VCA 1

0V to 10V
Linear CV Input 1
*2,4,5

−1V to 10V
Exponential CV Input 1
*2,3

10Vpp
Signal Input 1

R1 100K — Icl
R2 33K — Vce
R4 1K — GND
R3 120K
+12V
1*
C1 1nF — *6
R6 100K — Iin
U1A AS3330
Expin1 6, VG1 2, LinIn1 7
SigIn1 4
Dtrim1 3, Ccomp1 9
Iout1 1 Iout
C3 5nF — GND
GND

C2 100pF
R5 51K
U2A TL072
2 −, 3 +, 1
Signal Output 1
GND

VCA 2

0V to 10V
Linear CV Input 2
*2,4,5

−1V to 10V
Exponential CV Input 2
*2,3

10Vpp
Signal Input 2

R7 100K — Icl
R8 33K — Vce
R10 1K — GND
R9 120K
+12V
1*
C4 1nF — *6
R12 100K — Iin
U1B AS3330
Expin2 14, VG2 15, LinIn2 12
SigIn2 13
Dtrim2 17, Ccomp2 11
Iout2 16 Iout
C6 5nF — GND
GND

C5 100pF
R11 51K
U2B TL072
6 −, 5 +, 7
Signal Output 2
GND
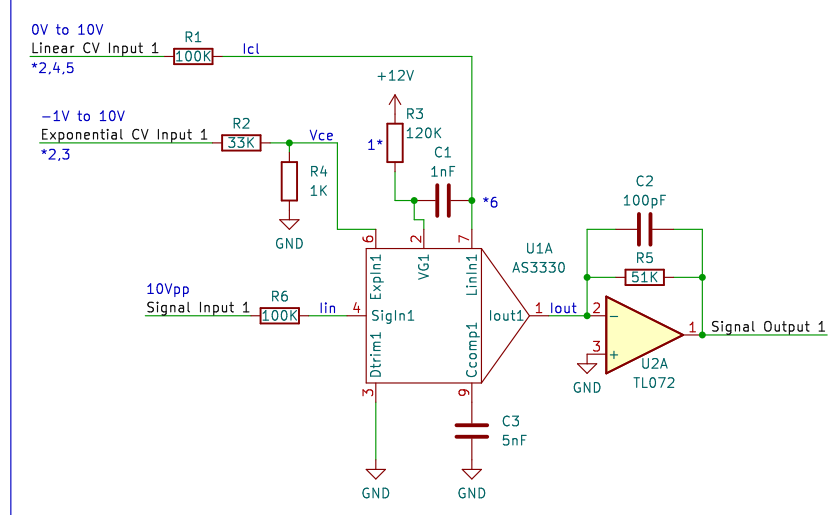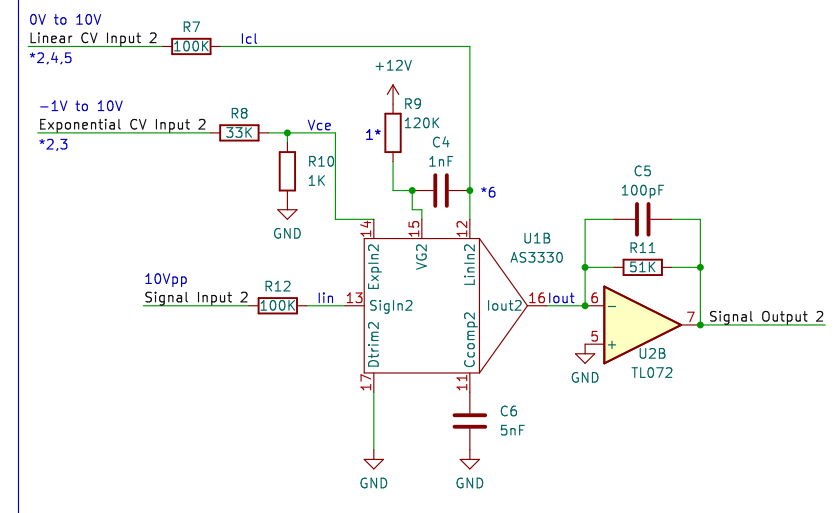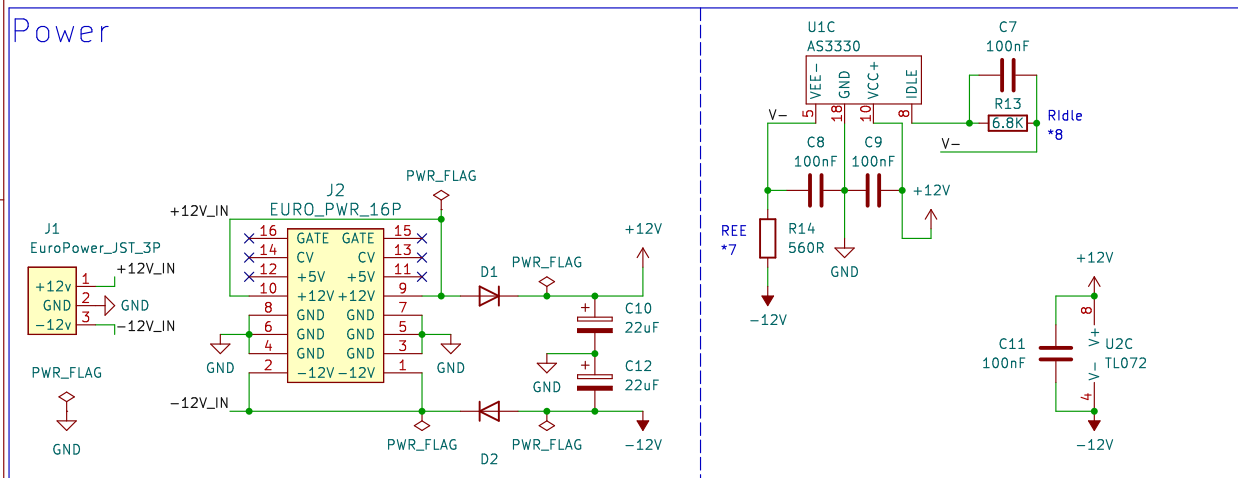
10V at the linear control input through the 100K resistor will be at unity gain.
0V would be at −80dB?
−10V would be at max attenuation which is −110dB

Power

J1
EuroPower_JST_3P
1 +12v → +12V_IN
2 GND → GND
3 −12v → −12V_IN

PWR_FLAG
GND

J2
EURO_PWR_16P
16 GATE GATE 15
14 CV   CV 13
12 +5V   +5V 11
10 +12V +12V 9
8 GND   GND 7
6 GND   GND 5
4 GND   GND 3
2 −12V −12V 1

+12V_IN
−12V_IN
PWR_FLAG

D1 — +12V
C10 22uF
C12 22uF
GND
D2
PWR_FLAG
−12V

U1C AS3330
VEE− 5, GND 18, VCC+ 10, IDLE 8
V−
V−
REE *7
R14 560R
−12V
GND

C8 100nF
C9 100nF
+12V

C7 100nF
R13 6.8K
RIdle *8

C11 100nF
+12V
U2C TL072
8 V+, 4 V−
−12V

* NOTES *
1) RB should be 120K for a 100uA reference current
2) CV inputs must be normalled to VCC (Digisound)
3) Exp input should be inverted (Digisound)
4) Lin input is a summing node
5) a −10V input would fully attenuate the signal
6) 1nF or larger
7) @15V, 680R, 22mA
7) @12V, 560R, 21.4mA
8) IDLE, @6.8K, class AB, 7uA (Digisound)

Datasheet Circuit
This version is a prototype
DIYSynthMNL
Sheet: /
File: Eurorack−AS3330−Dual−Lin−Exp−VCA.kicad_sch
Title: Eurorack AS3330 Dual Linear/Exponential VCA
Size: A4   Date: 2024−01−28   Rev: 0.1.1
KiCad E.D.A. kicad 7.0.9   Id: 1/1