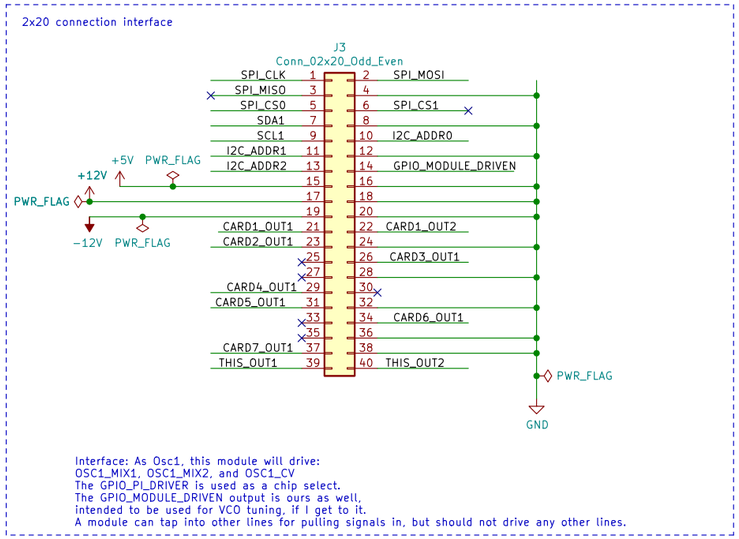
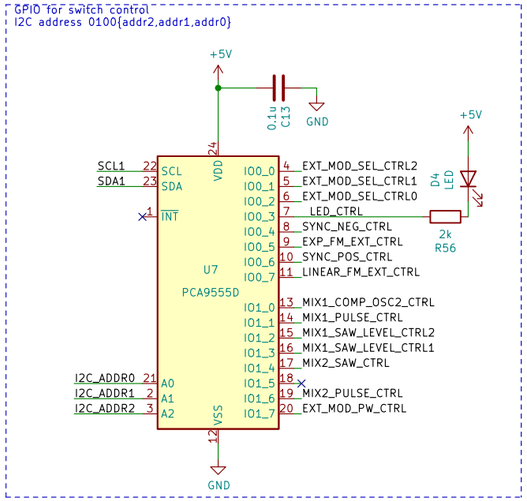
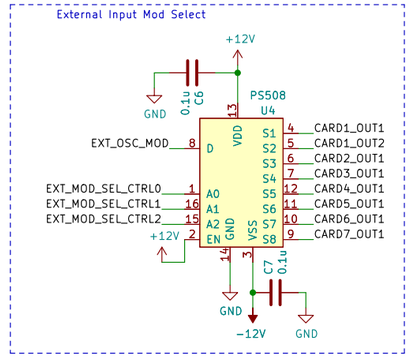
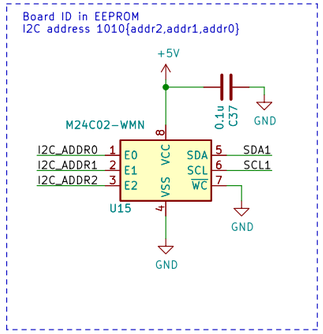
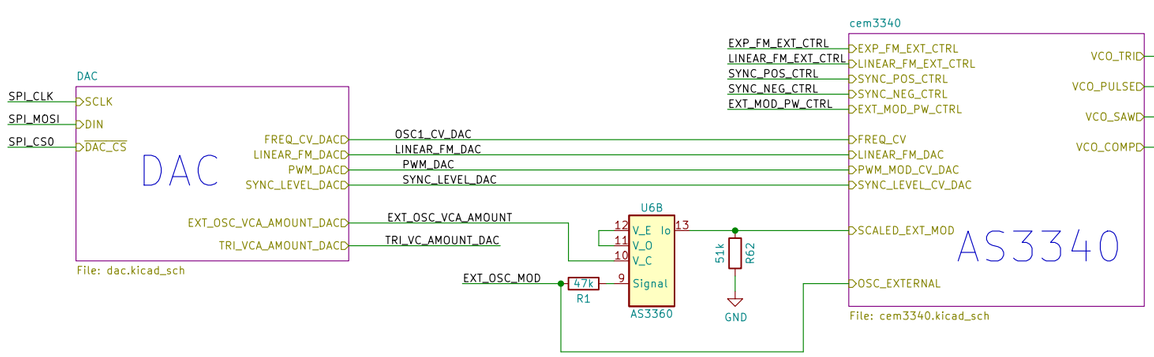


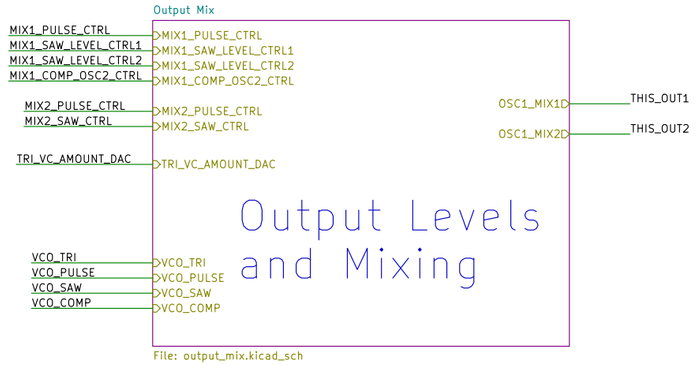



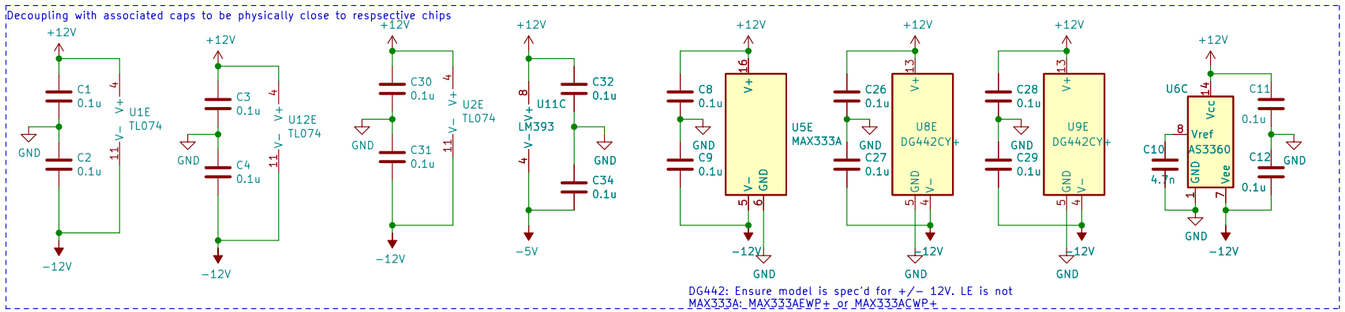



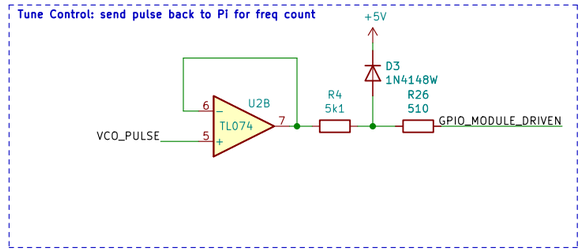



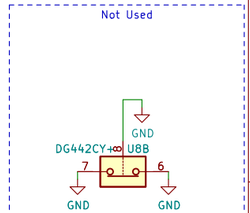


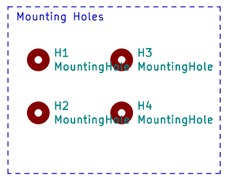


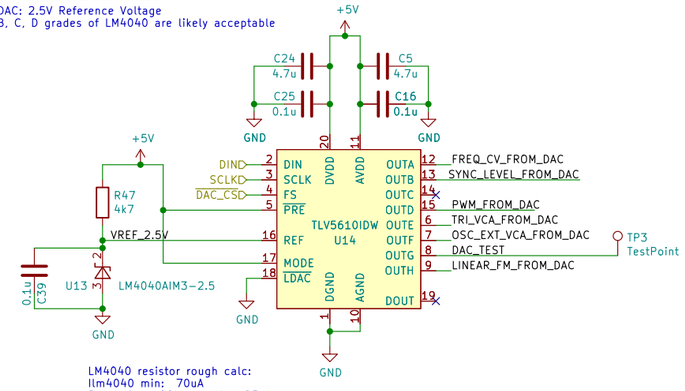

Zoxnoxious Engineering

Sheet: /
File: as3340.kicad_sch

**Title: Zoxnoxious 3340 Oscillator**

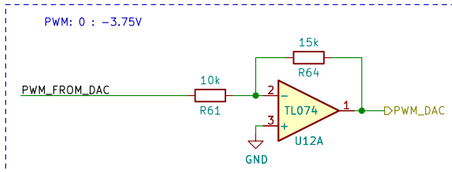
| Size: B | Date: 2022-09-07 | Rev: 0.4 |
|---|---|---|
| KiCad E.D.A. kicad (6.0.7-1)-1 | | Id: 1/4 |

DAC: 2.5V Reference Voltage
B, C, D grades of LM4040 are likely acceptable

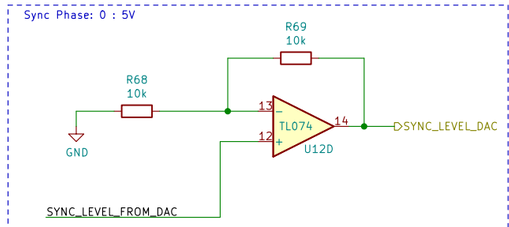



LM4040 resistor rough calc:
lm4040 min: 70uA
Rdacref = 100k ==> I = 25uA
opamp will swing about 0 50 uA
for roughly 150uA ==> 16kR min
Lower to 5k, call it good

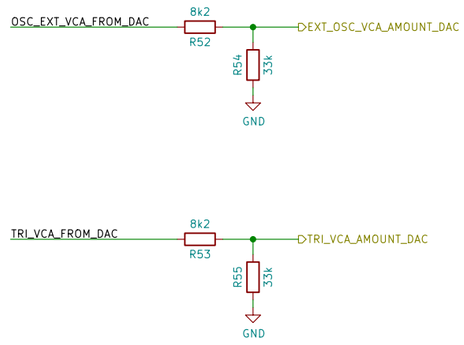
PWM: 0 : -3.75V

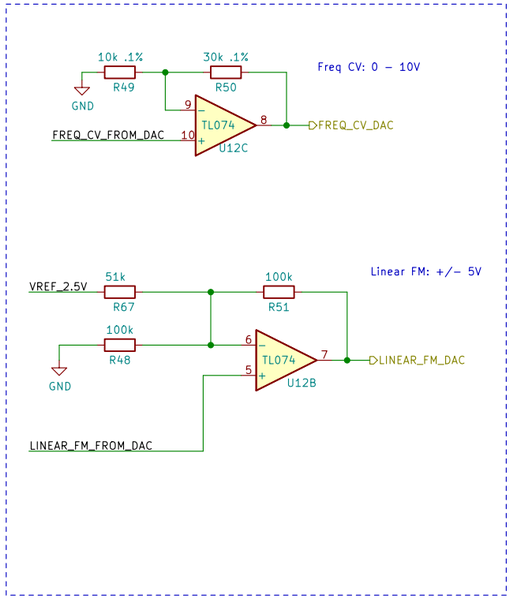



Sync Phase: 0 : 5V




Scaling for VCA of 0-2V

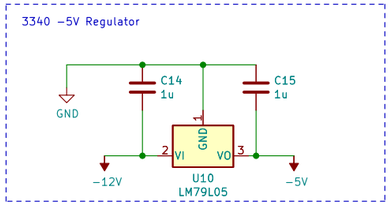


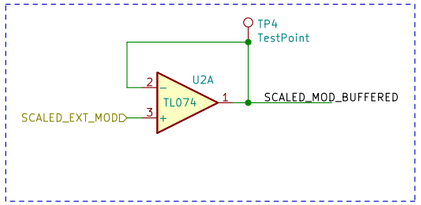



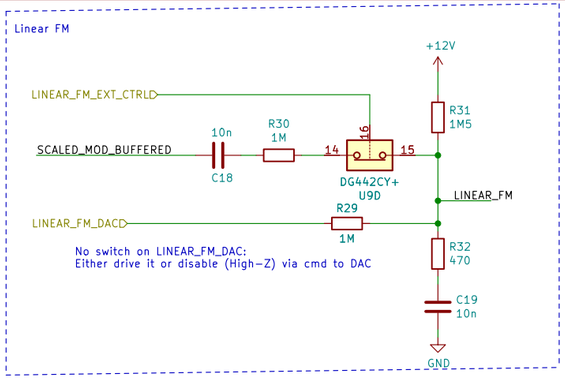

DAC Output Levels:

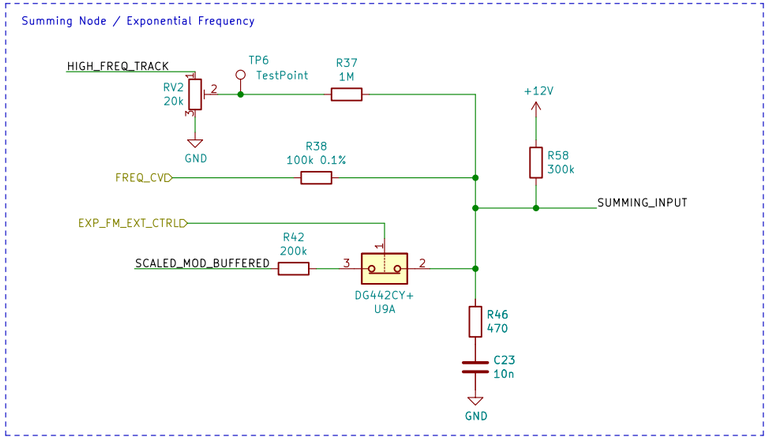
FREQ_CV_DAC: 0 : 10V
LINEAR_FM_DAC: +/- 5V
EXT_OSC_VCA_AMOUNT: 0 : 2V
PULSE_VCA_AMOUNT_DAC: 0 : 2V
PWM_DAC: 0 : -3.75V (inverted to positive downstream)
SYNC_LEVEL_DAC: 0 : 10V (sync phase)

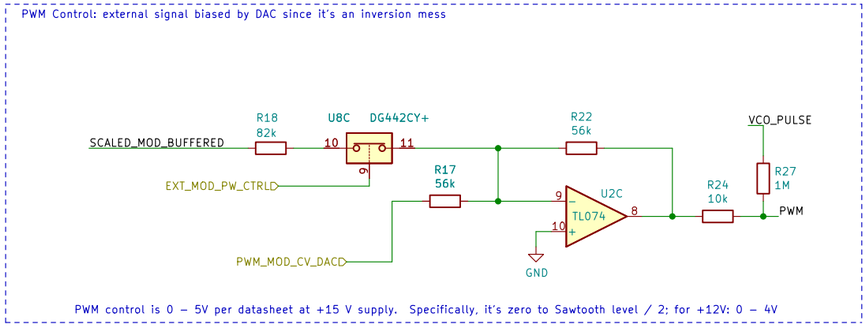
Zoxnoxious Engineering
Sheet: /DAC/
File: dac.kicad_sch
**Title: Zoxnoxious 3340 Oscillator**
Size: B | Date: | **Rev: 0.4**
KiCad E.D.A. kicad (6.0.7-1)-1 | Id: 2/4

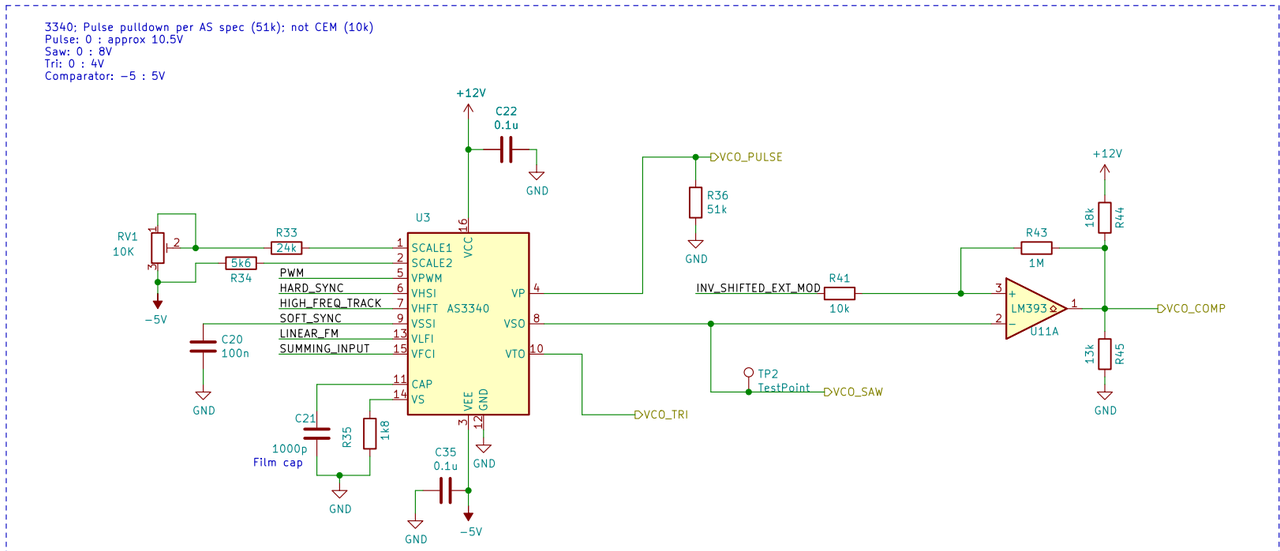


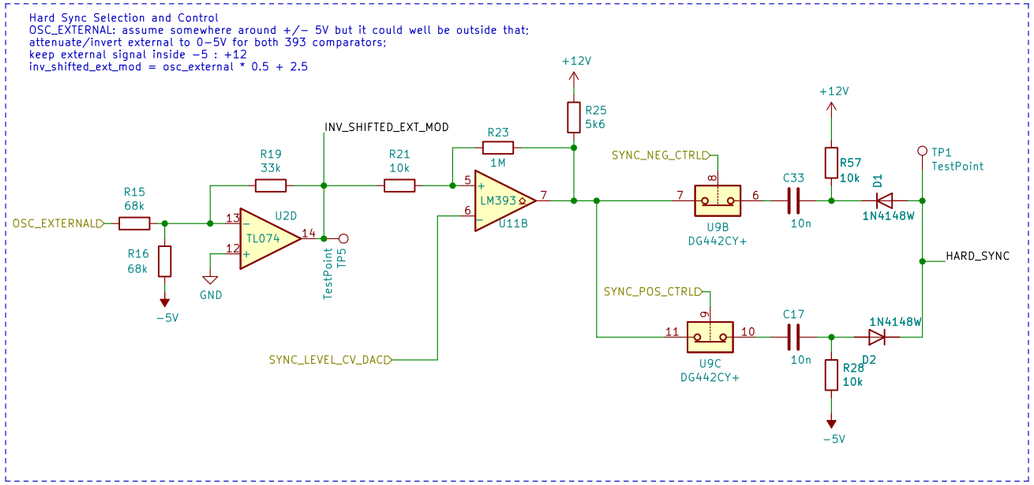



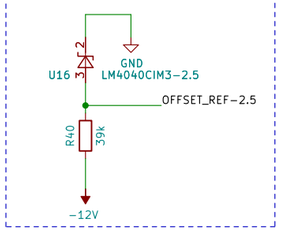




Zoxnoxious Engineering
Sheet: /cem3340/
File: cem3340.kicad_sch

**Title: Zoxnoxious 3340 Oscillator**

| Size: B | Date: | Rev: 0.4 |
|---|---|---|
| KiCad E.D.A. kicad (6.0.7−1)−1 | | Id: 3/4 |

Any grade of LM4040 is fine–
just provide something more stable than
the rails for an offset voltage

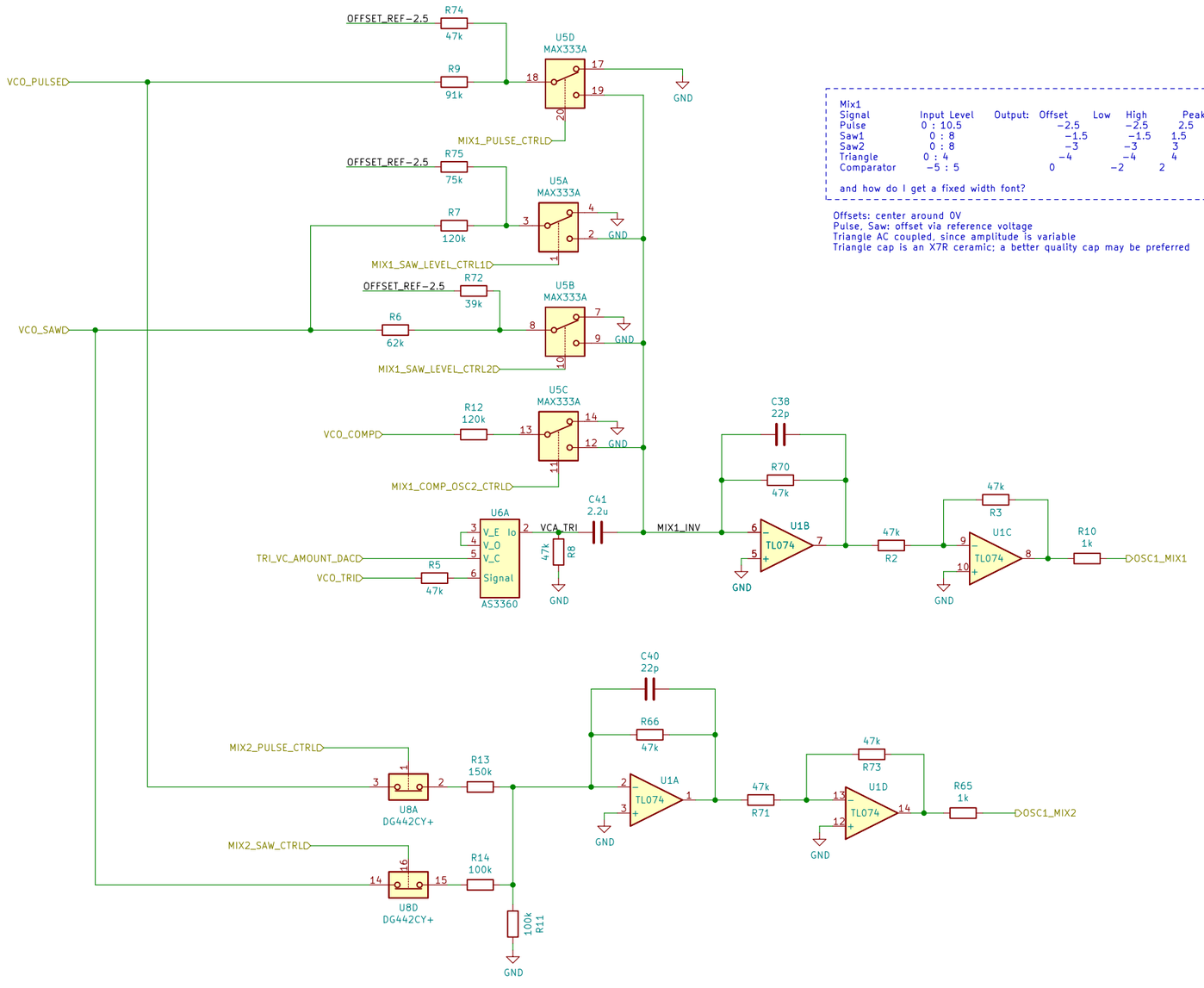



–16k in load to OFFSET_REF–2.5 ==> 150 uA
LM4040 requires 65 uA
total 215 uA
44k calculated ==> 39k resistor, allowing for power supply wierdness
Changing offsets to waveforms will change this value

| Mix1 | | | | | | |
|---|---|---|---|---|---|---|
| Signal | Input Level | Output: | Offset | Low | High | Peak–to–Peak |
| Pulse | 0 : 10.5 | | –2.5 | –2.5 | 2.5 | 5 |
| Saw1 | 0 : 8 | | –1.5 | –1.5 | 1.5 | 3 |
| Saw2 | 0 : 8 | | –3 | –3 | 3 | 6 |
| Triangle | 0 : 4 | | –4 | –4 | 4 | 8 |
| Comparator | –5 : 5 | | 0 | –2 | 2 | 4 |

and how do I get a fixed width font?

Offsets: center around 0V
Pulse, Saw: offset via reference voltage
Triangle AC coupled, since amplitude is variable
Triangle cap is an X7R ceramic; a better quality cap may be preferred




**Zoxnoxious Engineering**

Sheet: /Output Mix/
File: output_mix.kicad_sch

***Title: Zoxnoxious 3340 Oscillator***

| Size: B | Date: | **Rev: 0.4** |
|---|---|---|
| KiCad E.D.A. kicad (6.0.7–1)–1 | | Id: 4/4 |