

SEGMENTS

anonymous

March 8, 2021

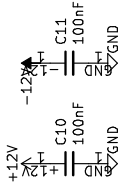
1 SEGMENTS

1. PROGRESS/NOTES

- Second set PCBs ordered - 0403

2. SCHEMATICS

all pots reversed on pcb

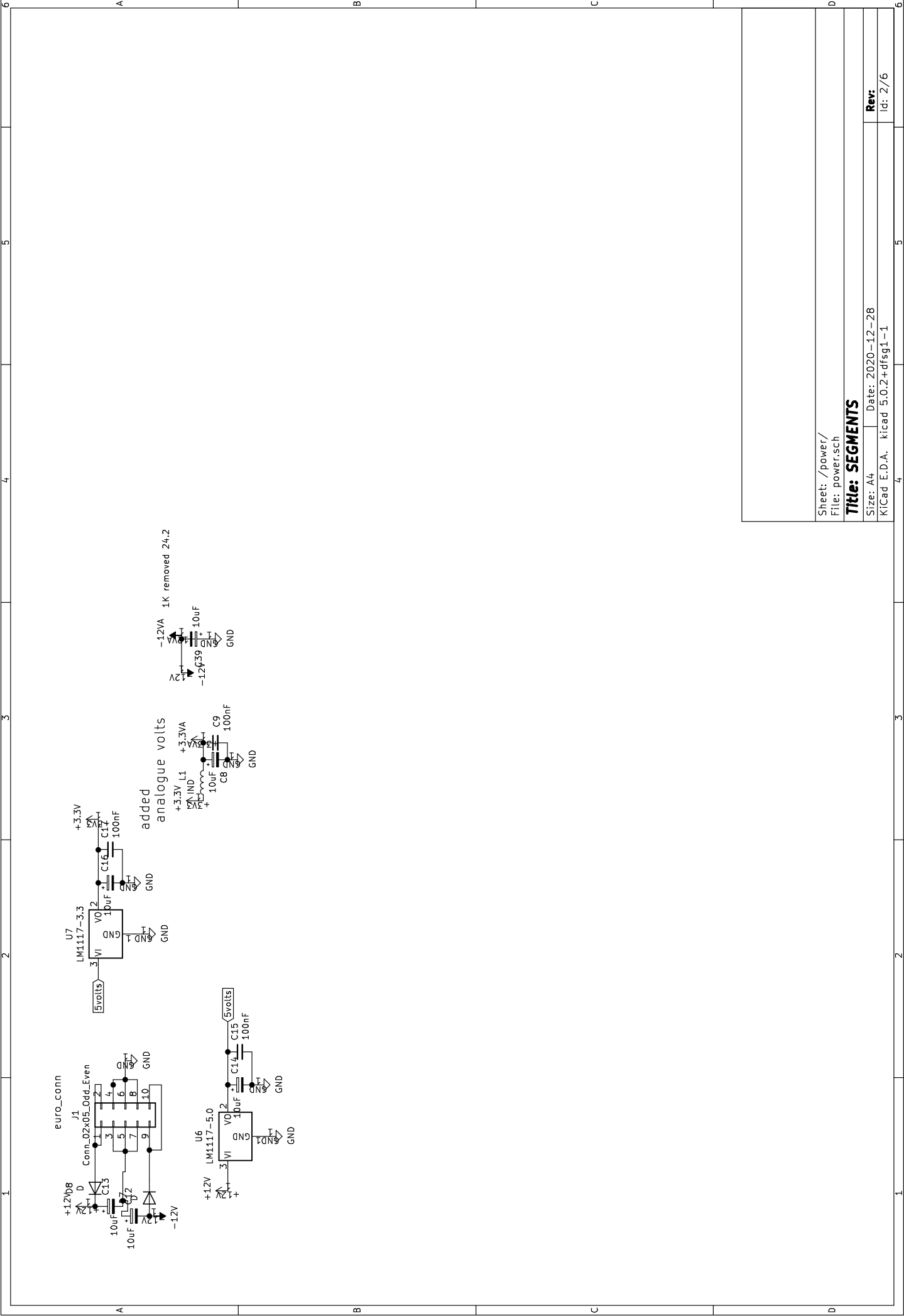


buffer out – revised for +5v (tides) – fixed 24/2

no cv in {too many} just pot!

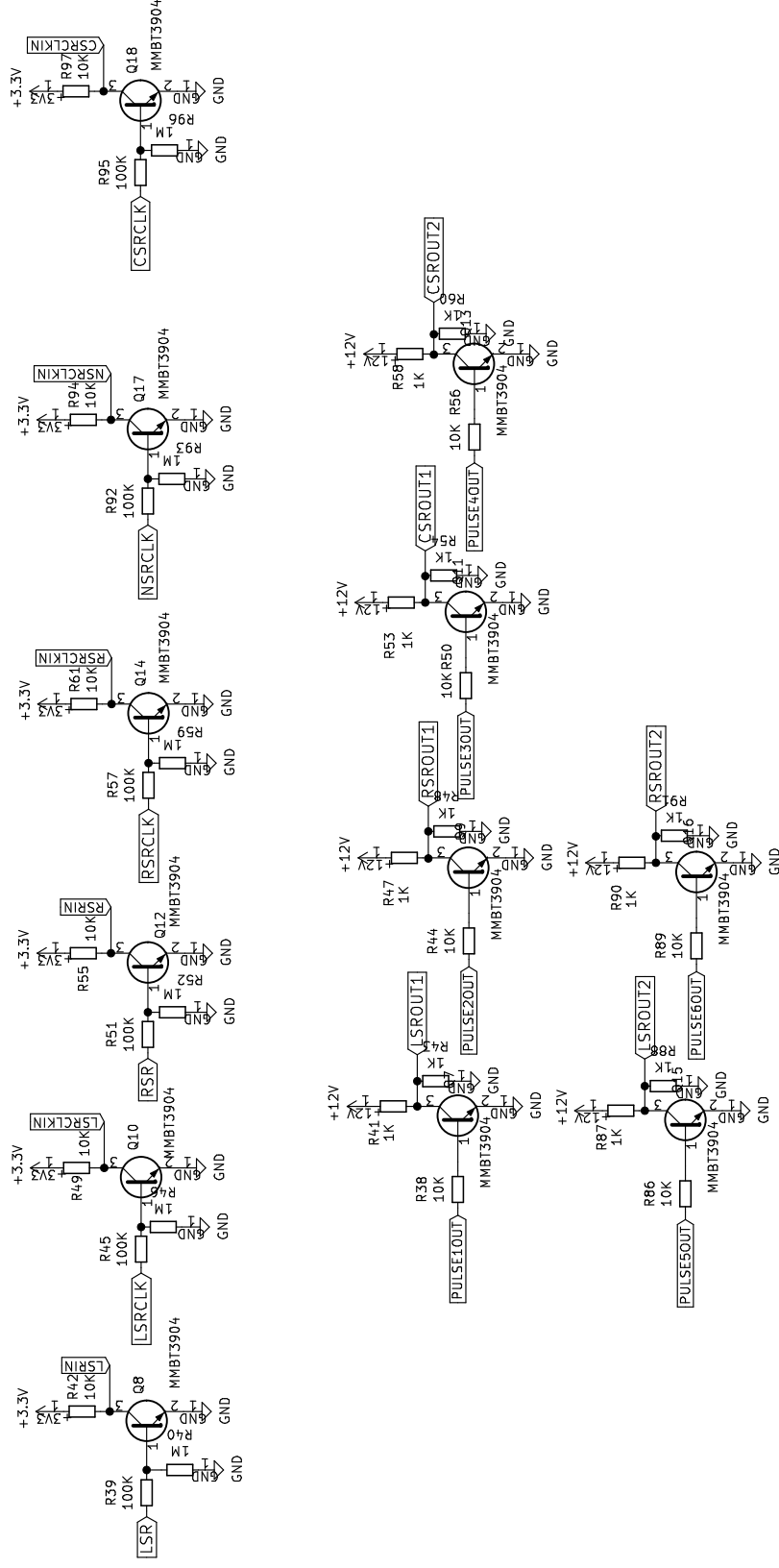
Revised for new buffer DAC out, ADCref jack and analog power 28/12/2020
Changed normings so is only one PWM norm 4/1/2020

Sheet: /	
File: segments.sch	
Title: SEGMENTS	
Size: A4	Date: 2020-12-28
KiCad E.D.A.	kidcad 5.0.2+dfsg1-1
Rev: 002	
Id: 1/6	



pulse ins/outs for 4x SR:

- 6 ins: noiseSR:1in,crossSR:1in left/right 2 each
- 4 outs: from each SR



Sheet: /pulses_etc/
File: pulsesetc.sch

Title: SEGMENTS

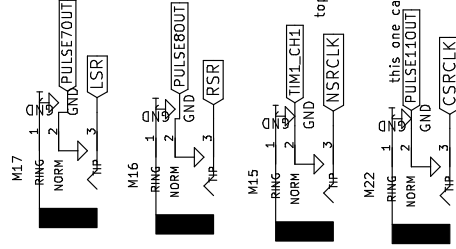
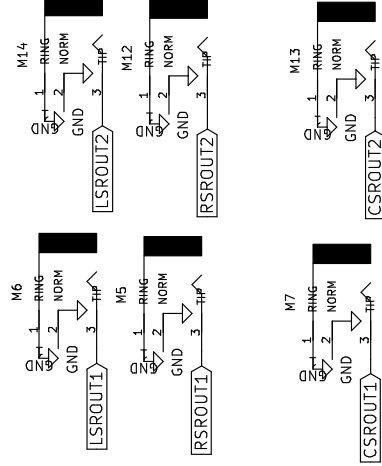
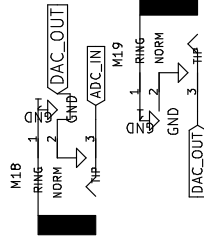
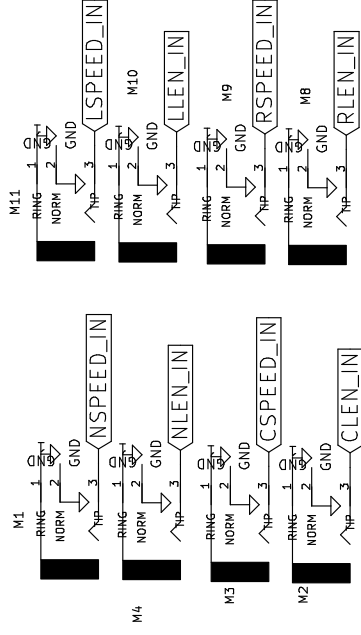
Size: A4 Date: 2020-12-28

KiCad E.D.A. kicad 5.0.2+dfsg1-1

Rev:

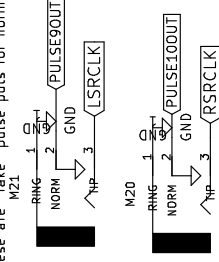
Id: 3/6

CV in jacks x8
ADC in, DAC out
Pulse in x6
Pulse out x6



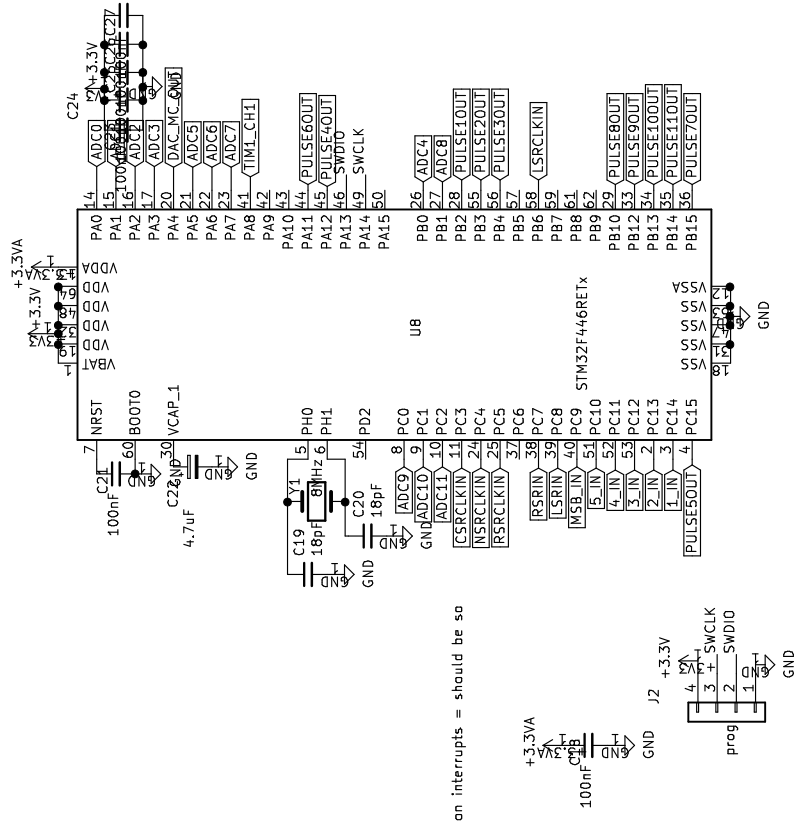
6 pulse outs now 4/1/2021

these are "fake" pulse puts for norming. check we have no transistor level shift!

Sheet: /10/
File: inout.sch

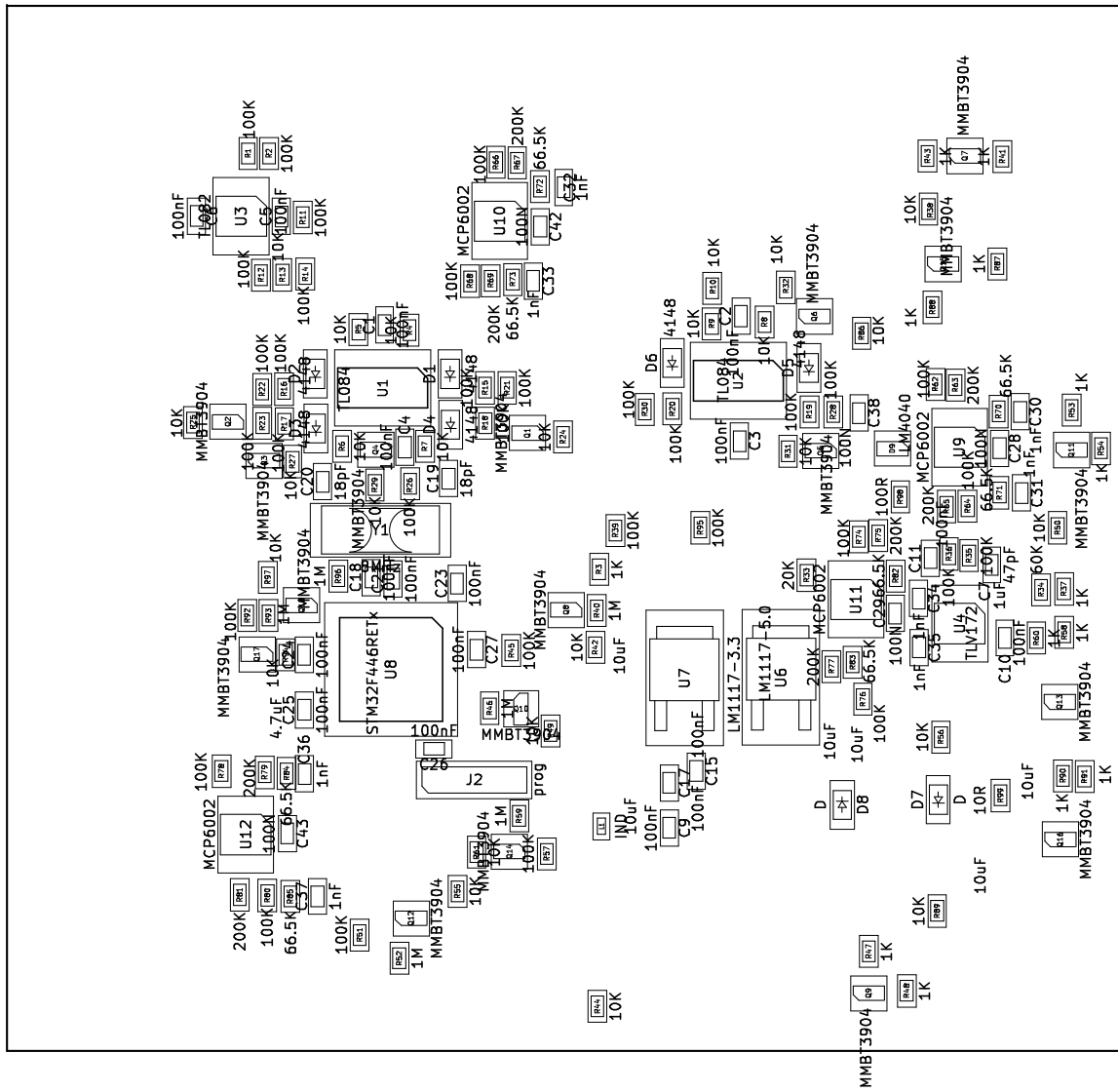
Title: SEGMENTS

Size: A4	Date: 2020-12-28	Rev:
KiCad E.D.A.	kiCad 5.0.2+dfsg1-1	Id: 4/6



3. PANEL layout

4. PCB



5. BOM and orderings

SEGMENTS BOM

REV 002



DATE	COMPANY	COMMENT 1	COMMENT 2
2020-12-28			
COMMENT 3	COMMENT 4	TOTAL PARTS	
		217 (Unique 41)	

Ref	Qty	Value	Footprint	Datasheet	Manufacturer
[C] - Capacitors					
C1 C2 C3 C4 C5 C6 C9 C10 C11 C15 C17 C18 C21 C23 C24 C25 C26 C27	18	100nF	Capacitors_SMD:C_0805	~	
C7	1	47pF	Capacitors_SMD:C_0805	~	
C8 C12 C13 C14 C16 C39	6	10uF	SMD_Packages:SMD-1206_Pol	~	
C19 C20	2	18pF	Capacitors_SMD:C_0805	~	
C22	1	4.7uF	SMD_Packages:SMD-1206_Pol	~	
C28 C29 C38 C42 C43	5	100N	Capacitors_SMD:C_0805		
C30 C31 C32 C33 C34 C35 C36 C37	8	1nF	Capacitors_SMD:C_0805		
C40	1	1uF	SMD_Packages:SMD-1206_Pol	~	
[D] - Diodes					
D1 D2 D3 D4 D5 D6	6	4148	Diodes_SMD:D_SOD-123	~	
D7 D8	2	D	Diodes_SMD:D_SOD-123	~	
D9	1	LM4040	TO_SOT_Packages_SMD:SOT-23	https://en.wikipedia.org/wiki/Zener_diode	
[J] -					
J1	1	Conn_02x05_Odd_Even	Pin_Headers:Pin_Header_Straight_2x05_Pitch2.54mm		
J2	1	prog	Pin_Headers:Pin_Header_Straight_1x04_Pitch2.54mm		
[L] - Inductors					
L1	1	IND	Inductors_SMD:L_0603	~	
[M] -					
M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12 M13 M14 M15 M16 M17 M18 M19 M20 M21 M22	22	AUDIO-JACKERTHENVAR	new_kicad:Jack_3.5mm_QingPu_WQP-PJ398SM_Vertical_CircularHoles		
[Q] - Transistors					
Q1 Q2 Q3 Q4 Q5 Q6	6	MMBT3904	TO_SOT_Packages_SMD:SOT-23	https://www.fairchildsemi.com/datasheets/2N/2N3904.pdf	
Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18	12	MMBT3904	TO_SOT_Packages_SMD:SOT-23		
[R] - Resistors					
R1 R2 R11 R12 R14 R15 R16 R17 R18 R19 R20 R21	18	100K	Resistors_SMD:R_0805	~	

R22 R23 R26 R28 R30 R36					
R3 R37	2	1K	Resistors_SMD:R_0805	~	
R4 R5 R6 R7 R8 R9 R10 R13 R24 R25 R27 R29 R31 R32	14	10K	Resistors_SMD:R_0805	~	
R33	1	20K	Resistors_SMD:R_0805	~	
R34	1	68K	Resistors_SMD:R_0805	~	
R35	1	130K	Resistors_SMD:R_0805	~	
R38 R42 R44 R49 R50 R55 R56 R61 R86 R89 R94 R97	12	10K	Resistors_SMD:R_0805		
R39 R45 R51 R57 R62 R64 R66 R68 R74 R76 R78 R80 R92 R95	14	100K	Resistors_SMD:R_0805		
R40 R46 R52 R59 R93 R96	6	1M	Resistors_SMD:R_0805		
R41 R43 R47 R48 R53 R54 R58 R87 R88 R90 R91	11	1K	Resistors_SMD:R_0805		
R60	1	1K	Resistors_SMD:R_0805	TEST	
R63 R65 R67 R69 R75 R77 R79 R81	8	200K	Resistors_SMD:R_0805		
R70 R71 R72 R73 R82 R83 R84 R85	8	66.5K	Resistors_SMD:R_0805		
R98	1	100R	Resistors_SMD:R_0805		
[RV] -					
RV1	1	100K	new_kicad:Potentiometer_Alps- RK09		
[U] - Semiconductors					
U1 U2	2	TL084	Housings_SOIC:SOIC http://www.ti.com/lit/ds/symlink/tl081.pdf 14_3.9x8.7mm_Pitch1.27mm		
U3	1	TL082	Housings_SOIC:SOIC http://www.ti.com/lit/ds/symlink/tl081.pdf 8_3.9x4.9mm_Pitch1.27mm		
U4	1	TL071/TLV172	Housings_SOIC:SOIC http://www.ti.com/lit/ds/symlink/tl071.pdf 8_3.9x4.9mm_Pitch1.27mm		
U6	1	LM1117-5.0	TO_SOT_Packages_SMD:TO http://www.ti.com/lit/ds/symlink/lm1117.pdf 252-2_Rectifier		
U7	1	LM1117-3.3	TO_SOT_Packages_SMD:TO http://www.ti.com/lit/ds/symlink/lm1117.pdf 252-2_Rectifier		
U8	1	STM32F446RETx	Housings_QFP:LQFP- http://www.st.com/st-64_10x10mm_Pitch0.5mm_web- ui/static/active/en/resource/technical/document/datasheet/DM00141306.pdf		
U9 U10 U11 U12	4	MCP6002	Housings_SOIC:SOIC http://ww1.microchip.com/downloads/en/DeviceDoc/21733j.pdf 8_3.9x4.9mm_Pitch1.27mm		
[Y] -					
Y1	1	8MHz	Crystals:Crystal_SMD_HC49- SD	~	
[nsrspeed] -					
nsrspeed1 nsrspeed1 nsrspeed1 nsrspeed2 nsrspeed2 nsrspeed2 nsrspeed3 nsrspeed3 nsrspeed3 nsrspeed4 nsrspeed4 nsrspeed4	12	10K	new_kicad:Potentiometer_Alps- RK09		