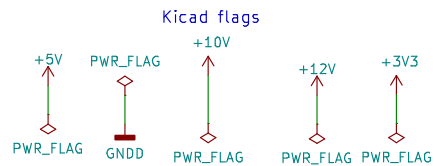
USB outp Power: 500mA
Inp Power: 12V 500mA
<https://github.com/moddevices/hw-mod-dwarf>
Dwarf Audio processing board
MOD Devices GmbH

Sheet: /
File: bottom-board.sch

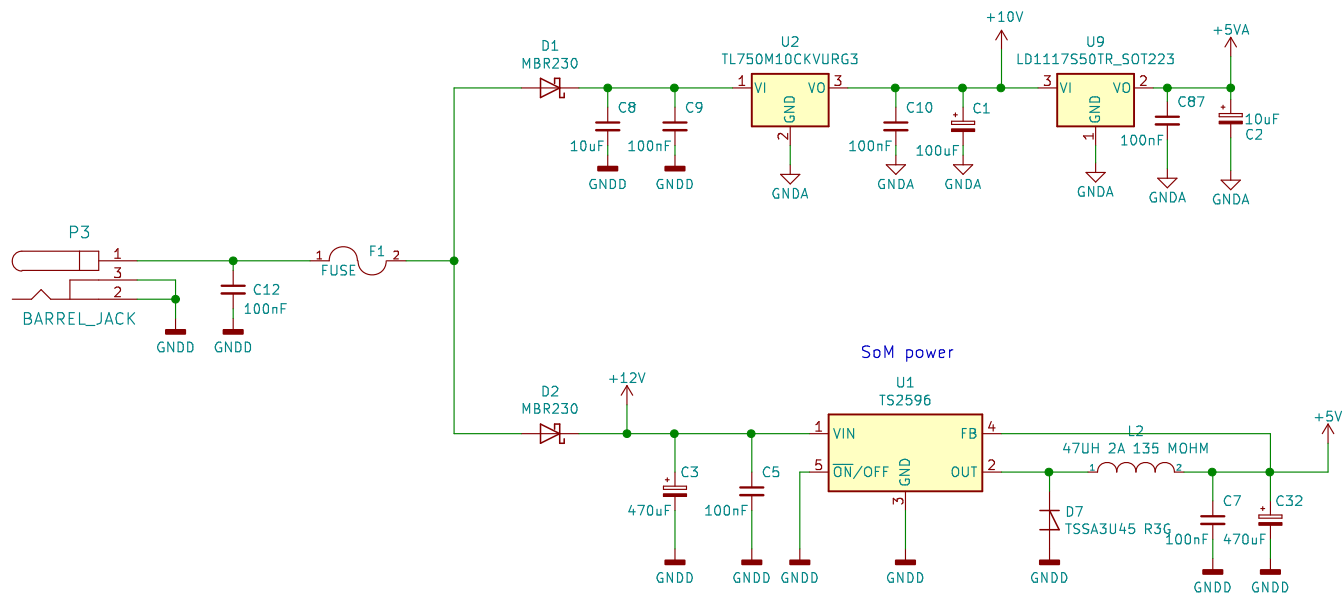
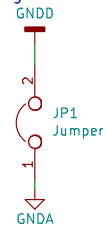
Title: MOD Dwarf – Main Board

Size: A4 Date: 2019-12-18
KiCad E.D.A. kicad 5.1.8-db983349187ubuntu20.04.1

Rev: 0.2
Id: 1/11



Only to be merged at codec ground



USB outp Power: 500mA
 Inp Power: 12V 500mA
<https://github.com/moddevices/hw-mod-uno>
 Uno Audio processing board

MOD Devices GmbH

Sheet: /power/

File: power.sch

Title: MOD Uno – Main Board

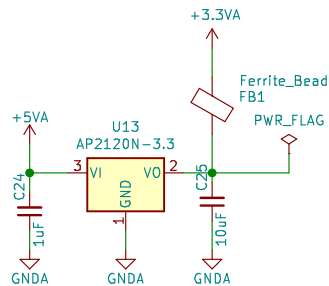
Size: A4

Date: 2019-08-16

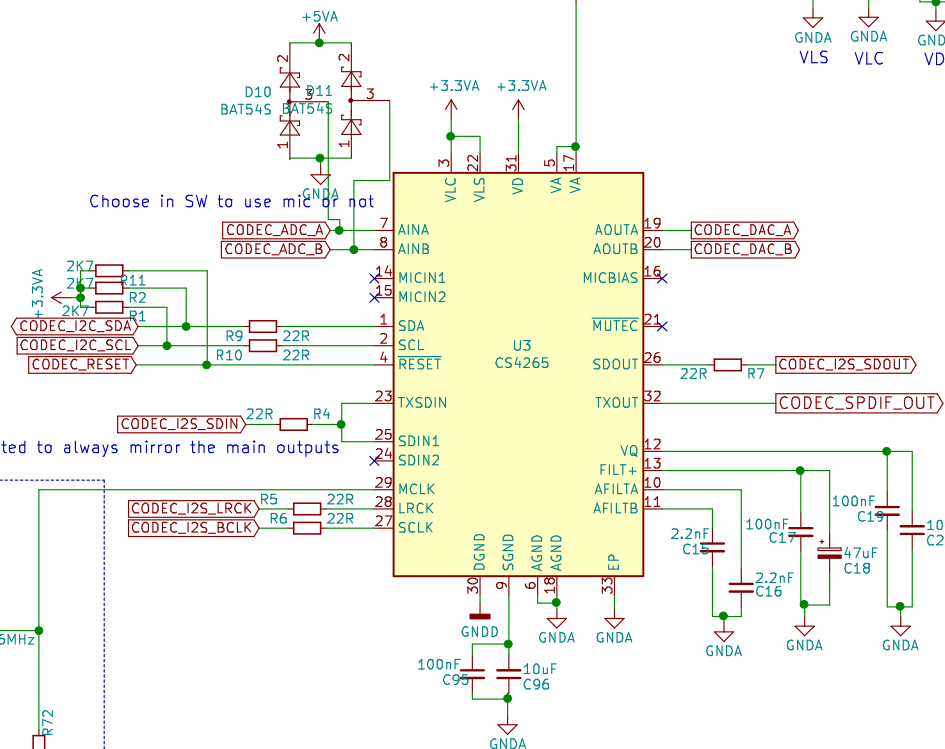
Rev: 0.1

KiCad E.D.A. kicad 5.1.8-db983349187ubuntu20.04.1

Id: 2/11

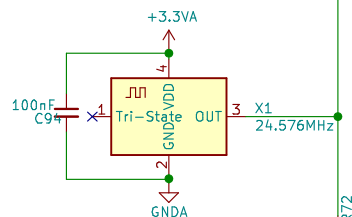


Use ferrite beads for EMI suppression and improved power supply decoupling



SPDIF is connected to always mirror the main outputs

Codec MCLK



The 0ohm resistor at I2S_MCLK must only be placed when the xtal is not placed, and vice versa.



USB outp Power: 500mA
Inp Power: 12V 500mA
<https://github.com/moddevices/hw-mod-uno>
Uno Audio processing board

MOD Devices GmbH

Sheet: /audio-codec/

File: audio-codec.sch

Title: MOD Uno – Main Board

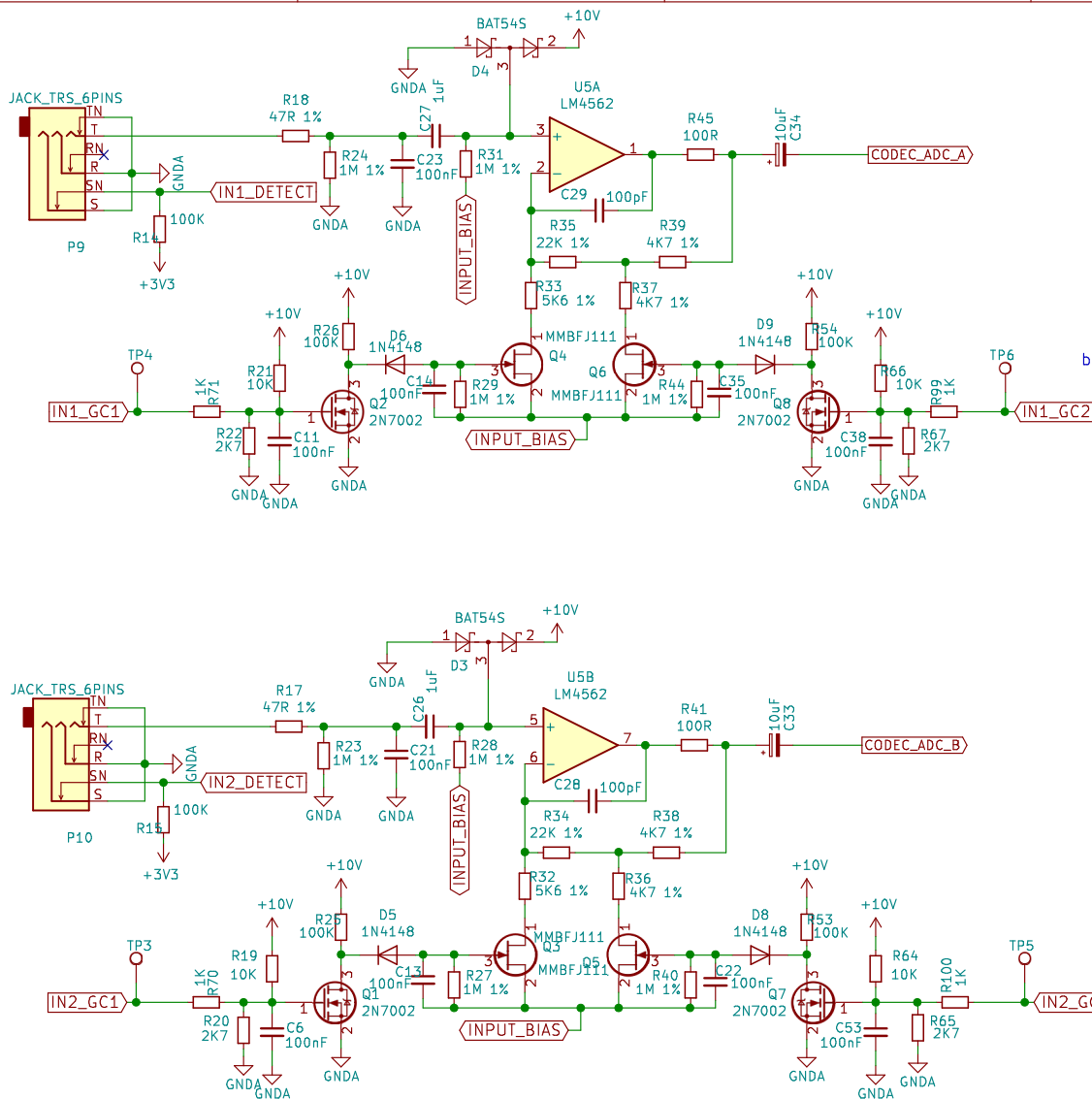
Size: A4

Date: 2019-08-16

KiCad E.D.A. kicad 5.1.8-d8983349187ubuntu20.04.1

Rev: 0.1

Id: 3/11



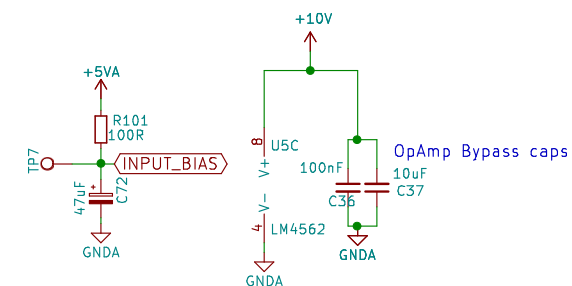
GC2, GC1	GAIN (dB)
1, 1	0.0
1, 0	6.0
0, 1	15.0
0, 0	20.4

The gain calculation includes the R_{DSon} value
J110: $R_{DSon} = 18R$

The CODEC only presents optimal dynamic range and THD+N for PGA setting: $-12dB$ to $+6dB$.

best achievable noise will be $-94dB$ since this is the Johnson noise with an impedance of $1M\Omega$

Use ferrite beads for EMI suppression and improved power supply decoupling



USB outp Power: 500mA
Inp Power: 12V 500mA
<https://github.com/moddevices/hw-mod-uno>
Uno Audio processing board

MOD Devices GmbH

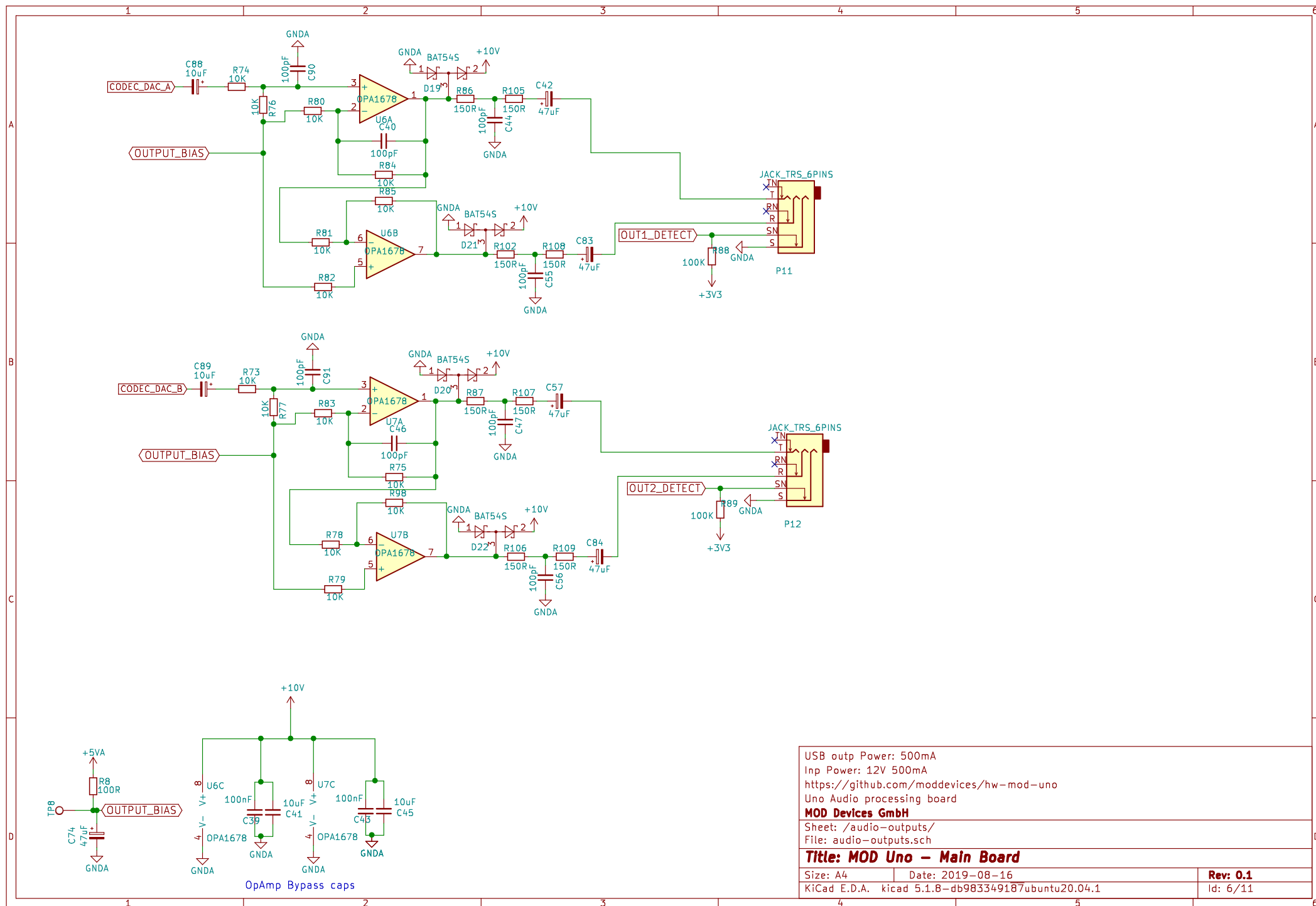
Sheet: /audio-inputs/

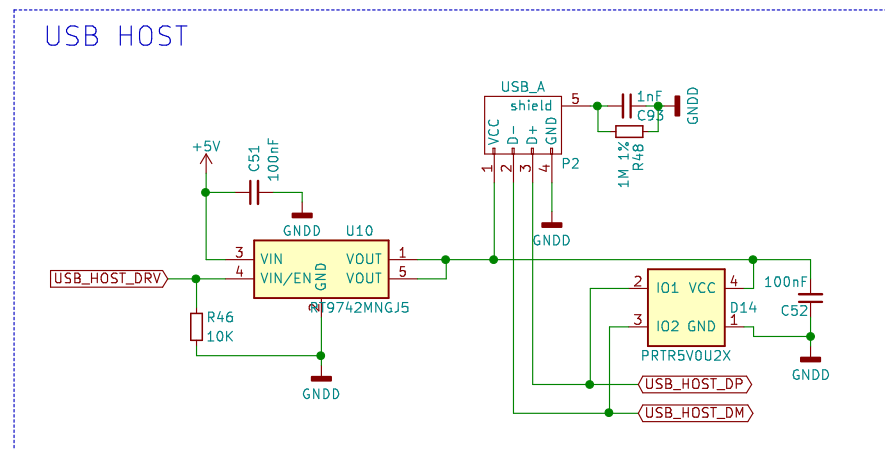
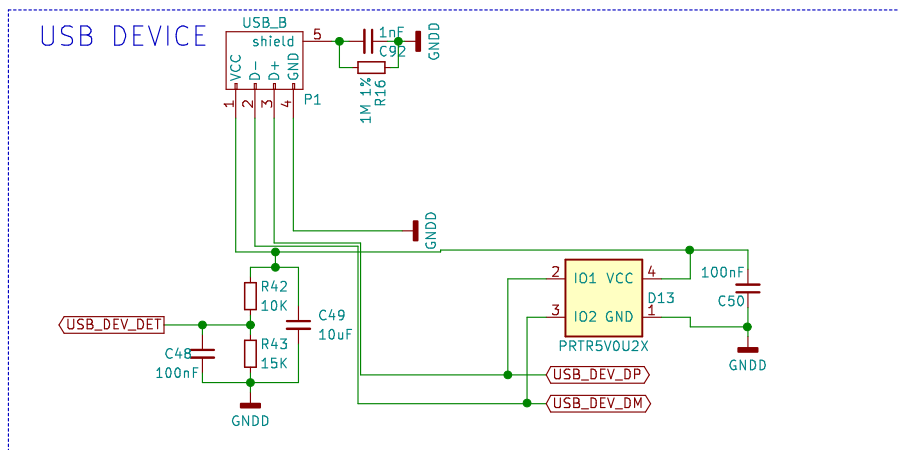
File: audio-inputs.sch

Title: MOD Uno – Main Board

Size: A4 Date: 2019-08-16
KiCad E.D.A. kicad 5.1.8-d8983349187ubuntu20.04.1

Rev: 0.1
Id: 5/11





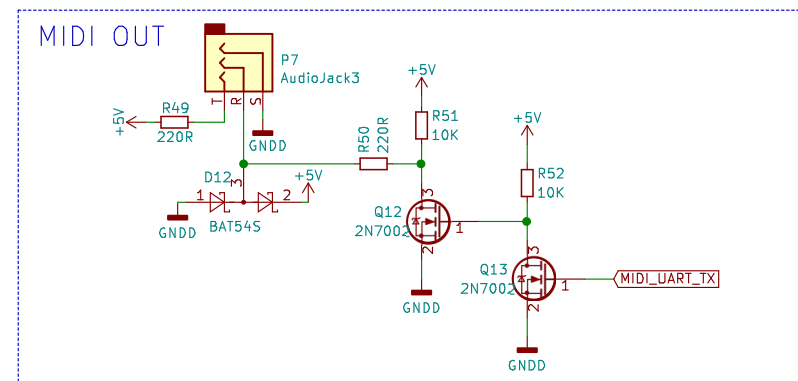
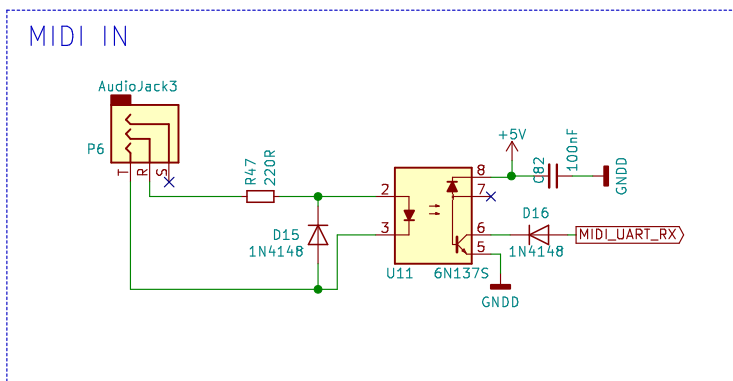
USB outp Power: 500mA
 Inp Power: 12V 500mA
<https://github.com/moddevices/hw-mod-uno>
 Uno Audio processing board
MOD Devices GmbH

Sheet: /usb/
 File: usb.sch

Title: MOD Uno – Main Board

Size: A4 Date: 2019-08-16
 KiCad E.D.A. kicad 5.1.8-db983349187ubuntu20.04.1

Rev: 0.1
 Id: 7/11

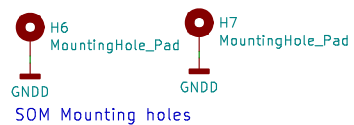
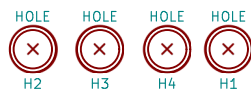
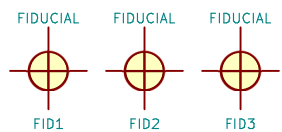


USB outp Power: 500mA		
Inp Power: 12V 500mA		
https://github.com/moddevices/hw-mod-uno		
Uno Audio processing board		
MOD Devices GmbH		
Sheet: /midi/		
File: midi.sch		
Title: MOD Uno – Main Board		
Size: A4	Date: 2019-08-16	Rev: 0.1
KiCad E.D.A. kicad 5.1.8-db983349187ubuntu20.04.1		Id: 8/11



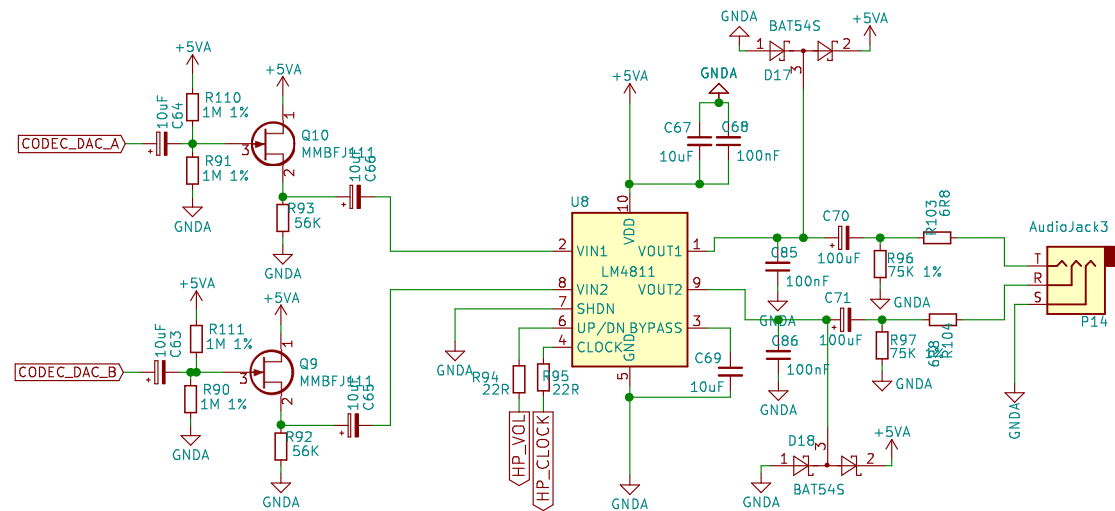
Title: MOD Uno – Main Board

Rev: 0.1
Id: 9/11



USB outp Power: 500mA		
Inp Power: 12V 500mA		
https://github.com/moddevices/hw-mod-uno		
Uno Audio processing board		
MOD Devices GmbH		
Sheet: /mechanics/		
File: mechanics.sch		
Title: MOD Uno – Main Board		
Size: A4	Date: 2019-08-16	Rev: 0.1
KiCad E.D.A. kicad 5.1.8-db983349187ubuntu20.04.1		Id: 10/11

Minimal load of 16 ohm with 0.1% THD+N
Max power 105mW



Rev:
Id: 11/11