

Fíčury

- A Aux out, kde si zvolím jednu z vln a můžu měnit hlasitost
- Přidat bokem MF30 pro rozšiřující desku (audio out, další CV IN, cokoliv mě napadne)
- EXP a fine tune spojit, na TN pin připojit malý napětí pro fine tune
- A Normálně 50% pwmky a tahat pomocí vlny +5V, ale spíš to mít jako override

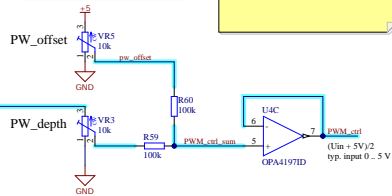
Potřáky:
Tune,
Fine,
Přepínání oktáv,

LinFM depth
PWM width depth
PWM PW width manual

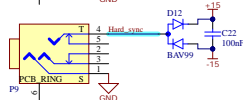
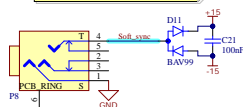
DOEPFER A111-3:
 --- INS ---
 IV/oct
 Exp Mod
 Lin Mod
 Pulse Mod
 Sync (selectable via jumper)
 - soft
 - hard
 --- OUTS ---
 Triangle
 Saw
 Pulse

Doepferácký levely
SAW = 0..10
REC = 0..10
TRI = -5 .. 5

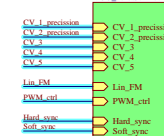
Moje levely
SAW = -5 .. 5
REC = -5 .. 5
TRI = -5 .. 5
SIN = -5 .. 5



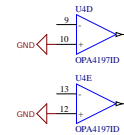
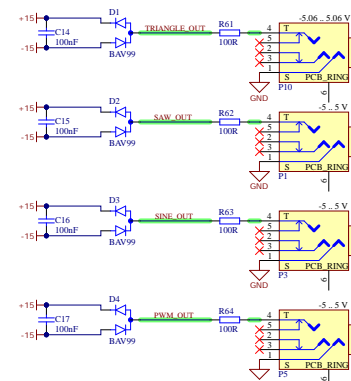
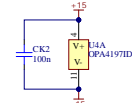
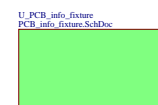
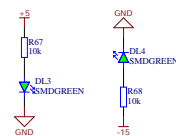
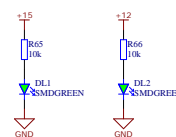
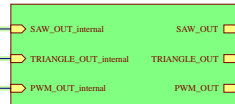
Nutno dodělat chování při vypojení (při vypojení pouze ovládat PW, jinak hloubku modulace. Ale možná by nebylo blbý mít hloubku a offset... to je možná lepší)



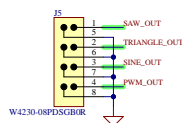
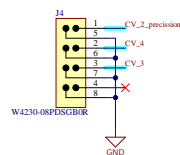
U_VCO_core
VCO_core.SchDoc



U_output_gains
output_gains.SchDo

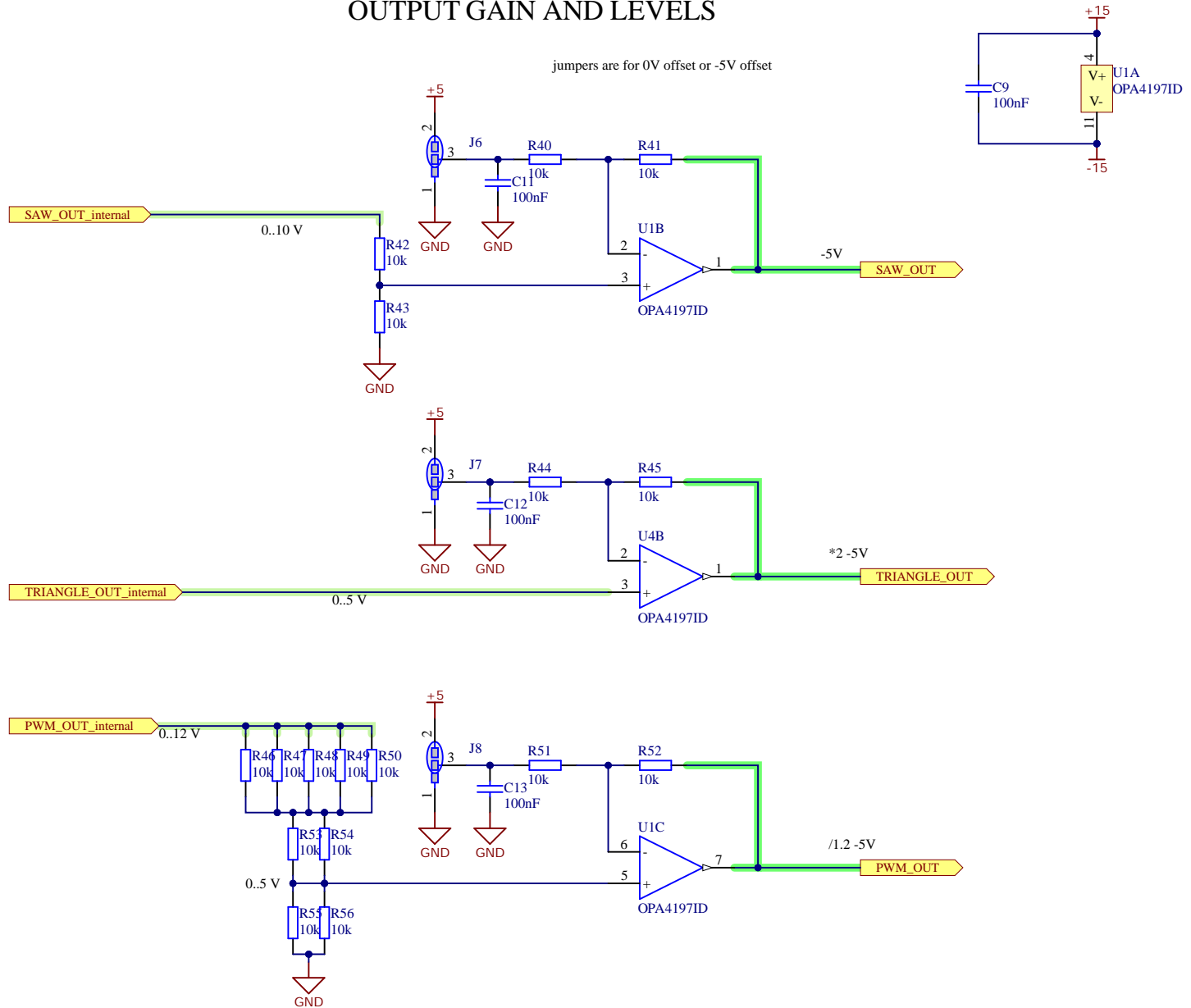


To EXT board



OUTPUT GAIN AND LEVELS

jumpers are for 0V offset or -5V offset



1

2

3

4

A

A

B

B

C

C

D

D

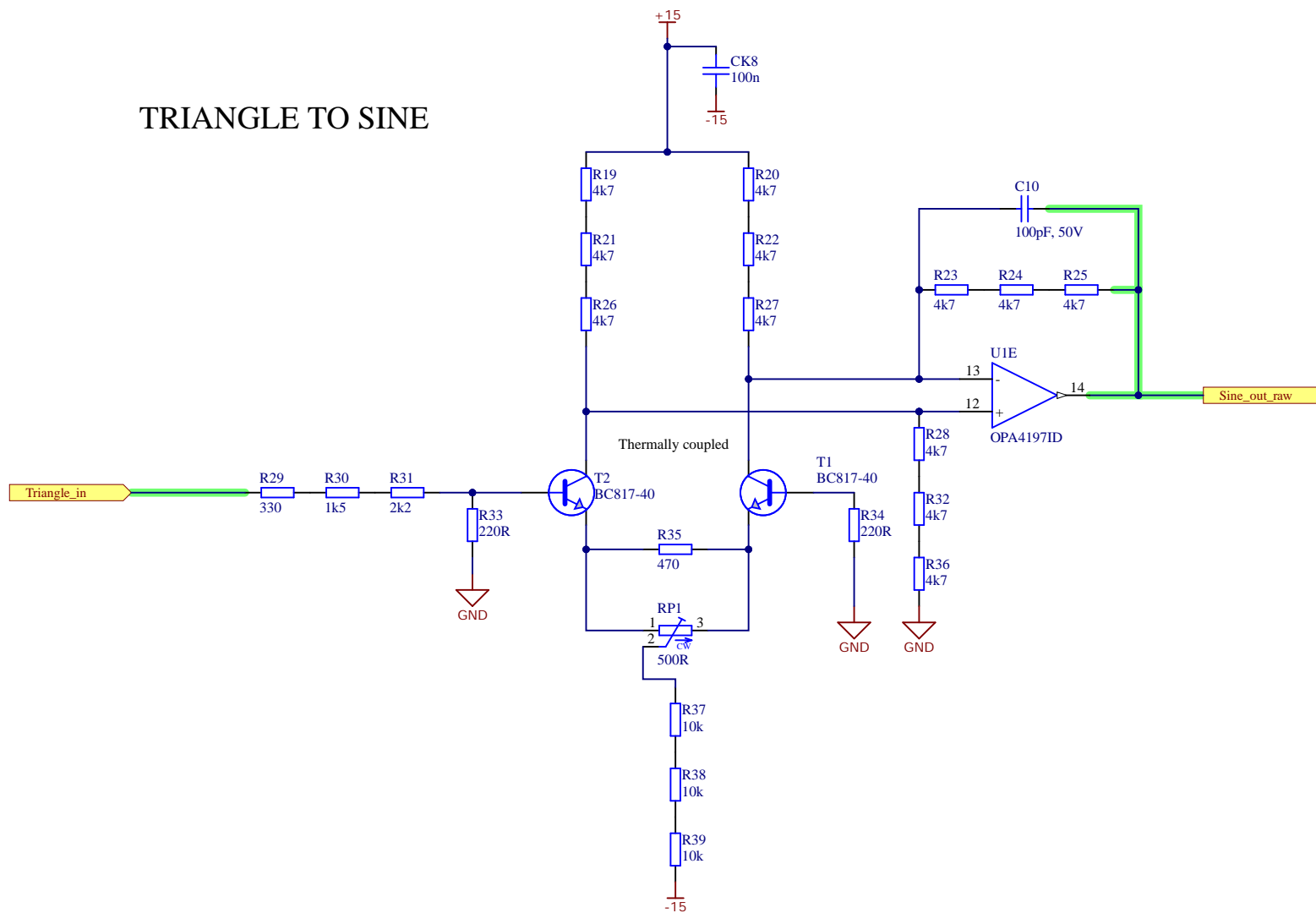
1

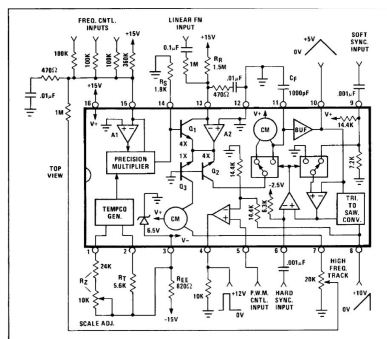
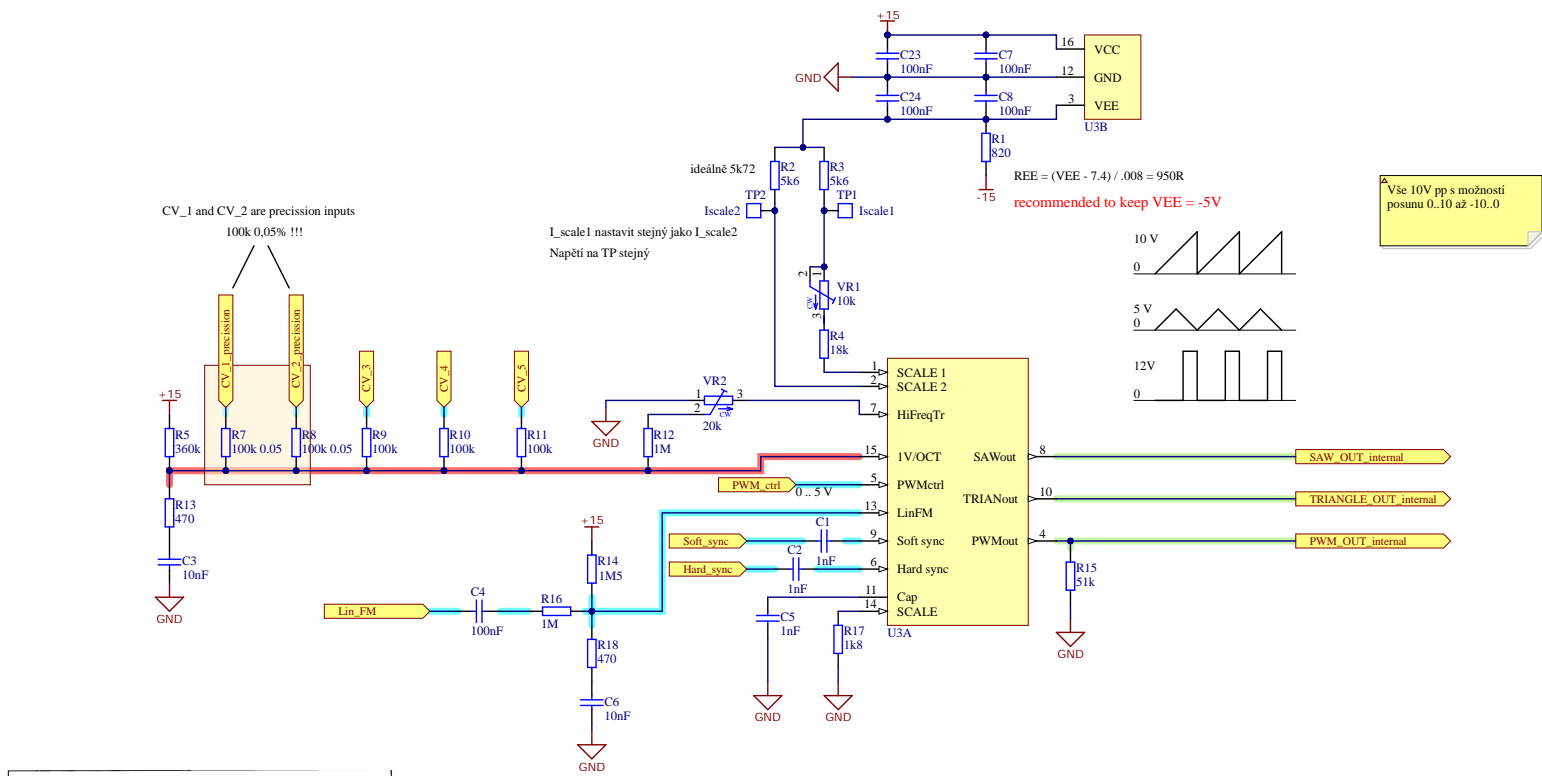
2

3

4

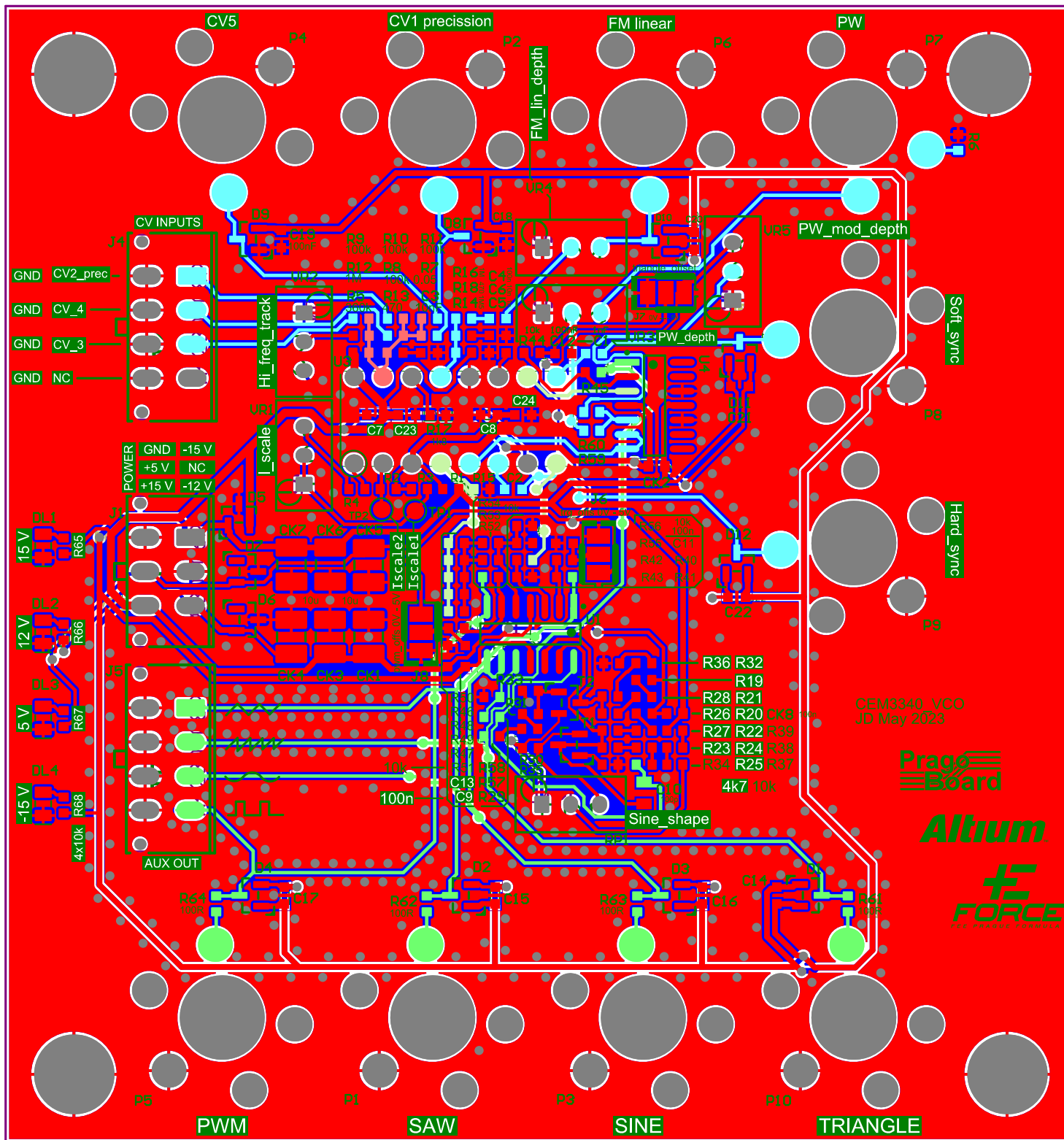
TRIANGLE TO SINE





Hard sync: Změna směru průběhu při průchodu master signálu nulou
fm > fs --> lock na fm --> fs = fm
fm < fs --> zámky navíc, přidání harmonických, free se nemění

Soft sync
změny průběhu slave jsou podle změn masteru fs = 2*fm



CEM3340_VCO
JD May 2023

Prague
Board

Altium

FORCE
FCS PRAGUE FORMULA

Comment	Description	Designator	Footprint	LibRef	Quantity
1nF	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, NP0, 1nF, 50V	C1, C2, C5	WCAP- CSGP_0603_L1.6W0.8 H0.8_Reflow	885012006063	3
10nF	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 10nF, 50V	C3, C6	WCAP- CSGP_0603_L1.6W0.8 H0.8_Reflow	885012206089	2
100nF	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0603, X7R, 100nF, 50V	C4, C7, C8, C9, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24	WCAP- CSGP_0603_L1.6W0.8 H0.8_Reflow	885012206095	18
100pF, 50V	WCAP-CSGP Multilayer Ceramic Chip Capacitor, General Purpose, size 0805, NP0, 100pF, 50V	C10	WCAP- CSGP_0805_L2W1.25 H0.8_Reflow	885012007057	1
10u	C: 10u: 50V: 10%: X7R: ??	CK1, CK3, CK4, CK5, CK6, CK7	CAPC3225X27N(SMC1 210)	ECK+10U50V000	6
100n	C: 100n: 50V: 10%: X7R: ??	CK2, CK8	CAPC1608X09N(SMC0 603)	ECK+100N50V06030X K	2
BAV99		D1, D2, D3, D4, D5, D6, D7, D8, D9, D10, D11, D12	SOT95P230X110- 3N(SOT123)	BAV99	12
SMDGREEN	Ind: Light: Green:	DL1, DL2, DL3, DL4	DI0C20121X12N(SMLE D0805/G	EDL+SMDGREEN00K1	4
W4230-06PSTBOR	Com: Micro Fit 3.0: 6x: PCB: Straight: 250V: SA: Male: Tin: ??	J1	W4230-06PDS	EJ-W4230- 06PDSBOR000	1
W4230-08PDSGBOR	Com: Micro Fit 3.0: 8x: PCB: Straight: 250V: SA: Male: Gold: ??	J4, J5	W4230-08PDS	EJ-W4230- 08PDSGBOR000	2
NYS232	6.3 mm jack, right angle, THT	P1, P2, P3, P4, P5, P6, P7, P8, P9, P10	NYS232	NYS232	10
R20	Thick Film resistor, 0603 Size, universal value, 0.1 W	R1	RESC1608X06N(SMR0 603)	R 0603 universal	1
5k6	Thick Film resistor, 0603 Size, universal value, 0.1 W	R2, R3	RESC1608X06N(SMR0 603)	R 0603 universal	2
18k	Thick Film resistor, 0603 Size, universal value, 0.1 W	R4	RESC1608X06N(SMR0 603)	R 0603 universal	1
360k	Thick Film resistor, 0603 Size, universal value, 0.1 W	R5	RESC1608X06N(SMR0 603)	R 0603 universal	1
10k	Thick Film resistor, 0603 Size, universal value, 0.1 W	R6, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R65, R66, R67, R68	RESC1608X06N(SMR0 603)	R 0603 universal	25
100k 0.05	Precision Thick Film resistor, 0603 Size, universal value, 0.1 W	R7, R8	RESC1608X06N(SMR0 603)	R 0603 universal	2
100k	Thick Film resistor, 0603 Size, universal value, 0.1 W	R9, R10, R11, R59, R60	RESC1608X06N(SMR0 603)	R 0603 universal	5
1M	Thick Film resistor, 0603 Size, universal value, 0.1 W	R12, R16	RESC1608X06N(SMR0 603)	R 0603 universal	2
470	Thick Film resistor, 0603 Size, universal value, 0.1 W	R13, R18, R35	RESC1608X06N(SMR0 603)	R 0603 universal	3
1M5	Thick Film resistor, 0603 Size, universal value, 0.1 W	R14	RESC1608X06N(SMR0 603)	R 0603 universal	1
51k	Thick Film resistor, 0603 Size, universal value, 0.1 W	R15	RESC1608X06N(SMR0 603)	R 0603 universal	1
1k8	Thick Film resistor, 0603 Size, universal value, 0.1 W	R17, R57	RESC1608X06N(SMR0 603)	R 0603 universal	2
4k7	Thick Film resistor, 0603 Size, universal value, 0.1 W	R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R32, R36, R58	RESC1608X06N(SMR0 603)	R 0603 universal	13
330	Thick Film resistor, 0603 Size, universal value, 0.1 W	R29	RESC1608X06N(SMR0 603)	R 0603 universal	1
1k5	Thick Film resistor, 0603 Size, universal value, 0.1 W	R30	RESC1608X06N(SMR0 603)	R 0603 universal	1
2k2	Thick Film resistor, 0603 Size, universal value, 0.1 W	R31	RESC1608X06N(SMR0 603)	R 0603 universal	1
220R	Thick Film resistor, 0603 Size, universal value, 0.1 W	R33, R34	RESC1608X06N(SMR0 603)	R 0603 universal	2
100R	Thick Film resistor, 0603 Size, universal value, 0.1 W	R61, R62, R63, R64	RESC1608X06N(SMR0 603)	R 0603 universal	4
500R	R: 500R: 0.5W: 10%: 250V: Variable: e:100ppm/K: 1x:	RP1	64W	ERP-500R0.5X00	1
BC817-40	Slew: NP0: 750nm: 45V: 0.5A: 1x:	T1, T2	SOT95P230X110- 3N(SOT123)	ET+BC817-40X00	2
OPA4197ID	IC: Opamp: 4.5V: 36V: 4x:	U1, U4	SOIC127P600K175- 14N(SQ-14)	EU+OPA4197IDR000	2
CEM3340	ALFA RPAP A33340 KCO (CEM3340)	U3	DIP-16	CEM3340	1
10k	093 - 3/8" Square (10 mm) Multi-Turn Cermet Trimmer	VR1, VR3, VR4, VR5	64W	Trimmer universal 3/8 (10mm)	4
20k	093 - 3/8" Square (10 mm) Multi-Turn Cermet Trimmer	VR2	64W	Trimmer universal 3/8 (10mm)	1