Input switching

J1

R12 0R
R1B R1A R13 240R
G6KU-2 K1
GNDS GND

LNA ACAL source

K3 SILxx-1Axx-71x
RE_P 3   5 RE3
R14 18k20
VREF7   7 CP_9M
K4 SILxx-1Axx-71x
RE_P 3   5 RE4
R23 24R   R18 24R
GNDS

LNA

G6KU-2 K2
R2B R2A
GNDS   GNDS

LNAMP
IN
JA_CS   CS
JA_DOUT   DOUT
JA_SCK   SCK
JA_DIN   DIN
OUT
VR28P   VR28P
VR28N   VR28N
File: lnamp.kicad_sch

Local reference + ACAL divider

VREF_EXT
R19 620R
C7 100n
U5 OPA202
+15V   -15V
GND
VREF7
R15 20k00   CP_07V
R20 2k00   CP_70M
R24 200R0
R17 18k20   C6 100n   +5V
R22 12k1   GND
U7 TLV333
+15V   -15V
GND
VR28P
R21 5k
R26 5k
C8 100n
C5 100n   +15V
U6 OPA202
GND   -15V
VR28N
R27 3k
GNDS

VREF goes to 7V reference from ADR1399 on the Homer board

Input buffer

C1 100n   +15V
GND
U2 OPA145
BOOT
C4 100n
GND   -15V
FB1
R5 24k
C2 470p   R6 24k   C3 470p
GNDS   GNDS
GND

LNA overvoltage comparator

R1 12k   R2 3k   R3 12k
VR28N   VR28P
0.31V
U1A LM393
+   -
U1B LM393
-0.31V
R7 620R
R8 620R   R9 15k
COMP
+3V3   +15V
R4 3k
U1C LM393
V+   V-
-15V

Main MUX

U3 DG408
GNDS   4 S1   D 8
JAMP_OUT   S2   EN
VREF7 6   S3   A2 15 MS_A2
CP_07V 7   S4   A1 16 MS_A1
CP_70M 12   S5   A0 1 MS_A0
CP_9M 11   S6   V+ 13   +15V
10   S7   GND 14   GND
9   S8   V- 5   -15V
R11 3k   +5V

MAMP_IN

nvm_amp_main

IN   OUT
BS
MA_G1   G1
MA_G10   G10
MA_G100   G100
R10 24R   OUT
x1/x10/x100 amplifier

Relay switching

J2
U4A 74LVC125   R1A
U4B 74LVC125   R1B
U4C 74LVC125   R2A
U4D 74LVC125   R2B
R16 3k   RE3
Q1 BC847
R25 3k   RE4
Q2 BC847
RE_P
U4E 74LVC125   VCC
D1 LL43
D2 SM6T6V8A
C13 100n
C12 10u

Connectors + misc stuff

+15V   +15V   +9V   +5V
J3
-9V   -15V

+5V   +9V   +15V
C9 10u   C10 10u   C11 10u
C15 10u   C16 10u
GND   -9V   -15V

J4
MA_G1 1   2 MS_A2
MA_G10 3   4 MS_A1
MA_G100 5   6 MS_A0
7   8 JA_DOUT
9   10 JA_DIN
11   12 COMP
JA_CS 13   14
JA_SCK 15   16   GND

U8 MCP1700-33
VI   VO   +3V3
GND
+5V   C14 2u2
GND   GND

J5
1 VREF_EXT
2
3 OUT
4   GND
GNDS

TP1 VREF7
TP2 VR28P
TP3 VR28N
TP4   GNDS

H1   H2
H3   H4
H5   H6
LOGO1
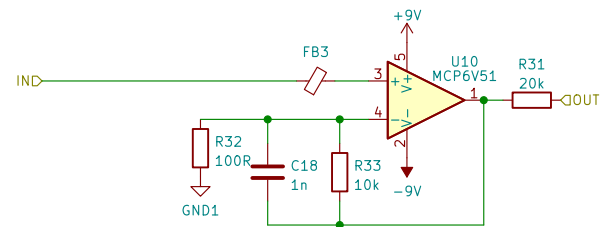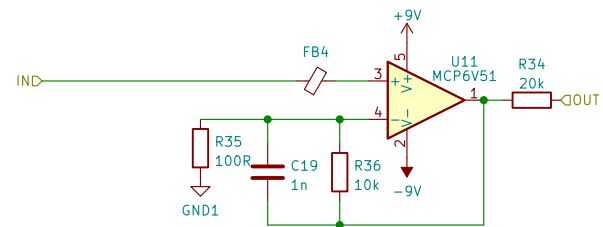
This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.
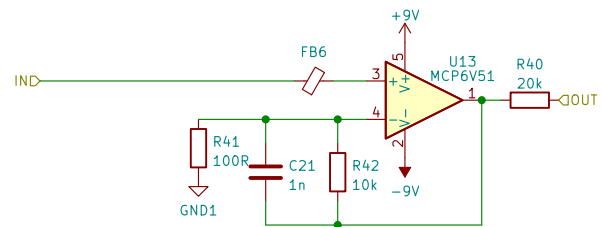
IND

FB3

+9V

5
V+
3 +
U10
MCP6V51
1

R31
20k

OUT

4
2 −
V−

−9V

R32
100R

C18
1n

R33
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IND

FB4

U11
MCP6V51

+9V

5
V+
3 +
4 -
2 V-
1

−9V

R34
20k

OUT

R35
100R

C19
1n

R36
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

+9V

FB5

IND

U12
MCP6V51

3 +
5 V+

1

R37
20k

OUT

4
2 − V−

R38
100R

C20
1n

R39
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IND>

FB6

+9V

U13
MCP6V51

R40
20k

>OUT

R41
100R

C21
1n

R42
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB7

+9V

U14
MCP6V51

3
5
V+
+
1

4
−
V−
2

R43
20k

OUT

R44
100R

C22
1n

R45
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L/LNAMP_1L5/
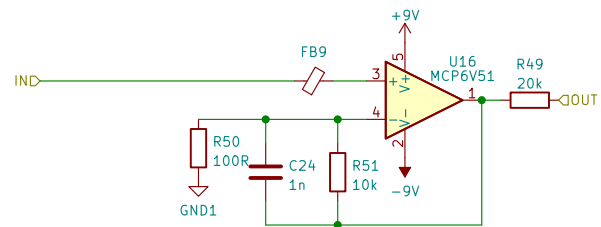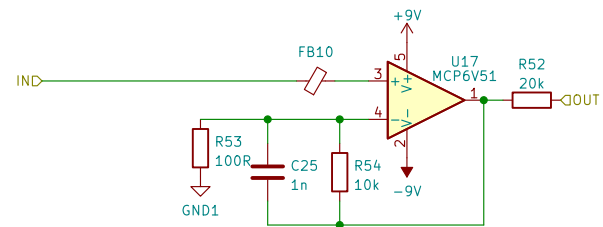File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1

Rev:
Id: 7/113

+9V

FB8

IND

U15
MCP6V51

R46
20k

OUT

3
5
V+
+
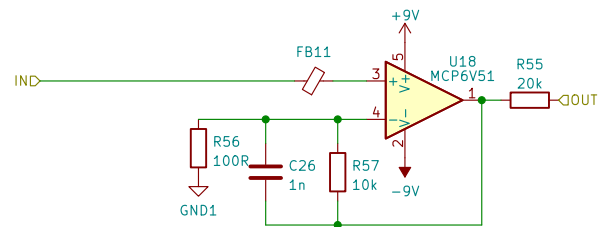4
−
V−
2
1

R47
100R

C23
1n

R48
10k

GND1

−9V
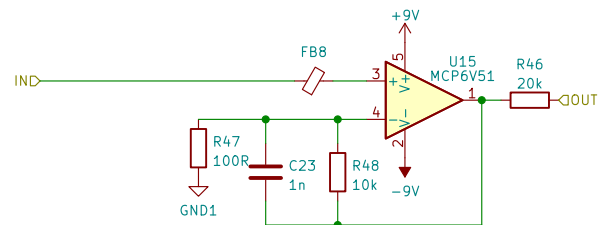
This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L/LNAMP_1L6/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1

Rev:
Id: 8/113

+9V

FB9

IN▷

U16
MCP6V51

3 +
5 V+
4
2 V-
1

R49
20k

▷OUT

R50
100R

C24
1n

R51
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L/LNAMP_1L7/
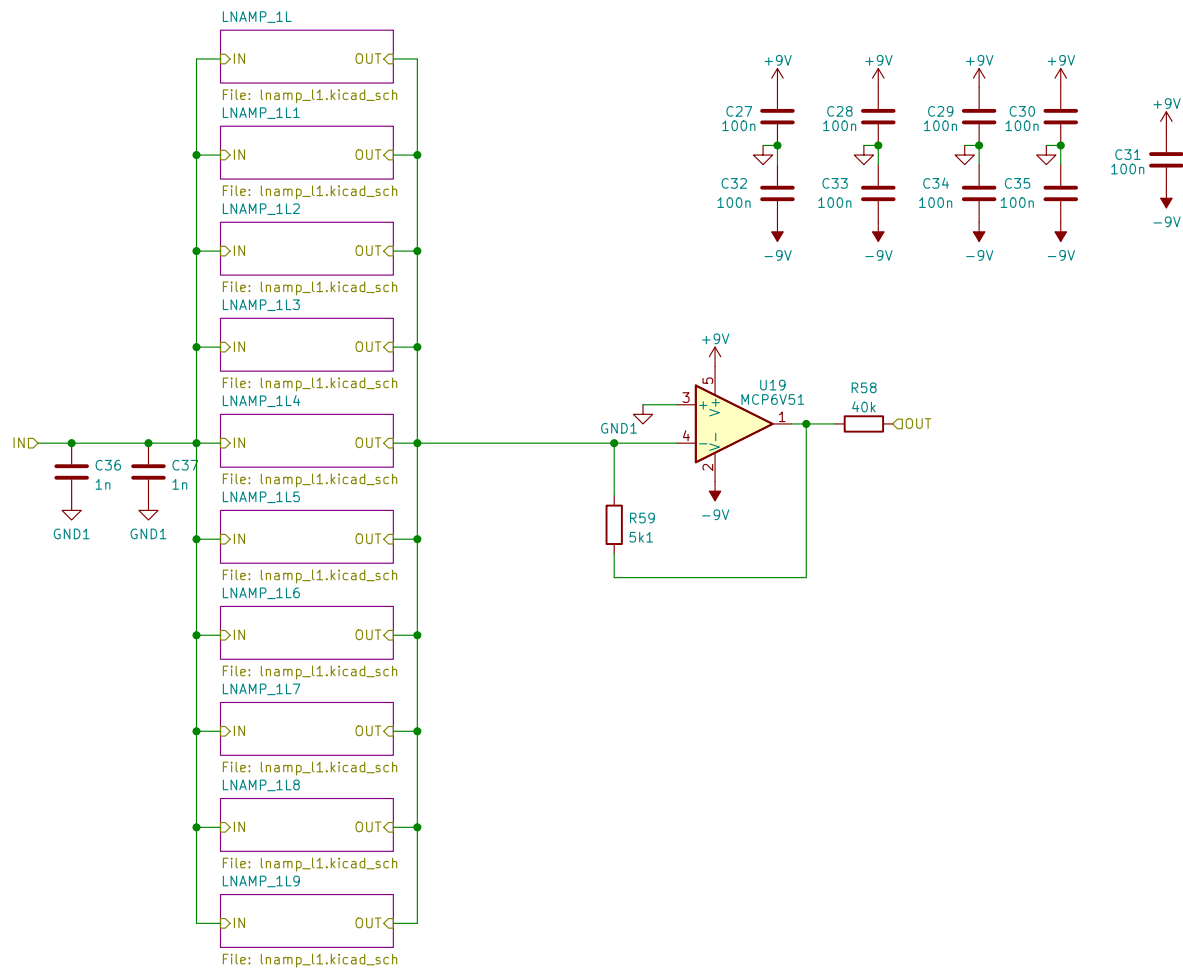File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
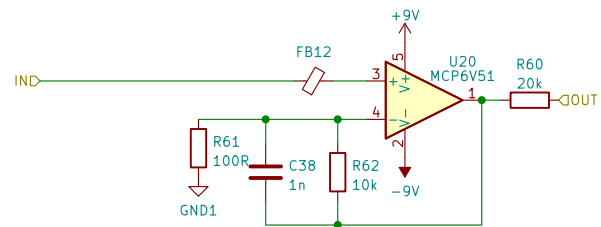Id: 9/113

IN

FB10

+9V

U17
MCP6V51

R52
20k

OUT

3

5

V+

1

4

2

V-

-9V

R53
100R

C25
1n

R54
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB11

+9V

U18
MCP6V51

R55
20k

IND

3 +

5 V+

1
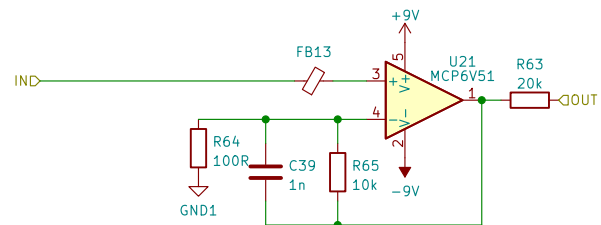
OUT

4 −

2 V−

−9V

R56
100R

C26
1n

R57
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L/LNAMP_1L9/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 11/113

LNAMP_1L

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L1

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L2

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L3

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L4

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L5

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L6

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L7

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L8

IN   OUT

File: lnamp_l1.kicad_sch
LNAMP_1L9

IN   OUT

File: lnamp_l1.kicad_sch

IN

C36   C37
1n   1n

GND1   GND1

+9V
C27   C28   C29   C30
100n   100n   100n   100n

C32   C33   C34   C35
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V
C31
100n

−9V

+9V

U19
MCP6V51
GND1

R58
40k
OUT

R59
5k1

−9V

IN

FB12

+9V

U20
MCP6V51

R60
20k

OUT

R61
100R

C38
1n

R62
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

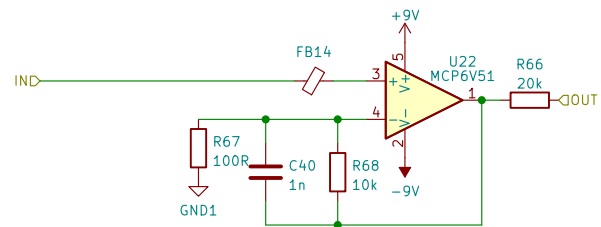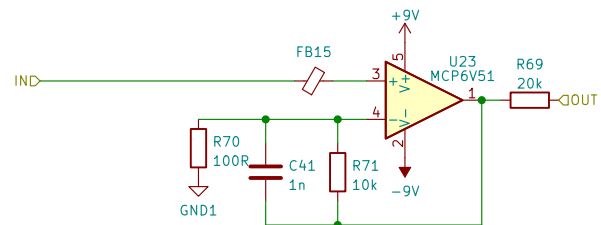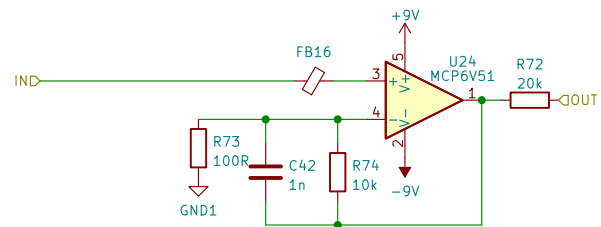Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1

Rev:
Id: 13/113

IN

FB13

+9V

U21
MCP6V51

R63
20k

OUT

3
5
1
4
2

V+
V-
+
−

R64
100R

C39
1n

R65
10k

GND1

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L1/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1

Rev:

Id: 14/113

IN

FB14

+9V

U22
MCP6V51

R66
20k

OUT

R67
100R

C40
1n

R68
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

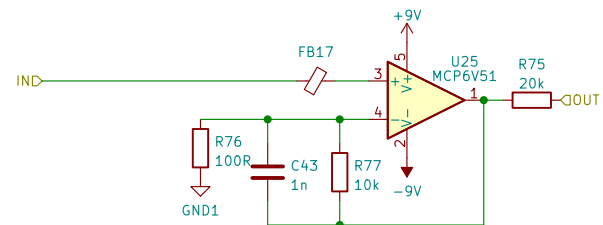Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L4/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 15/113

IN

FB15

U23
MCP6V51

R69
20k

OUT

+9V

−9V

R70
100R

C41
1n

R71
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L2/
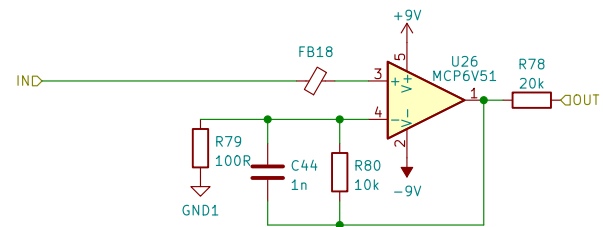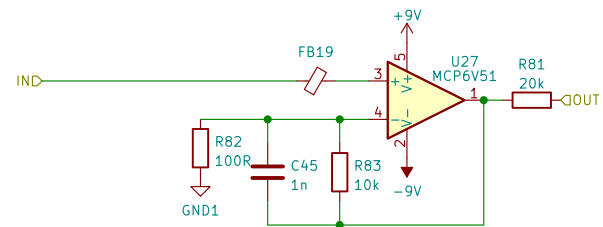File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 16/113

FB16

IND

R72
20k

U24
MCP6V51

+9V

−9V

OUT

3

5

1

4

2

V+

V−

R73
100R

C42
1n

R74
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB17

+9V

U25
MCP6V51

5
V+

3
+

1

2
V−

4
−
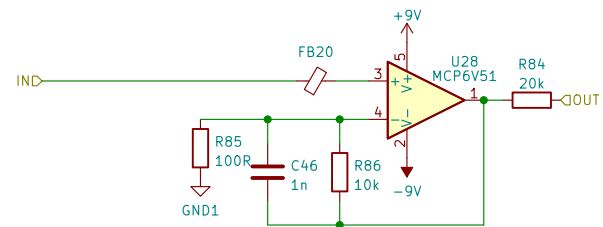
−9V

R75
20k

OUT

R76
100R

C43
1n

R77
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L8/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 18/113

IND

FB18

+9V

U26
MCP6V51

R78
20k

OUT

3

5
V+

4

1

2
V-

−9V

R79
100R

C44
1n

R80
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB19

+9V

U27
MCP6V51

R81
20k

OUT

3

5

1

4

2

−9V
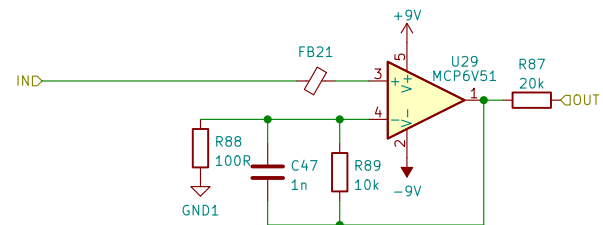
R82
100R

C45
1n

R83
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L6/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

Rev:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Id: 20/113

IND

FB20

+9V

U28
MCP6V51

R84
20k

OUT

3

5

V+

1

4

2

V−

−9V

R85
100R

C46
1n

R86
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L1/LNAMP_1L7/
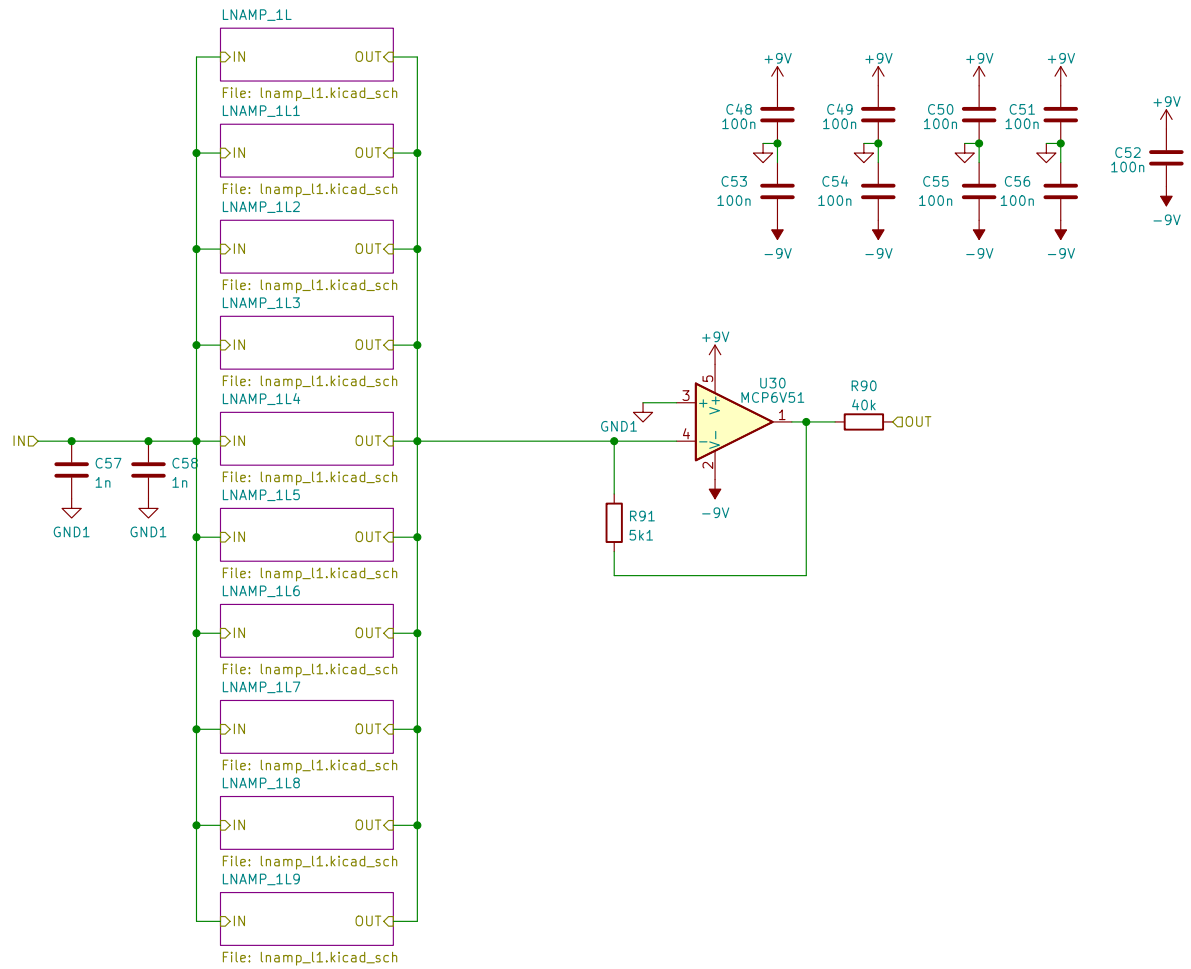File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

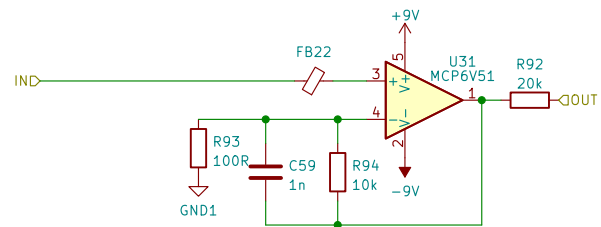KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 21/113

IN

FB21

U29
MCP6V51

R87
20k

OUT

+9V

−9V

R88
100R

C47
1n

R89
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

LNAMP_1L

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L1

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L2

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L3

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L4

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L5

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L6

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L7

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L8

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L9

IN   OUT
File: lnamp_l1.kicad_sch

IN

C57   C58
1n   1n

GND1   GND1

+9V   +9V   +9V   +9V

C48   C49   C50   C51
100n   100n   100n   100n

C53   C54   C55   C56
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V

C52
100n

−9V

+9V

U30
MCP6V51

GND1

R90
40k

OUT

R91
5k1

−9V

IN

FB22

+9V

U31
MCP6V51

R92
20k

OUT

3

5

1

V+

4

2

-

R93
100R

C59
1n

R94
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

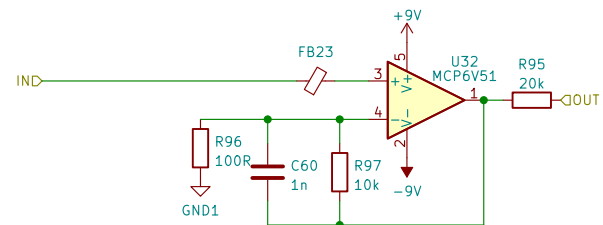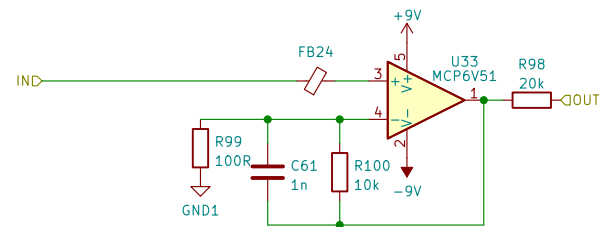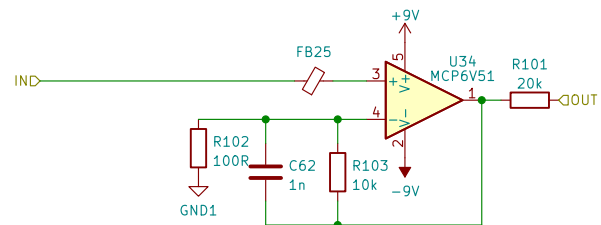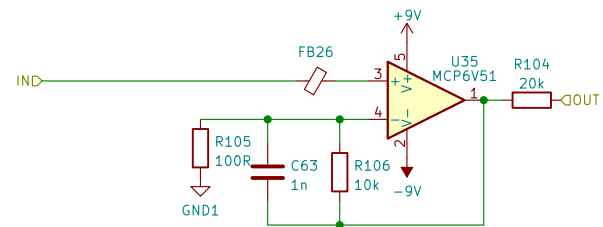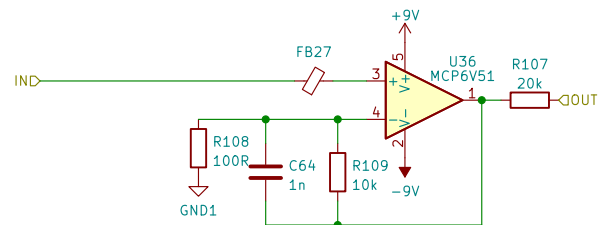Sheet: /LNAMP/LNAMP_2L2/LNAMP_1L/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

Rev:

KiCad E.D.A.   kicad 6.0.5-a6ca702e91-116~ubuntu20.04.1

Id: 24/113

IN

FB23

+9V

U32
MCP6V51

3 + 5
   V+
1

R95
20k

OUT

R96
100R

2 −
   V-
4

GND1

C60
1n

R97
10k

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB24

+9V

U33
MCP6V51

R98
20k

OUT

3

5
V+

4

1

2
V−

−9V

R99
100R

C61
1n

R100
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Title:

Size: A4 | Date:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 26/113

IND

FB25

+9V

U34
MCP6V51

3
5
V+
+

1

R101
20k

OUT

4
2
V−
−

−9V

R102
100R

C62
1n

R103
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB26

U35
MCP6V51

R104
20k

IND

+9V

−9V

R105
100R

C63
1n

R106
10k

GND1

OUT

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB27

U36
MCP6V51

+9V
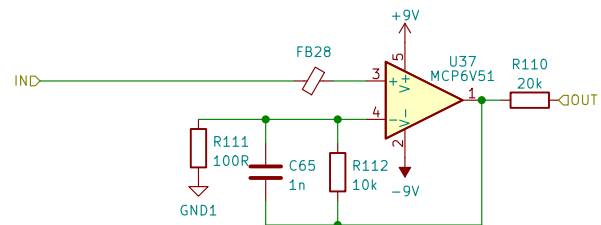
R107
20k

OUT

R108
100R

C64
1n

R109
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L2/LNAMP_1L8/
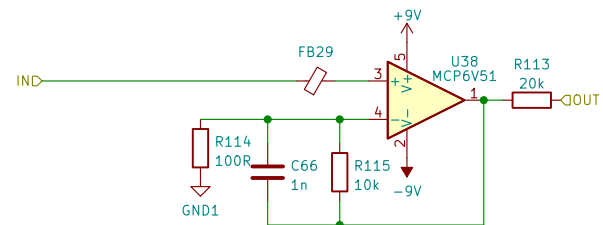File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5-a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 29/113

FB28

+9V

U37
MCP6V51

R110
20k

3 +

5 V+

1

2 V-

4 -

IND

OUT

R111
100R

C65
1n

R112
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L2/LNAMP_1L9/
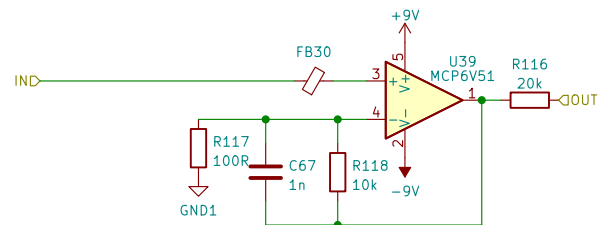File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5-a6ca702e91-116-ubuntu20.04.1

Rev:

Id: 30/113

IN

FB29

+9V

U38
MCP6V51

R113
20k

OUT

R114
100R

C66
1n

R115
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L2/LNAMP_1L6/
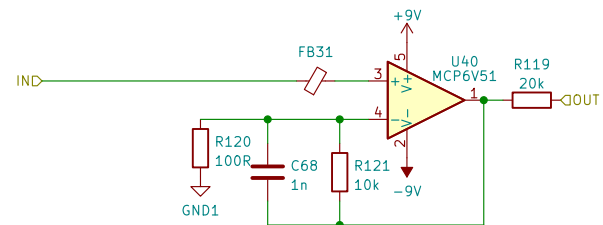File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 31/113

FB30

IND

R116
20k

OUT

U39
MCP6V51

+9V

−9V

R117
100R

C67
1n

R118
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

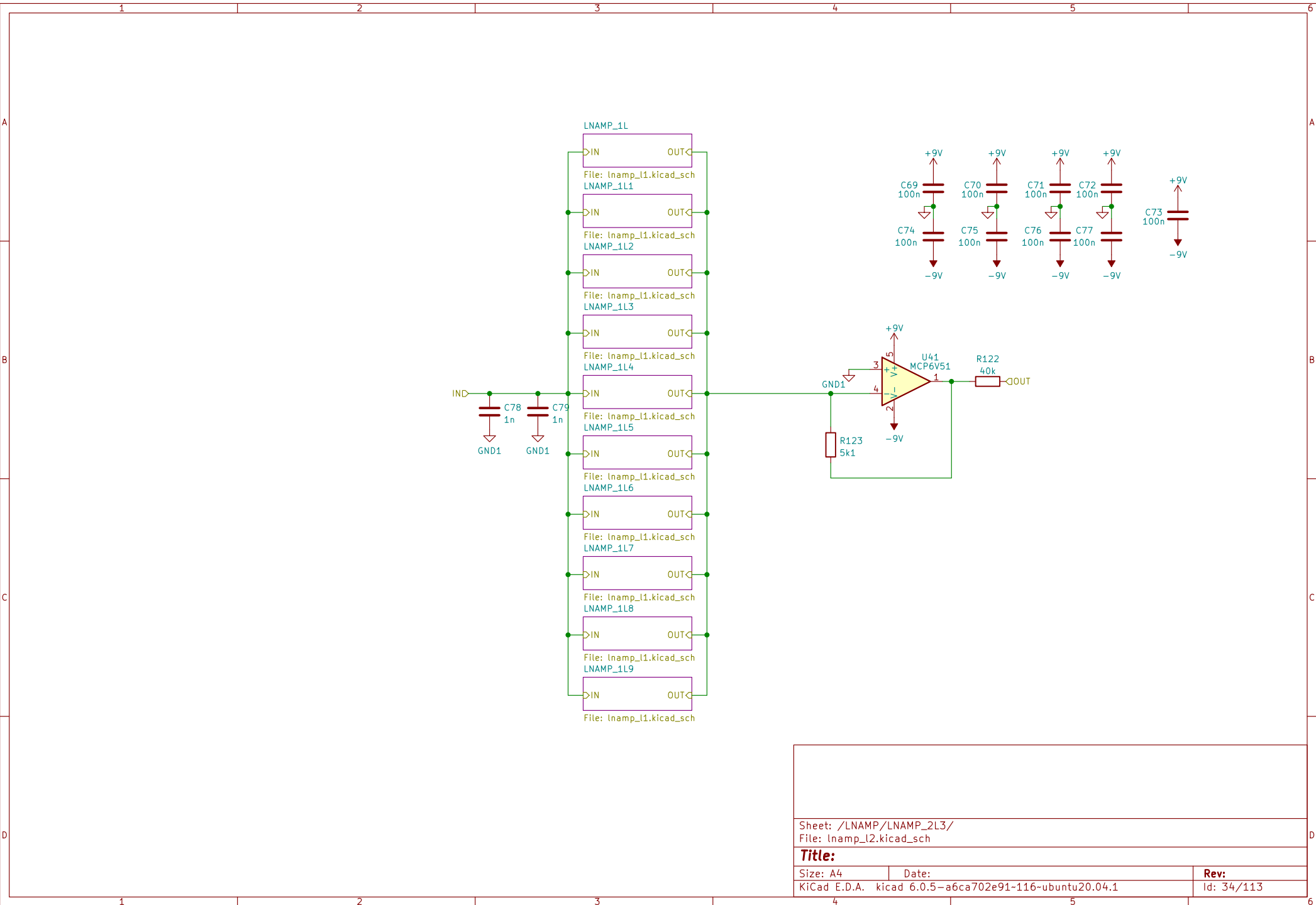Sheet: /LNAMP/LNAMP_2L2/LNAMP_1L7/
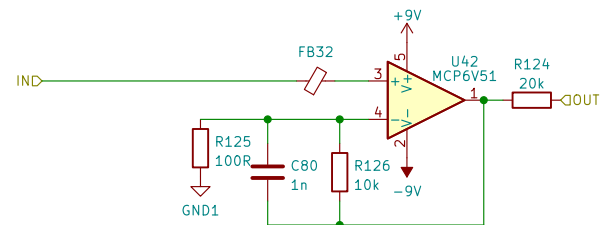File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

Rev:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Id: 32/113

FB31

IND

+9V

U40
MCP6V51

R119
20k

OUT

R120
100R

C68
1n

R121
10k

−9V

GND1

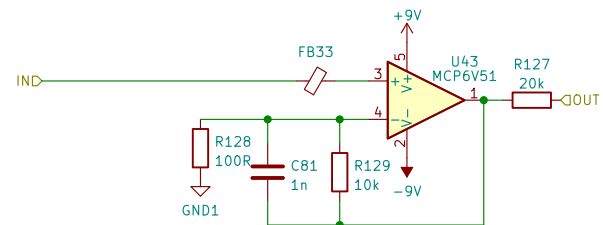This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

LNAMP_1L

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L1

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L2

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L3

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L4

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L5

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L6

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L7

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L8

IN | OUT
File: lnamp_l1.kicad_sch

LNAMP_1L9

IN | OUT
File: lnamp_l1.kicad_sch

IN

C78
1n

C79
1n

GND1

GND1

+9V

C69
100n

+9V

C70
100n

+9V

C71
100n

+9V

C72
100n

+9V

C73
100n

C74
100n

C75
100n

C76
100n

C77
100n

−9V

−9V

−9V

−9V

−9V

+9V

U41
MCP6V51

GND1

R122
40k

OUT

R123
5k1

−9V

+9V

FB32

IN▷

U42
MCP6V51

R124
20k

◁OUT

3 +
V+ 5
1
4 −
V− 2

R125
100R

C80
1n

R126
10k

GND1

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB33

+9V

U43
MCP6V51

R127
20k

IND

3
+
V+ 5
1
OUT

4
−
2
V−

−9V

R128
100R

C81
1n

R129
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB34

IND

U44
MCP6V51

+9V

R130
20k

OUT

3

5

1

4

2

−9V

V+

V−

+

−

R131
100R

C82
1n

R132
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L3/LNAMP_1L4/
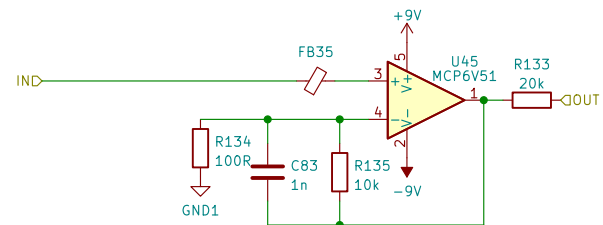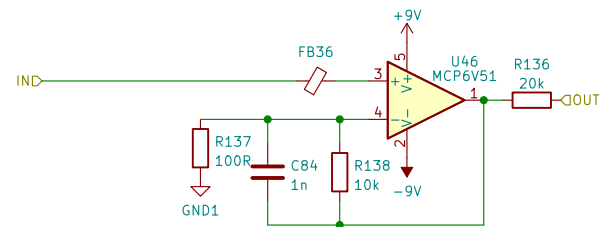File: lnamp_l1.kicad_sch

Title:

Size: A4

Date:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 37/113

IN

FB35

+9V

U45
MCP6V51

R133
20k

OUT

3 +
5 V+

1

4 −
2 V−

−9V

R134
100R

C83
1n

R135
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

+9V

FB36

U46
MCP6V51

R136
20k

IND

3

5

V+

1
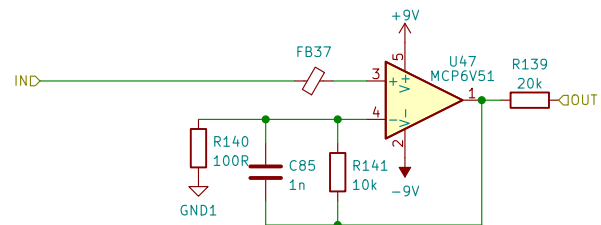
2

4

V-

OUT

R137
100R

C84
1n

R138
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L3/LNAMP_1L3/
File: lnamp_l1.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 39/113

FB37

IN▷

U47
MCP6V51

R139
20k

▷OUT

+9V

R140
100R

C85
1n

R141
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷─────────────── FB38 ──── 3 +
+9V
5 V+
U48
MCP6V51
1 ──── R142
20k ──▷OUT
4 −
2 V−
−9V

R143
100R

C86
1n

R144
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L3/LNAMP_1L9/
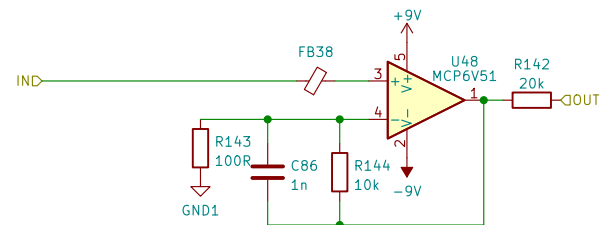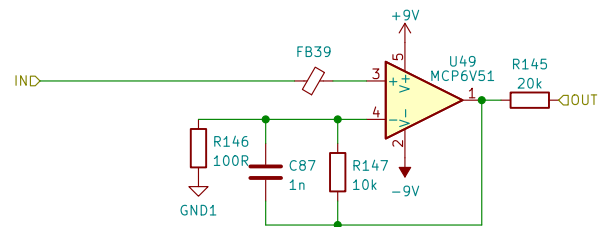File: lnamp_l1.kicad_sch
Title:
Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1
Rev:
Id: 41/113

+9V

FB39

IND

U49
MCP6V51

R145
20k

OUT

3

5

1

4

2

R146
100R

C87
1n

R147
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB40

U50
MCP6V51

+9V

R148
20k

OUT

3

5
V+

1

4

2
V-

-9V

R149
100R

C88
1n

R150
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L3/LNAMP_1L7/
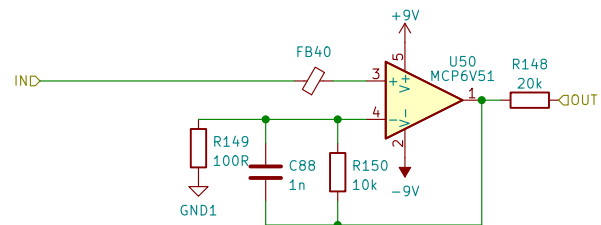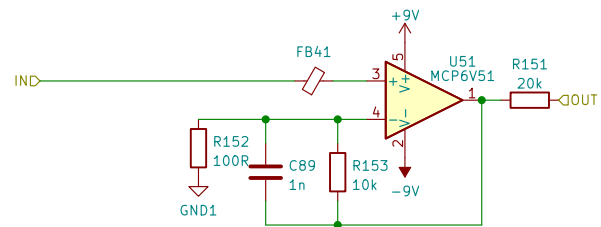File: lnamp_l1.kicad_sch
Title:
Size: A4   Date: Rev:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1   Id: 43/113

FB41

IND

+9V

U51
MCP6V51

R151
20k

OUT

3

5

1

4

2

R152
100R

C89
1n

R153
10k

−9V

GND1

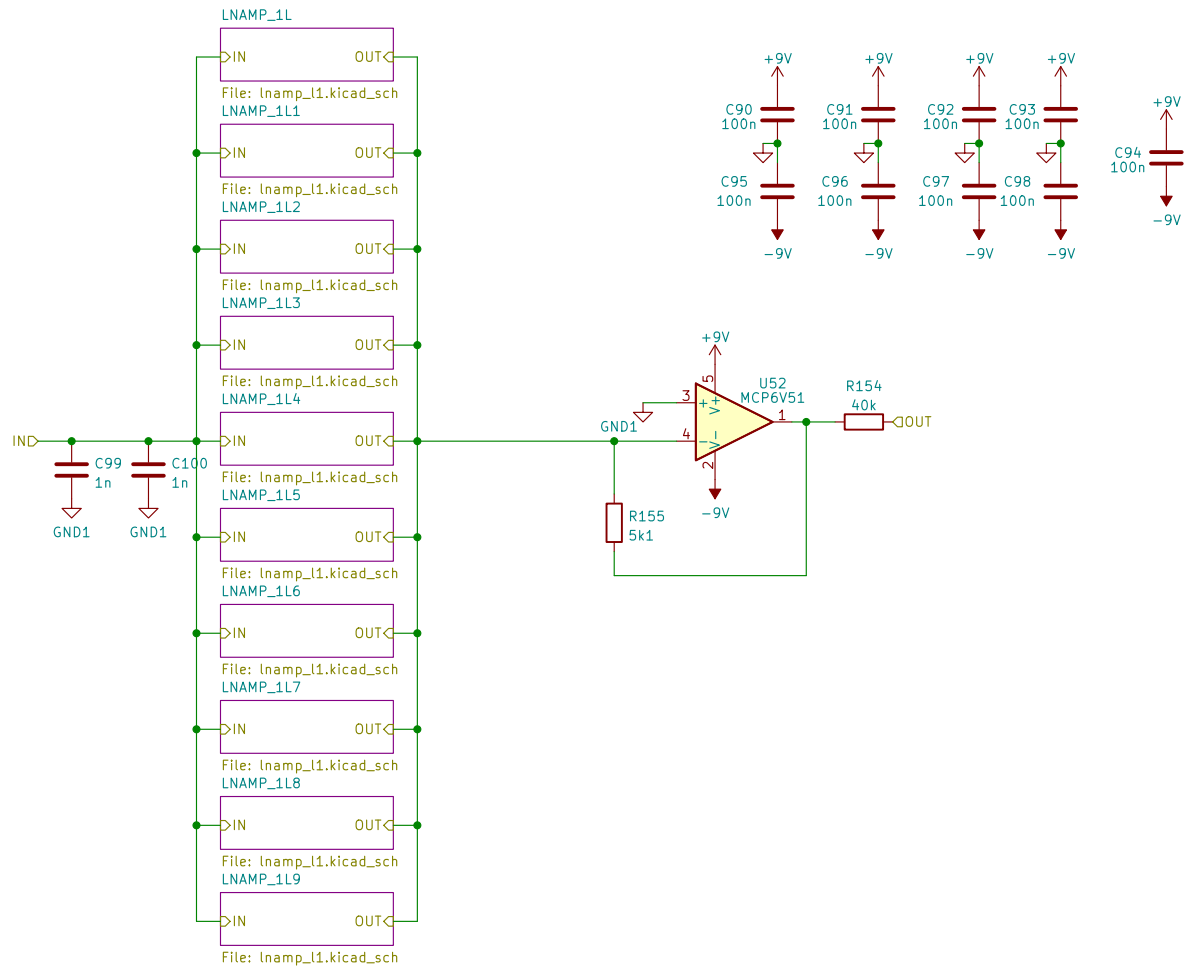This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

LNAMP_1L
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L1
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L2
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L3
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L4
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L5
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L6
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L7
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L8
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L9
IN   OUT
File: lnamp_l1.kicad_sch

IN

C99   C100
1n   1n

GND1   GND1

+9V   +9V   +9V   +9V
C90   C91   C92   C93
100n   100n   100n   100n

C95   C96   C97   C98
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V
C94
100n

−9V

+9V
U52
MCP6V51
GND1
R154
40k
OUT

−9V

R155
5k1

LNAMP_1L
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L1
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L2
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L3
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L4
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L5
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L6
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L7
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L8
IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L9
IN   OUT
File: lnamp_l1.kicad_sch

IN

C110   C111
1n   1n

GND1   GND1

+9V   +9V   +9V   +9V
C101   C102   C103   C104
100n   100n   100n   100n

C106   C107   C108   C109
100n   100n   100n   100n

-9V   -9V   -9V   -9V

+9V
C105
100n

-9V

+9V
U53
MCP6V51
3 +
         1
GND1
4 -
2
-9V

R156
40k
OUT

R157
5k1

IND

FB42

+9V

U54
MCP6V51

R158
20k

OUT

3 +
5 V+
1
4 −
2 V−

R159
100R

C112
1n

R160
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L4/LNAMP_1L/
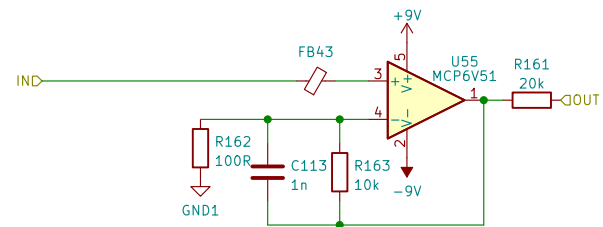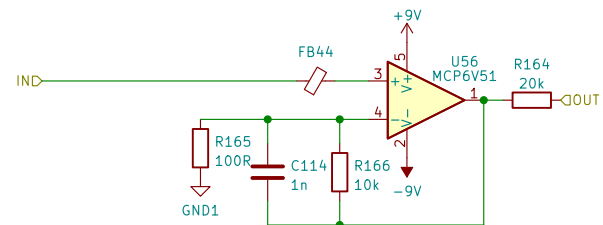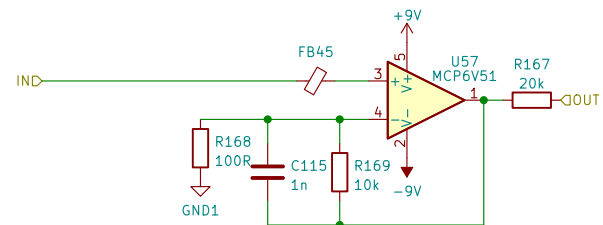File: lnamp_l1.kicad_sch
Title:
Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1
Rev:
Id: 47/113

IN▷────────────FB43────3 +[V+ 5]
                        U55
                        MCP6V51
                        1 ───R161───▷OUT
                                20k
                        4 −[V− 2]

+9V

R162
100R

C113   R163
1n   10k

GND1

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB44

IND

+9V

U56
MCP6V51

R164
20k

OUT

3
+
5 V+

1

4
2 V-

-9V

R165
100R

C114
1n

R166
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L4/LNAMP_1L4/
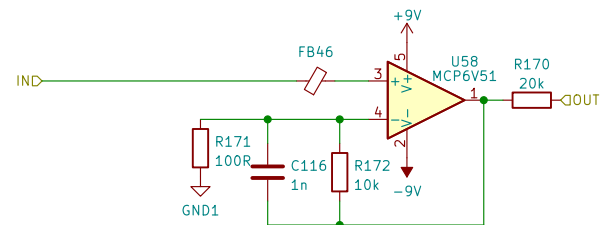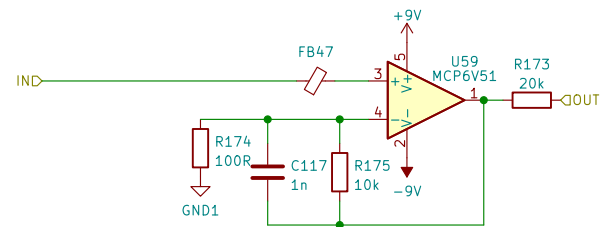File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A. kicad 6.0.5-a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 49/113

IN

FB45

+9V

U57
MCP6V51

R167
20k

OUT

3

5

V+

1

4

2

V−

−9V

R168
100R

C115
1n

R169
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷

FB46

U58
MCP6V51

+9V

R170
20k

▷OUT

R171
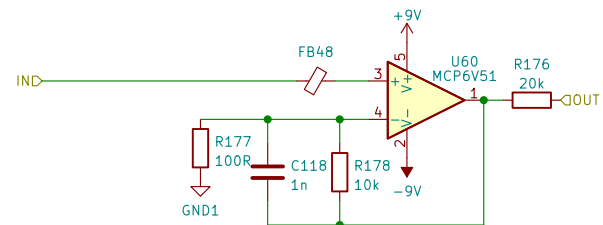100R

C116
1n

R172
10k

GND1

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L4/LNAMP_1L3/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 51/113

IN

FB47

+9V

U59
MCP6V51

R173
20k

OUT

3

5
V+

+

4
V-

1

2

−9V

R174
100R

C117
1n

R175
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷

FB48

+9V

U60
MCP6V51

R176
20k

▷OUT

3 +
5 V+
1
4 −
2 V−

−9V

R177
100R

C118
1n

R178
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IND

FB49

+9V

U61
MCP6V51

R179
20k

OUT

3

5

V+

+

1

4

−

V−

2

R180
100R

C119
1n

R181
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB50

IN

R183
100R

GND1

C120
1n

R184
10k

+9V

U62
MCP6V51

−9V

R182
20k

OUT

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

+9V

FB51

IND

U63
MCP6V51

3
+ V+
5

1

R185
20k

OUT

4
− V−
2

R186
100R

C121
1n

R187
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L4/LNAMP_1L5/
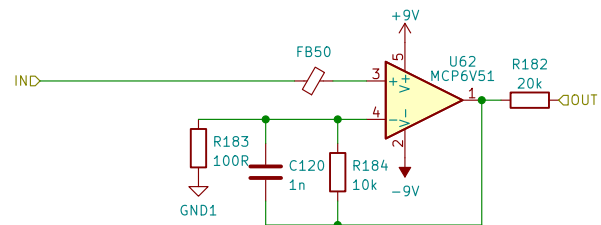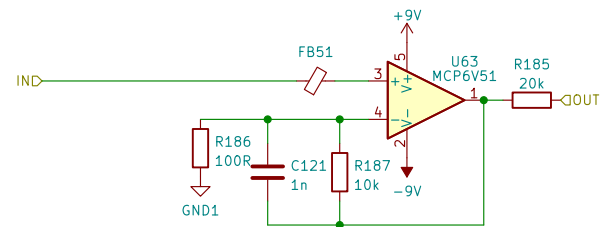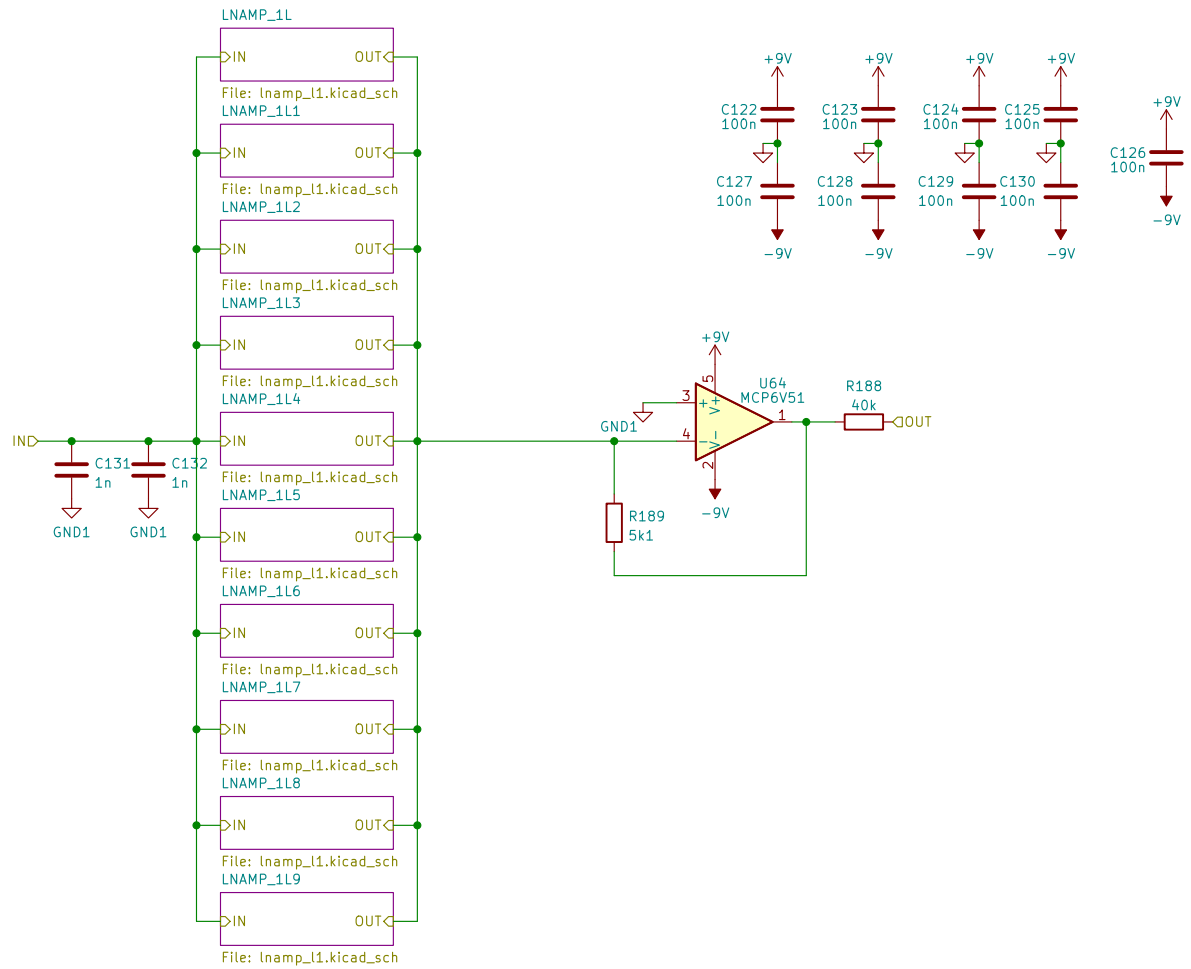File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1
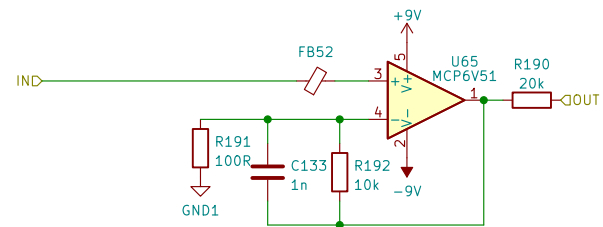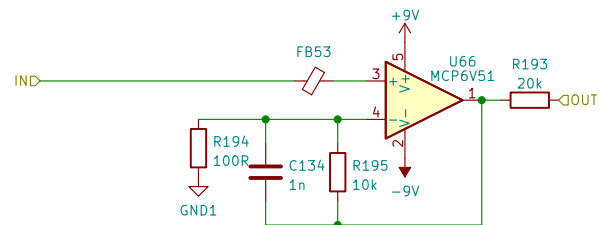
Rev:

Id: 56/113

LNAMP_1L

LNAMP_1L1
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L2
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L3
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L4
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L5
IN>   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L6
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L7
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L8
>IN   OUT<
File: lnamp_l1.kicad_sch

LNAMP_1L9
>IN   OUT<
File: lnamp_l1.kicad_sch

IN>

C131
1n

C132
1n

GND1   GND1

+9V   +9V   +9V   +9V

C122   C123   C124   C125
100n   100n   100n   100n

C127   C128   C129   C130
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V

C126
100n

−9V

+9V

GND1

U64
MCP6V51

3 +
4 −
1
2

5 V+
V−

−9V

R188
40k

OUT<

R189
5k1

IND

FB52

+9V

U65
MCP6V51

R190
20k

OUT

3
+
5
V+
1

4
−
2
V−

−9V

R191
100R

C133
1n

R192
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB53

+9V

U66
MCP6V51

R193
20k

3 + 5
V+
IND ▷─────────────/▱/──────────|＼
                               | ＼ 1
                          4 | ＼─────/▱/────▷OUT
                             − | ／
                          2 V−／
R194   −9V
100R   C134   R195
       1n   10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB54

U67
MCP6V51

+9V

R196
20k

OUT

3

5

1

4

2
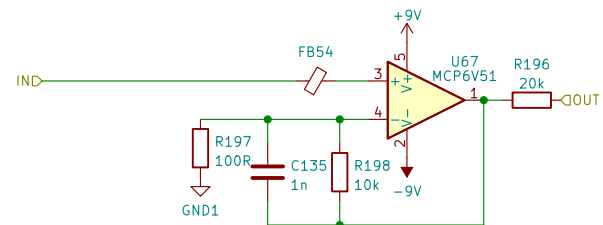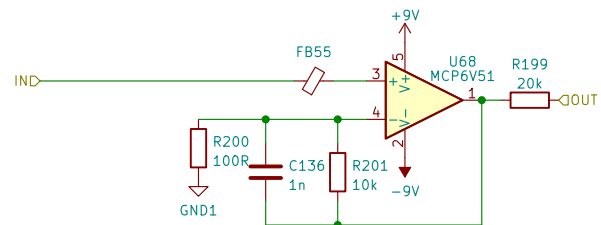
R197
100R

C135
1n

R198
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L4/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 60/113

IND

FB55

+9V

U68
MCP6V51

R199
20k

OUT

3
5
V+
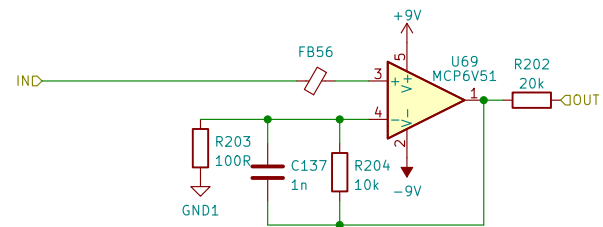+
1
4
−
2
V−

R200
100R

C136
1n

R201
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L2/
File: lnamp_l1.kicad_sch
Title:
Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1
Rev:
Id: 61/113

IND

FB56

+9V

U69
MCP6V51

R202
20k

OUT

3
+
V+
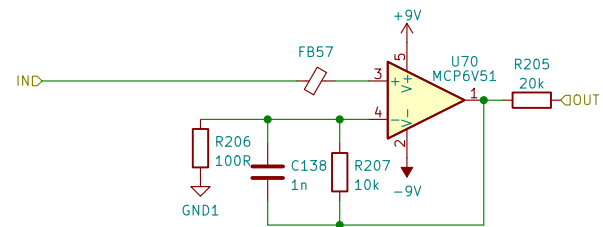5

1

4
−
V−
2

R203
100R

C137
1n

R204
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L3/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 62/113

FB57

+9V

IND

U70
MCP6V51

R205
20k

OUT

R206
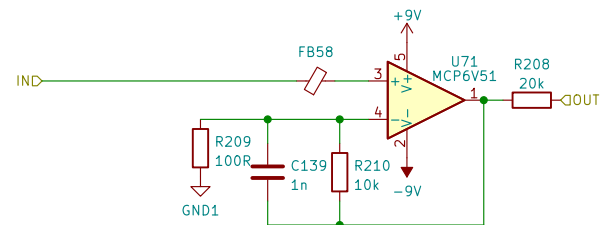100R

C138
1n

R207
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L8/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

Rev:

KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Id: 63/113

FB58

+9V

U71
MCP6V51

R208
20k

IND

3 +

5 V+

1

OUT

4 -

2 V-

-9V

R209
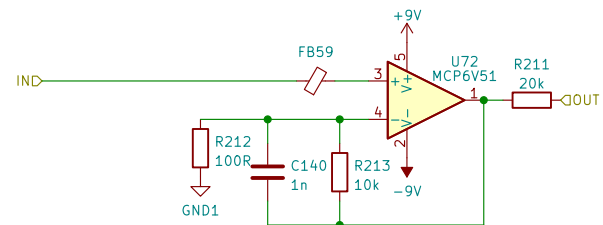100R

C139
1n

R210
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L9/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A. kicad 6.0.5-a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 64/113

FB59

IND

+9V

U72
MCP6V51

R211
20k

OUT

R212
100R

C140
1n

R213
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB60

U73
MCP6V51

R214
20k

+9V

IND

3

+

5

V+

1

OUT

4

-

2

V-

R215
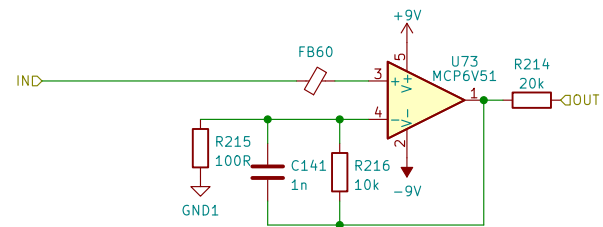100R

C141
1n

R216
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L7/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5-a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 66/113

FB61

U74
MCP6V51

R217
20k

+9V

IND

3
+
V+ 5

1

OUT

4
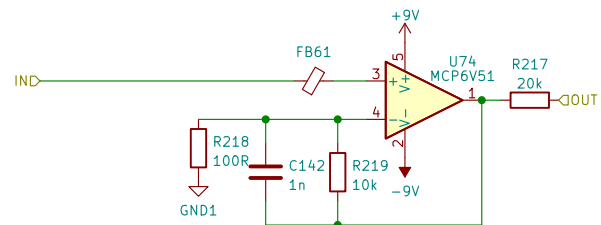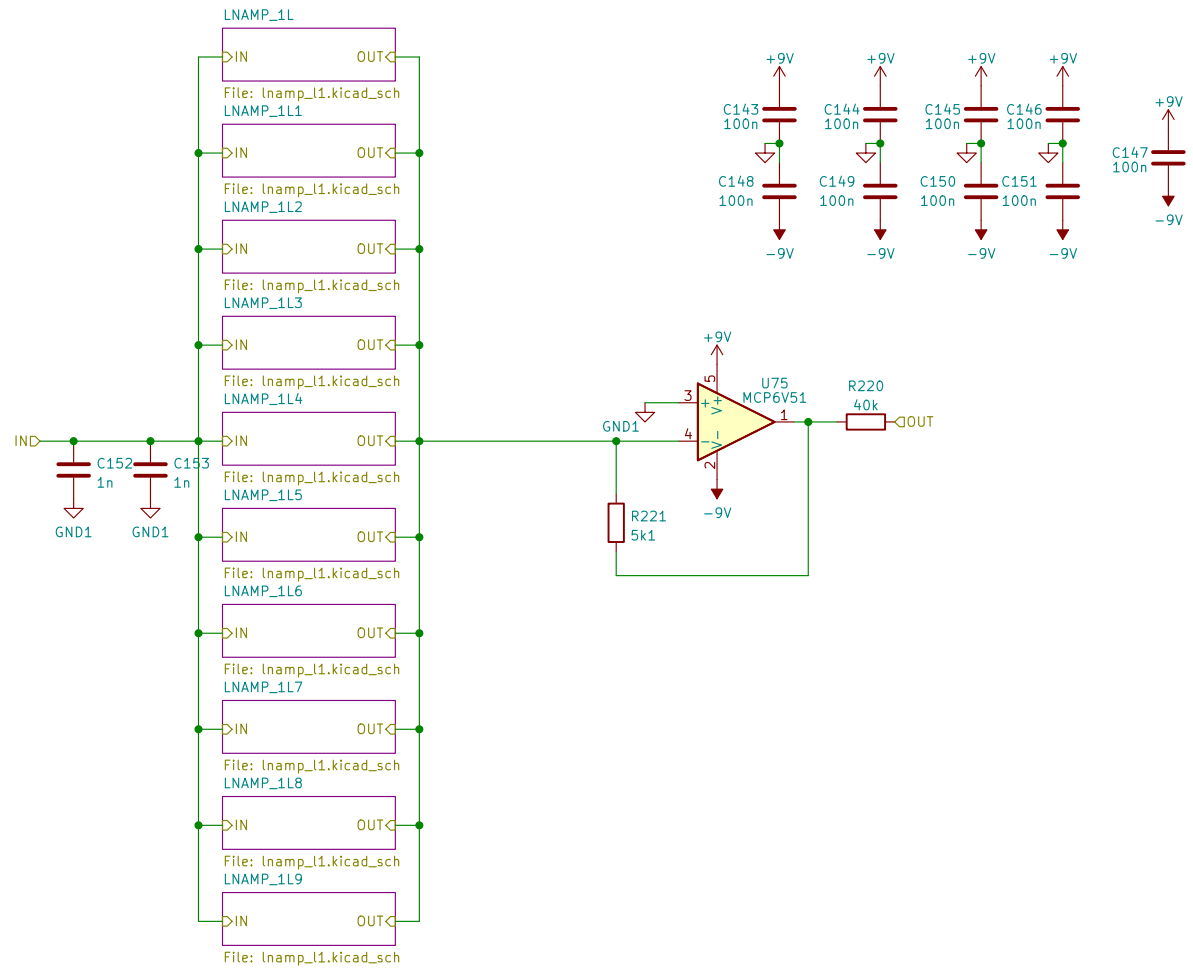−
V− 2

−9V

R218
100R

C142
1n

R219
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L5/LNAMP_1L5/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1
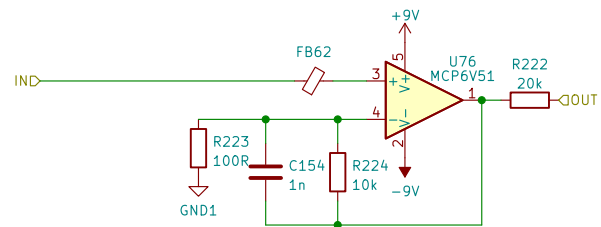
Rev:
Id: 67/113

LNAMP_1L

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L1

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L2

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L3

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L4

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L5

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L6

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L7

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L8

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L9

IN   OUT
File: lnamp_l1.kicad_sch

IN

C152   C153
1n   1n

GND1   GND1

+9V   +9V   +9V   +9V   +9V

C143   C144   C145   C146
100n   100n   100n   100n   C147
                                   100n

C148   C149   C150   C151
100n   100n   100n   100n

−9V   −9V   −9V   −9V   −9V

+9V

U75
MCP6V51
3 +
5   R220
1   40k   OUT
GND1
4 −
2
−9V

R221
5k1

FB62

IND

+9V

U76
MCP6V51

R222
20k

OUT

R223
100R

C154
1n

R224
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

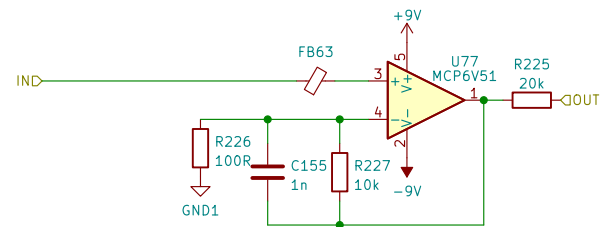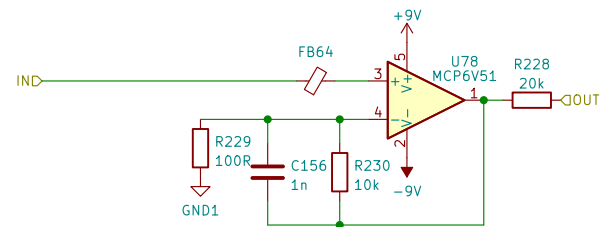Sheet: /LNAMP/LNAMP_2L6/LNAMP_1L/
File: lnamp_l1.kicad_sch

Title:

Size: A4 | Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 69/113

+9V

FB63

U77
MCP6V51

R225
20k

IND

3
+

5
V+

1

OUT

4
−

2
V−

R226
100R

C155
1n

R227
10k

GND1

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IND○─────────────── FB64 ──────── 3 ╲
                                     ╲ U78
                              +9V   ╲ MCP6V51   R228
                               ↑   5 ╲   20k
                               │ V+   ╲ 1 ────┬──[ ]──○OUT
                            ┌──┤   ╲──┘   │
                            │ 4 │──   ╱   │
                            │   │ 2 ╱   │
                    R229   │   V- ── ╱   │
                    100R ──┤   │   ╱   │
                     ┌─┐   │   -9V ↓ ╱   │
                     │ │ C156 R230   │
                     │ │ 1n   10k   │
                    GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB65

+9V

U79
MCP6V51

R231
20k

OUT

3

5

1

4

2

−9V

R232
100R

C157
1n

R233
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L6/LNAMP_1L2/
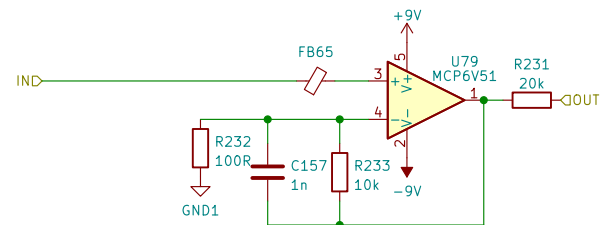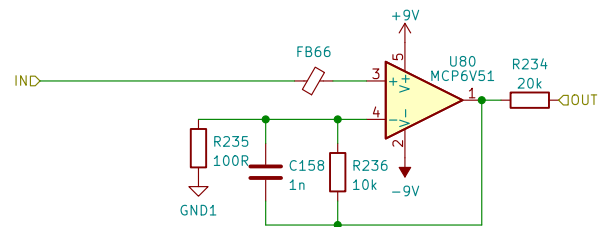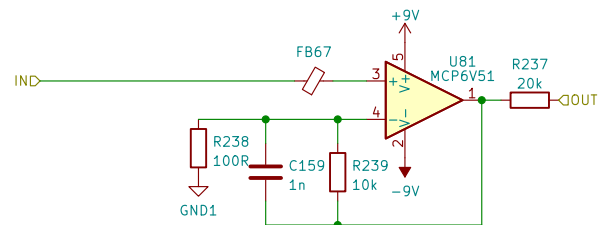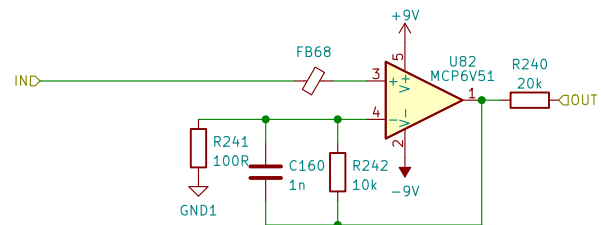File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 72/113

IN▷

FB66

+9V

U80
MCP6V51

3 +
5 V+
1
R234
20k
▷OUT

4 −
2 V−
−9V

R235
100R

C158
1n

R236
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷————————FB67————3 +V+ 5
U81
MCP6V51

+9V

R237
20k
————▷OUT

1

4 —V 2

−9V

R238
100R

C159
1n

R239
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB68

+9V

3

5

V+

U82
MCP6V51

1

R240
20k

OUT

4

2

V−

R241
100R

C160
1n

R242
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

+9V

FB69

U83
MCP6V51

R243
20k

OUT

3

5

1

2

4

R244
100R

C161
1n

R245
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB70

IND

U84
MCP6V51

R246
20k

OUT

+9V

−9V

R247
100R

C162
1n

R248
10k

GND1

Sheet: /LNAMP/LNAMP_2L6/LNAMP_1L7/
File: lnamp_l1.kicad_sch
Title:
Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1
Rev:
Id: 77/113

IN▷─────────────────────────── FB71 ────── 3

+9V

FB71

U85
MCP6V51

R249
20k
─▷OUT

R250
100R

C163
1n

R251
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L6/LNAMP_1L5/
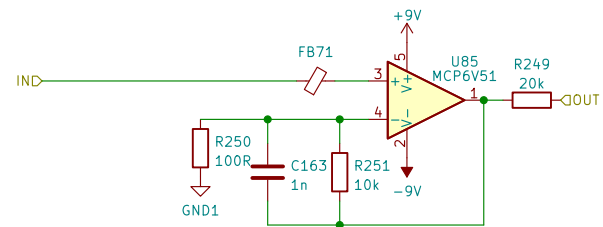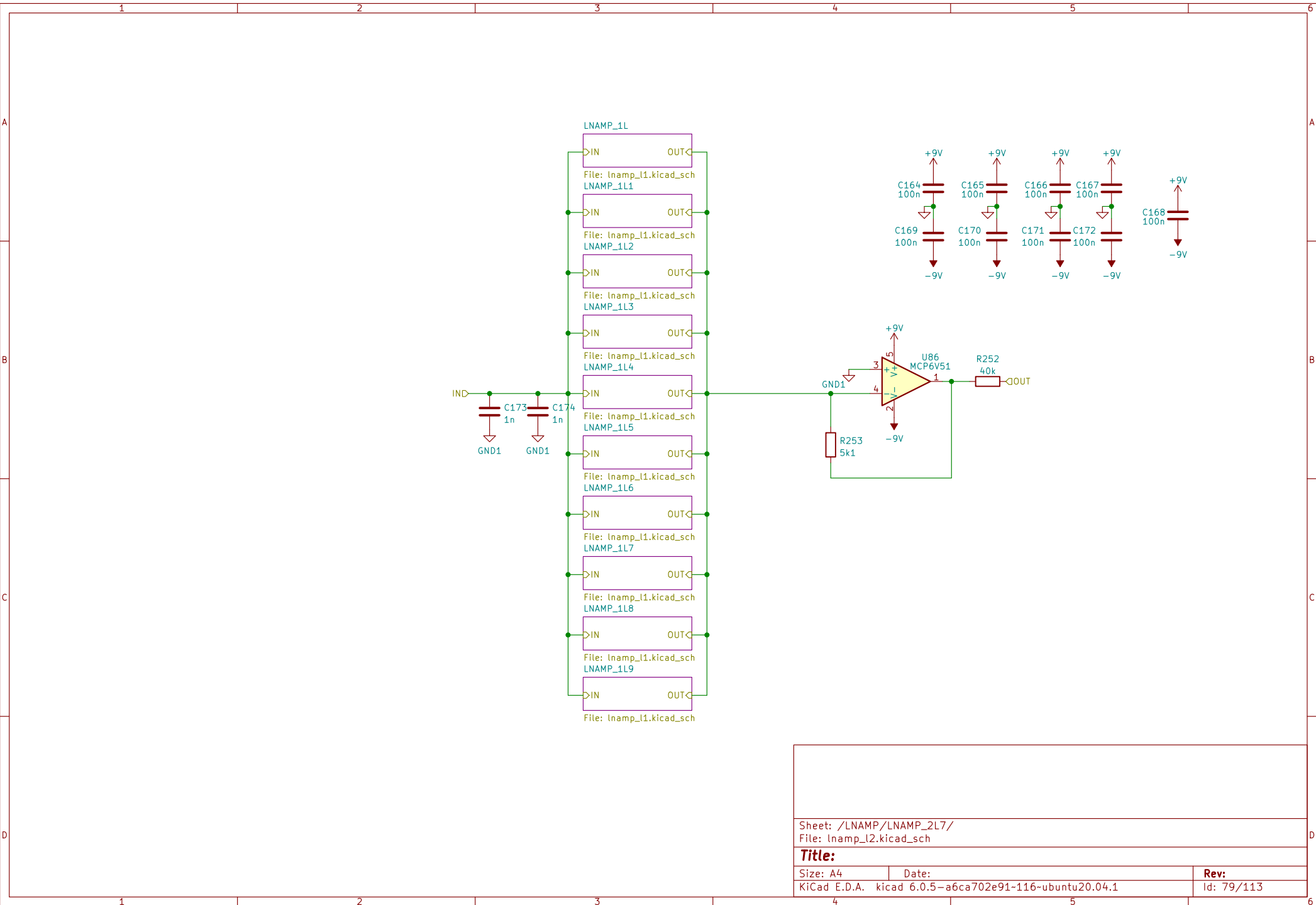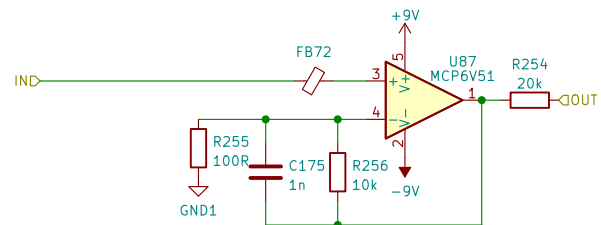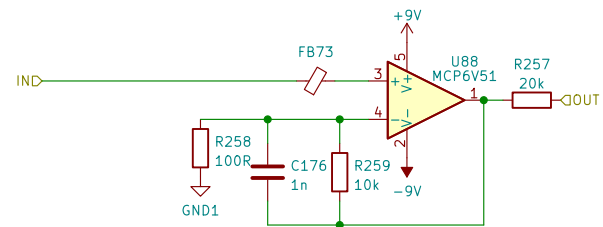File: lnamp_l1.kicad_sch
Title:
Size: A4   Date: Rev:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1   Id: 78/113

LNAMP_1L
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L1
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L2
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L3
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L4
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L5
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L6
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L7
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L8
IN   OUT
File: lnamp_l1.kicad_sch

LNAMP_1L9
IN   OUT
File: lnamp_l1.kicad_sch

IN

C173   C174
1n   1n
GND1   GND1

+9V
C164   C165   C166   C167
100n   100n   100n   100n

C169   C170   C171   C172
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V
C168
100n
−9V

+9V
U86
MCP6V51
3 +
5 V+
1
4 −
2 V−
GND1
−9V

R252
40k
OUT

R253
5k1

IN

FB72

+9V

U87
MCP6V51

R254
20k

OUT

3
5
1
4
2

V+

+

−

V−

R255
100R

C175
1n

R256
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB73

+9V

U88
MCP6V51

3
+
V+ 5
1

R257
20k

OUT

2
-
V-
4

R258
100R

C176
1n

R259
10k

-9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB74

U89
MCP6V51

R260
20k

OUT

+9V

−9V

R261
100R

C177
1n

R262
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN○——

FB75

R264
100R

GND1

C178
1n

R265
10k

+9V

U90
MCP6V51

3 V+
5
4
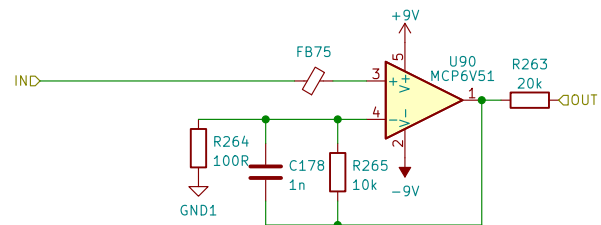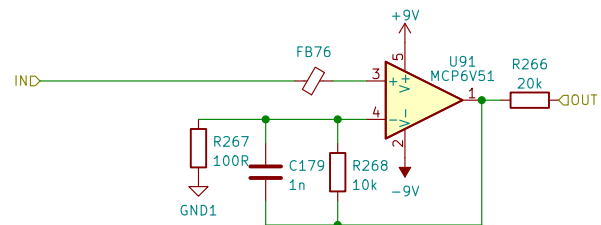2 V−

1

−9V

R263
20k

○OUT

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L7/LNAMP_1L2/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 83/113

FB76

IND

+9V

U91
MCP6V51

5
V+

3
+

2
−

4

1

V−

−9V

R266
20k

OUT

R267
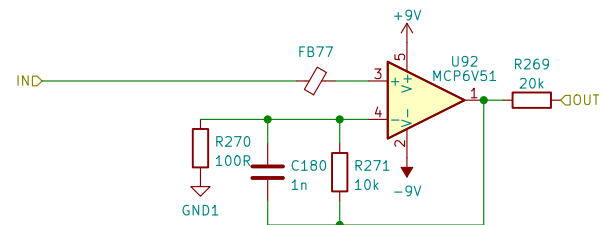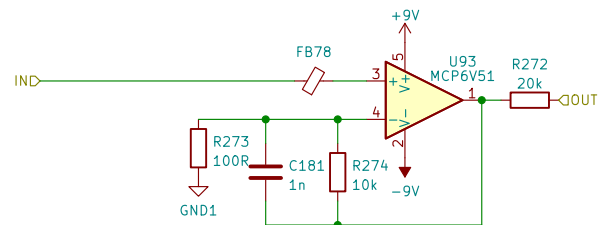100R

C179
1n

R268
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L7/LNAMP_1L3/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 84/113

IN

FB77

+9V

U92
MCP6V51

3 5 V+
+
1

2 V−
−
4

−9V

R269
20k

OUT

R270
100R

C180
1n

R271
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB78

U93
MCP6V51

R272
20k

+9V

IND

3
+
5
V+

1

2
−
V−
4

−9V

OUT

R273
100R

C181
1n

R274
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

FB80

+9V

U95
MCP6V51

R278
20k

IND

3 + V+ 5

1
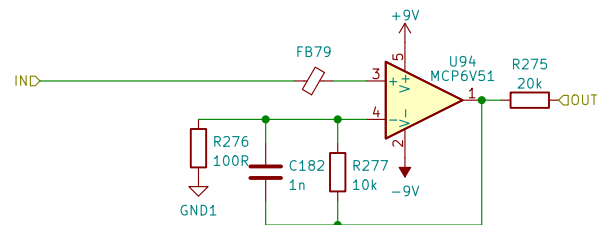
4 − V− 2

OUT

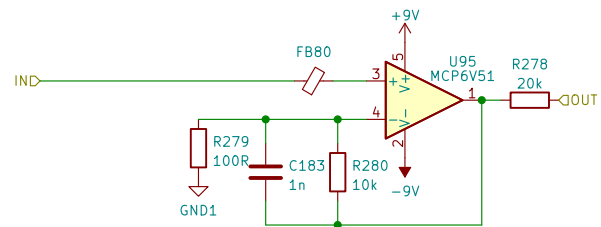R279
100R

C183
1n

R280
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L7/LNAMP_1L7/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

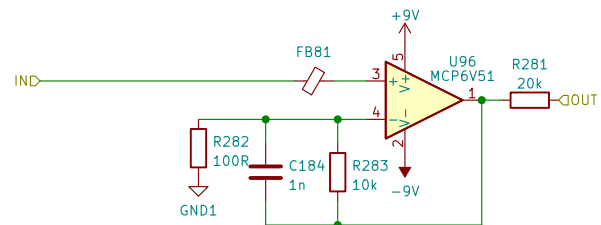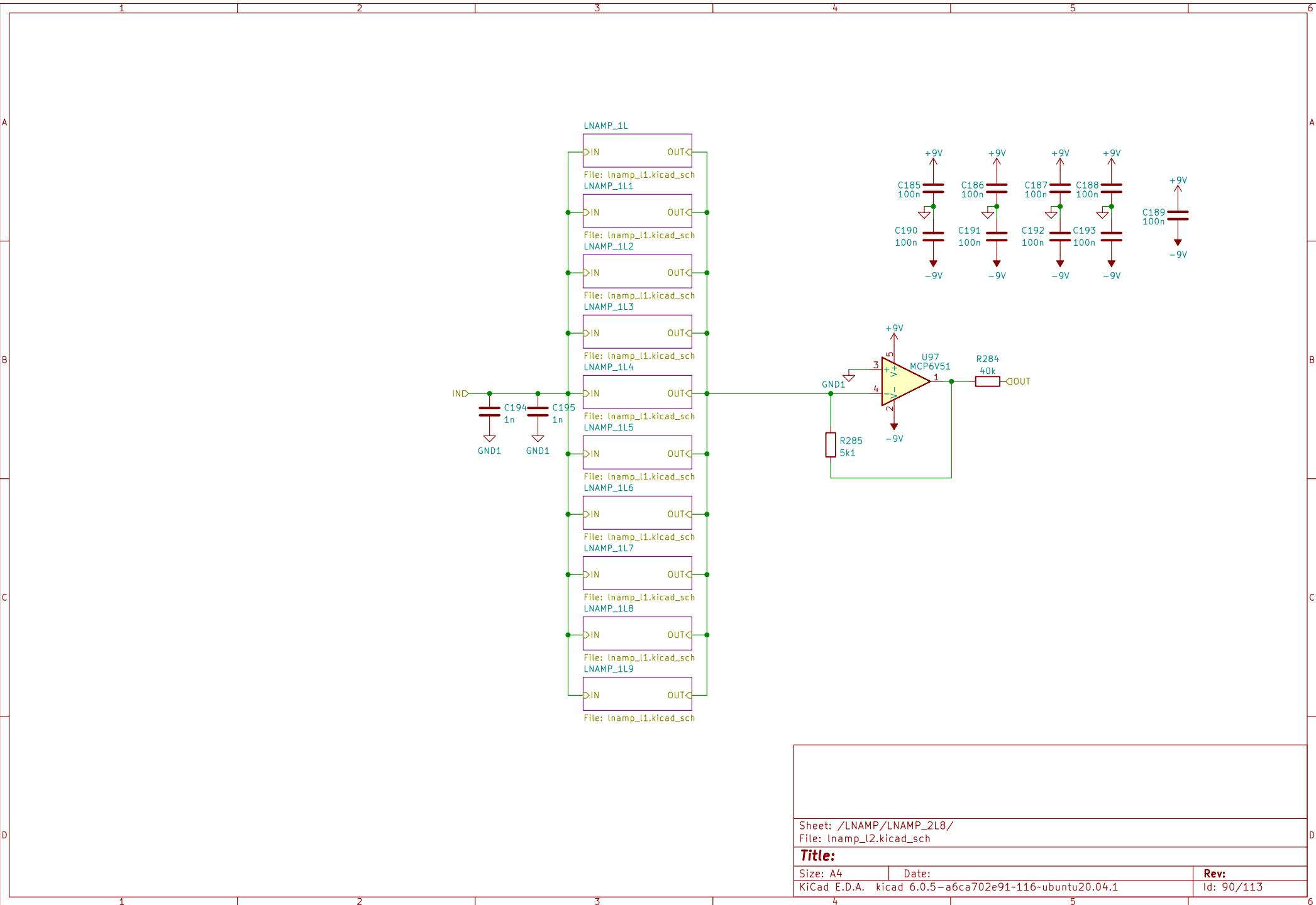KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 88/113

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

LNAMP_1L

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L1

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L2

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L3

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L4

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L5

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L6

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L7

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L8

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

LNAMP_1L9

IN ▷   OUT ◁
File: lnamp_l1.kicad_sch

IN ▷

C194
1n

C195
1n

GND1   GND1

+9V   +9V   +9V   +9V

C185   C186   C187   C188
100n   100n   100n   100n

C190   C191   C192   C193
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V

C189
100n

−9V

U97
MCP6V51

GND1

R284
40k

OUT ◁

R285
5k1

+9V

−9V

A

B

+9V

FB82

IND

U98
MCP6V51

R286
20k

3

5

V+

1

2

V−

4

−

+

OUT

R287
100R

C196
1n

R288
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

C

D

IN

FB83

+9V

U99
MCP6V51

R289
20k

OUT

3

5
V+
+

1

4
−
V−

2

−9V

R290
100R

C197
1n

R291
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L8/LNAMP_1L1/
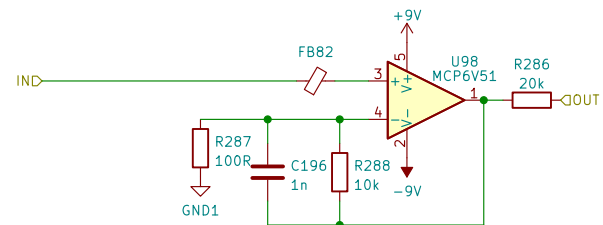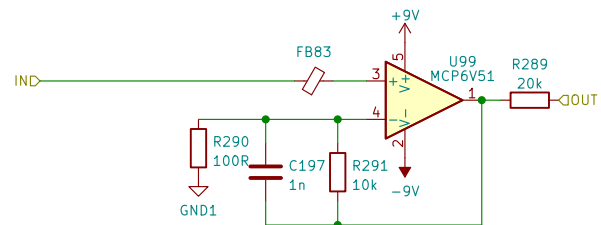File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A.   kicad 6.0.5-a6ca702e91-116-ubuntu20.04.1

Rev:

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FB84
+9V
U100
MCP6V51
R292
20k
IND
OUT
R293
100R
C198
1n
R294
10k
−9V
GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L8/LNAMP_1L4/
File: lnamp_l1.kicad_sch
Title:
Size: A4   Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1
Rev:
Id: 93/113

+9V

FB85

IND

3 + V+ 5
       U101
       MCP6V51

R295
20k

OUT

1

4 - V- 2

R296
100R

C199
1n

R297
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L8/LNAMP_1L2/
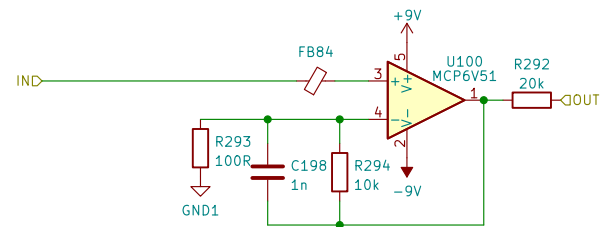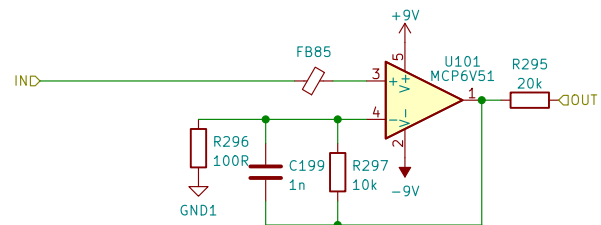File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 94/113

+9V

FB86

IND

R298
20k

OUT

U102
MCP6V51

R299
100R

C200
1n

R300
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB87

U103
MCP6V51

R301
20k

OUT

+9V

−9V

R302
100R

C201
1n

R303
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB88

U104
MCP6V51

R304
20k

OUT

+9V

−9V

R305
100R

C202
1n

R306
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

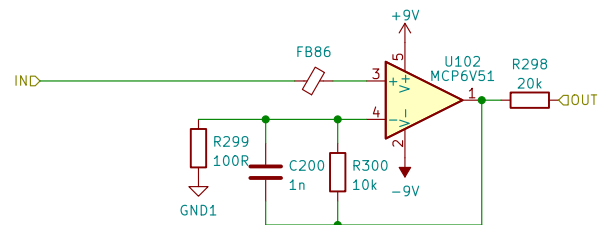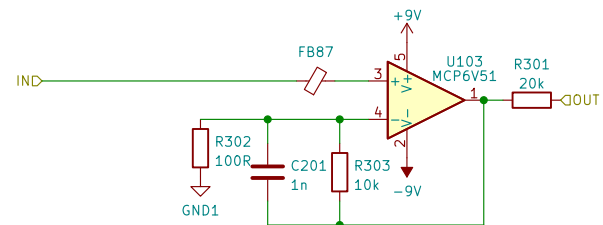Sheet: /LNAMP/LNAMP_2L8/LNAMP_1L9/
File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91−116~ubuntu20.04.1

Rev:
Id: 97/113

IN▷─────────────── FB89 ─────── 3 +

+9V

5 V+

U105
MCP6V51

1

R307
20k

─▷OUT

4 −

2 V−

−9V

R308
100R

C203
1n

R309
10k

GND1

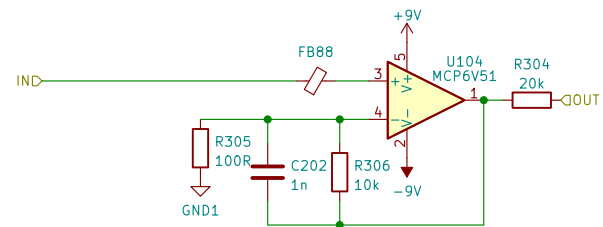This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB90

U106
MCP6V51

R310
20k

OUT

+9V

−9V

R311
100R

C204
1n

R312
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN

FB91

+9V

U107
MCP6V51

3 +
5 V+
1

R313
20k

OUT

4 −
2 V−

−9V

R314
100R

C205
1n

R315
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.
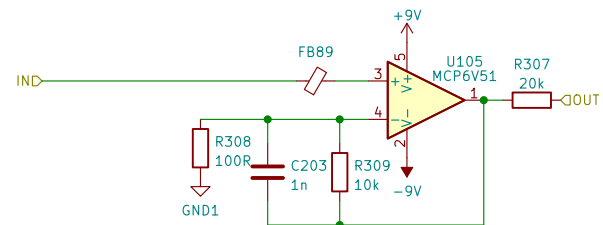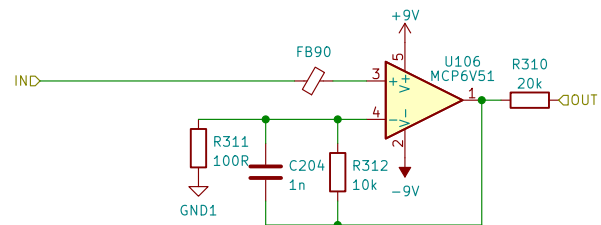
LNAMP_1L

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L1

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L2

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L3

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L4

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L5

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L6

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L7

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L8

IN   OUT
File: lnamp_l1.kicad_sch
LNAMP_1L9

IN   OUT
File: lnamp_l1.kicad_sch

IN

C215   C216
1n   1n

GND1   GND1

+9V   +9V   +9V   +9V

C206   C207   C208   C209
100n   100n   100n   100n

C211   C212   C213   C214
100n   100n   100n   100n

−9V   −9V   −9V   −9V

+9V

C210
100n

−9V

+9V
5
GND1   3 + U108
           V+ MCP6V51
        4 − 1

2 V−

−9V

R316
40k   OUT

R317
5k1

FB92

IN▷

U109
MCP6V51

+9V

3 +
V+ 5
1
2 −
V− 4
−9V

R318
20k

▷OUT

R319
100R

C217
1n

R320
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷——————————FB93———————————

+9V

FB93
R321
20k
U110
MCP6V51
3 +
5 V+
1
▷OUT
4 -
2 V-
-9V

R322
100R
C218
1n
R323
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

+9V

FB94

IND

U111
MCP6V51

R324
20k

OUT

3

5

V+

+

−

1

4

2

V−

R325
100R

C219
1n

R326
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L9/LNAMP_1L4/
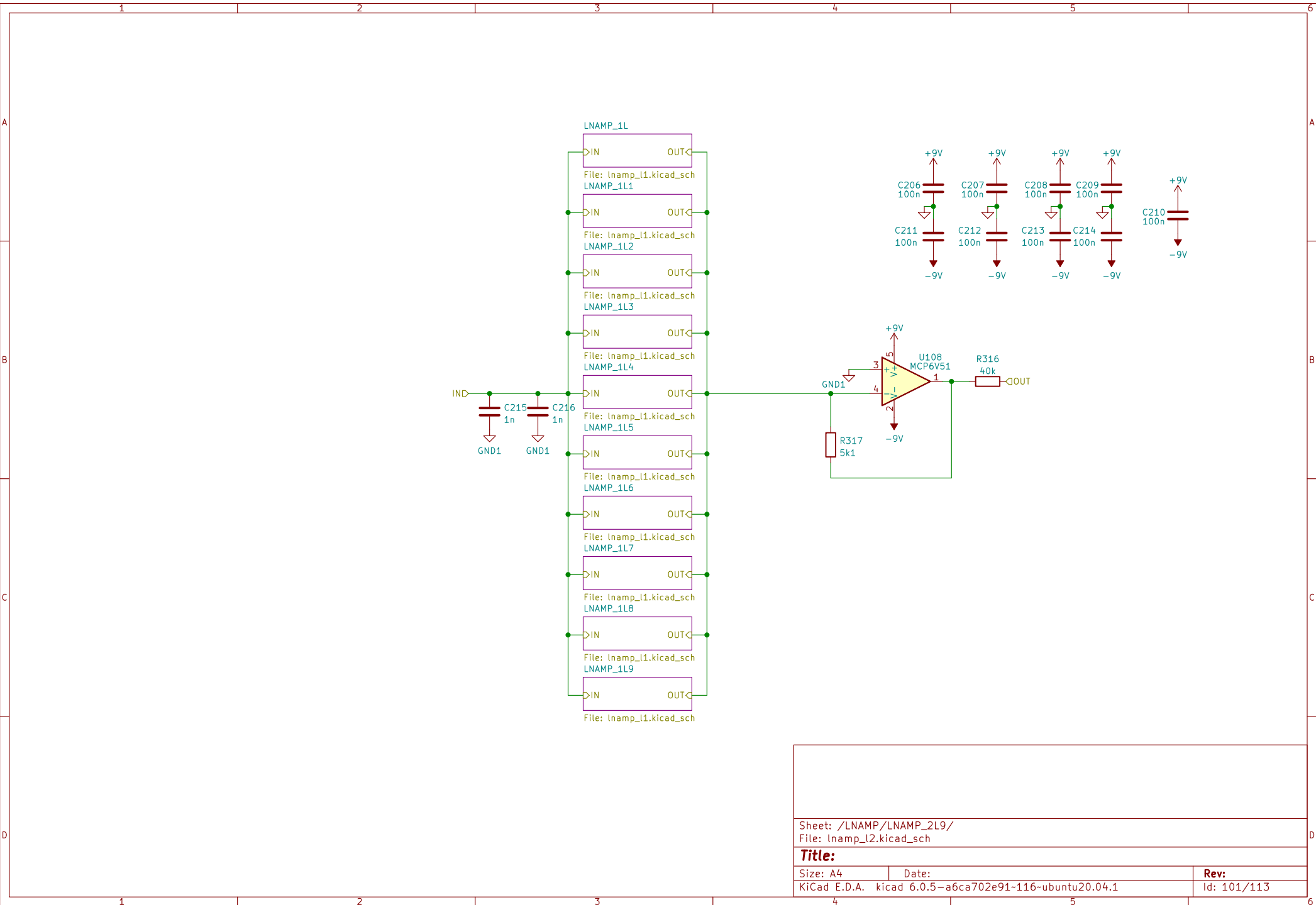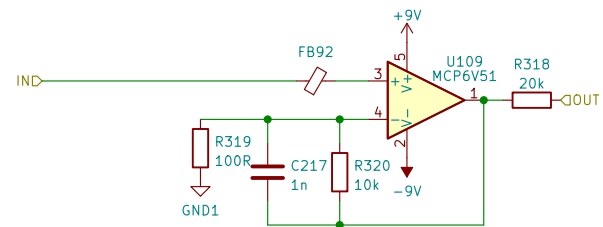File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 104/113

FB95

+9V

U112
MCP6V51

R327
20k

IN▷————————————/ / /————————3 + 5 V+ 1 ——[ ]——▷OUT

4 - 2 V-

R328
100R

C220
1n

R329
10k

GND1

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷

FB96

+9V

U113
MCP6V51

R330
20k

3 +
5 V+
4 −
2 V−
1

R331
100R

C221
1n

R332
10k

−9V

GND1

▷OUT
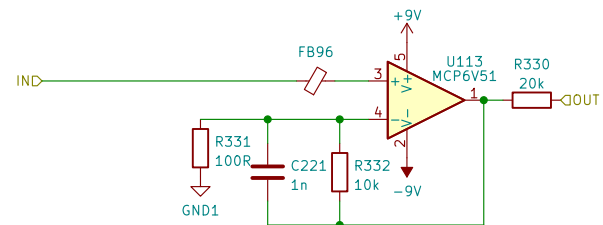
This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L9/LNAMP_1L3/
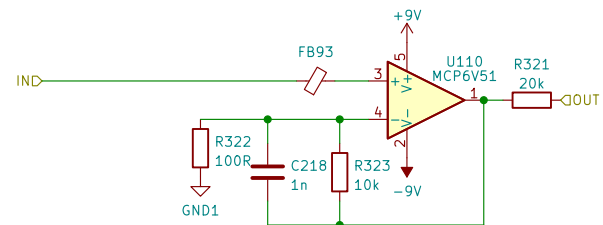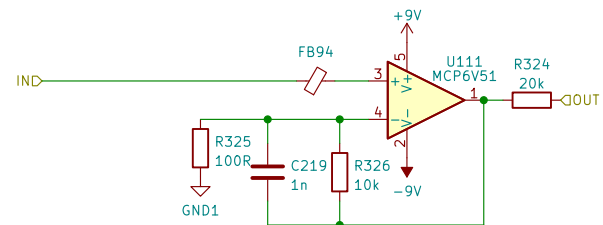File: lnamp_l1.kicad_sch
Title:
Size: A4   Date: Rev:
KiCad E.D.A.   kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1   Id: 106/113
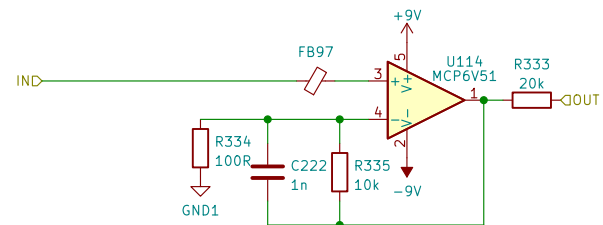
IN

FB97

+9V

U114
MCP6V51

R333
20k

OUT

3

5

1

4

2

−9V

R334
100R

C222
1n

R335
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

Sheet: /LNAMP/LNAMP_2L9/LNAMP_1L8/
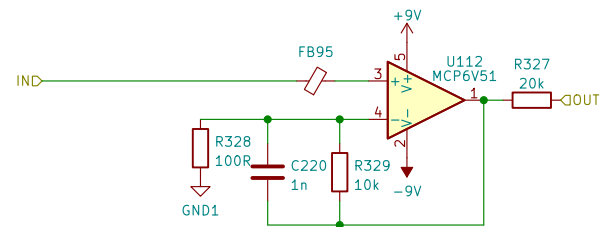File: lnamp_l1.kicad_sch

Title:

Size: A4   Date:
KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:
Id: 107/113

IND

FB98

+9V

U115
MCP6V51

R336
20k

OUT

3

5

1

4

2

R337
100R

C223
1n

R338
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷────────────────FB99────3 ⎡+⎤ 1────R339────▷OUT
                              │ U116   20k
                              │ MCP6V51
                         +9V │5 V+
                              │
                         4 ⎣−⎦
                         2 V−
                         −9V

R340
100R

C224
1n

R341
10k

GND1

+9V

−9V

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

IN▷──────────────── FB100 ──── 3 ▷+ V+ 5
+9V

U117
MCP6V51

R342
20k
──▷OUT

1

4 ── V− 2
−

−9V

R343
100R

C225
1n

R344
10k

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

+9V

FB101

IND

U118
MCP6V51

R345
20k

OUT

3
+
V+
5

1

4
−
V−
2

R346
100R

C226
1n

R347
10k

−9V

GND1

This amplifier block is indeed 100 times repeated on the PCB, so it's logical to have it in the schematics, too. Sorry for that.

LNA – 110 opamps

9V/1G = 9nA trim range

R350 1G

ITRIM

R356 5R6

IND

L_IN

C229 22n GND1
C230 1n GND1
C231 1n GND1

L1 in : 10mV FS (10k/100R)
L1 GND current : 100uA per amp, 10mA total
L1 out : 50,5uA FS
L2 total in : 505uA FS
L2 out: −64.4uA FS
LNA IN: −644uA FS
LNA OUT: 10V FS

R360 0R
GND1 GNDS

LNAMP_2L
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L1
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L2
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L3
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L4
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L5
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L6
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L7
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L8
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNAMP_2L9
L_IN ▷IN OUT◁ L_OUT
File: lnamp_l2.kicad_sch

LNA offset & input current compensation DAC + amplifier

+3V3

U120 LTC1664IGN

9 DIN   VCC 16
10 DOUT   OUTA 2
8 SCK   OUTB 3
7 CS/LD OUTC 4
       OUTD 5
11 CLR
   REF 6 VR28P
+3V3
GND 1

R351 6M2
R352 6k2
R353 6M2
R355 6k2

R348 12k
R349 12k
VR28N

U119A OPA2202
3
2 GNDS
1 VTRIM TP5
R354 40k

both outputs +−9V full scale

U119B OPA2202
5
6 GNDS
7 ITRIM TP6
R357 40k

+15V
C227 100n V+ 8
GND
C228 100n V− 4 −15V
U119C OPA2202

Final LNA summing amp

9V/8,2M ~ 1uA trim range
approximately 0,2% of range

C232 100n +15V

VTRIM R359 8M2
GND
3 ++
2 −−
V+ 7
V− 4
6 OUT
L_OUT GNDS
U122 OPA202
R365 15k53
GND C233 100n −15V

Ground current compensation

U121A LM324A
GND 3 +
R361 40k
2 − 1
R363 40k R364 0R

U121B LM324A
5 +
6 − 7
R358 3k GND1

U121C LM324A
10 +
9 − 8
R362 3k GND1

U121D LM324A
12 +
13 − 14
R366 3k GND1

pull 10mA from LNA ground for 10V input (10mV at LNA input)

+15V
V+ 4
V− 11
U121E LM324A
−15V

Switchable gain amplifier

IND

U123
AD8628

C234
100n

+15V

C235
33n

U124
TL061

OUT

GND

C237
100n

−15V

C236
1n

U125D
DG442

15   14
16

G1

U125A
DG442

2   3
1

G10

U125B
DG442

6   7
8

G100

R368
200k

R370
19k8

R374
2k

GNDS

Floating PSU for input opamp

+15V

R367
6k2

Q3
BC847

C238
100n

GND

U126
TL431DBZ

R369
12k

R373
30k

U127
TL081H

R371
24k

R372
240R

C239
2u2

U128
TL431DBZ

R376
12k

C240
100n

GND

R375
24k

BSD

GND

C242
DNP

GND

C241
100n

R377
30k

Q4
BC857

R379
6k2

R378
240R

−15V

C243
100n

GND

+15V   +5V

C244
100n

C245
100n

+15V

GND

C246
100n

C247
100n

V+   VL
13   12

U125E
DG442

GND   V−
5   4

−15V

−15V

U125C
DG442

10   11
9

Sheet: /nvm_amp_main/
File: nvm_amp_main.kicad_sch

Title:

Size: A4   Date:

KiCad E.D.A. kicad 6.0.5−a6ca702e91~116~ubuntu20.04.1

Rev:

Id: 114/113