

[Ordering Closed] Project PRO2021 - A Pro-One keyboard synth

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Author

[Ordering Closed] Project PRO2021 - A Pro-One keyboard synth

devinw1
Veteran Wiggler



Posted: Mon Nov 05, 2018 1:44 pm Post subject: [Ordering Closed] Project PRO2021 - A Pro-One keyboard synth

[quote](#) [ignore](#)

All build documentation:
<https://github.com/devinw1/PRO2021/tree/master>

Ordering info:

The deposit amount will be for 300USD regardless of what kit level you want, paypal'd to westonde(AT)gmail(DOT)com (not typing email directly to hopefully save myself from potential lurking spambots...)

In the paypal message field, please put your email address and what level of kit you are ordering (Full, minus wood ends, minus pitch/mod wheel assemblies, or minus wood ands and minus pitch/mod wheel). I will write back a confirmation email. 😊

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

PRICING (Shipping Estimates Below):

Main Kit (See contents below): 599USD

Main Kit minus wood end cheeks: 529USD

Main Kit minus pitch/mod wheel assemblies: 529USD

Main Kit minus wood ends and pitch/mod assemblies: 459USD

As a reminder,

MAIN KIT INCLUDES:

- Formed Aluminum chassis bottom (black anodize with laser etch graphics)
- Formed Aluminum chassis top (black anodize with laser etch graphics)
- Bare PCBs (1x "A" Board, 1x "B" Board, 1x PSU Board, 2x VCO Module Board)
- A-B Interconnect ribbon cable assemblies
- Shielded cable for audio and MIDI board-to-chassis wiring
- All pots (11mm) for build (100k Linear and 100k Audio)
- Machined aluminum custom P2021 pitch bend and modulation wheel assemblies.
- CNC Machined cherry wood left and right end cheeks (unfinished for your choice of finish)
- 5x 2N4250 Transistors
- All required mounting hardware (rubber feet, standoffs, black SS flat head screws, Socket head screws for ends, sheet metal U nuts, etc..)

Required Mouser Carts:

A+B+VCOs: https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=d64a_e2f494

PSU+Misc: https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=d456_fbb6db

Additional Required Electronic Parts:

- 3X CEM3340 Rev G (NOT AS3340)
- 2X AS3310 ADSR IC
- 1X AS3320 VCF
- 1X CA3280 OTA or AS3280 (SMD reproduction from Alfa)
- 2 groups of 6 100k resistors matched to 0.01% (TH or SMD)

Your estimated total build cost = 599USD + Mouser Carts(267USD)+TurboCPU(100USD)+Keybed(68USD)+CEM Chips (15USD)
= 1047USD

Some country estimates (USPS Priority 6-11 day delivery):

UK: 105USD Shipping. On receipt, buyer will pay Import (3.7%) + VAT (20%)

Sweden: 90USD shipping. On receipt, buyer will pay Import (3.7%) + VAT (25%)

Germany: 90USD Shipping. On receipt, buyer will pay Import (3.7%) + VAT (19%)

United States (USPS Priority Mail):

Furthest From Me (Florida): 60USD Shipping.

Close To Me (California): 40USD Shipping

I can and will of course calculate shipping for your specific country as well.



Some sound samples of the PRO2021:

<https://soundcloud.com/saywaht/pro2021-samples-2>

Video comparison:

<https://www.youtube.com/watch?v=i0gcPrDeJhQ&feature=youtu.be>

Some pics of what you build!:









All build documentation:

<https://github.com/devinw1/PRO2021/tree/master>

UPDATES/STATUS

09/??/18 – Work starts on project
11/05/18 – Project thread kicked off
11/07 /18 – Prototype PCBs delivered/stuffed
11/12/18 – Board “A” prototype spin-up working
11/14/18 – Board “B” spin-up working but VCOA and VCOB locking together when close in pitch
11/26/18 – Board “B” complete re-route for signal on top, power on bottom with ground isolation + plug in modular VCO boards designed and ordered.
12/14/18 – Prototype fully calibrated and functional with new “B” PCB and VCO boards. Sound samples provided on SoundCloud.
12/15/18 – Pitch and mod functionality tested. Adjusting R117 and R118 on “B” PCB from 8.2k to 15k and adding optional inline 1M pot for adjustable pitch range. Without trimmer = ~1 octave range. With pot = ~1 half step-1 octave.
12/16/18 – 5 pieces each of prototype sheet metal enclosure top and bottom ordered.
12/16/18 – SLS 3D printed enclosure support bracket and Pitch/Mod wheels ordered.
12/17/18 – Final (hopefully) power supply PCBs ordered
01/05/19 - Kit interest list started
01/08/19 - Alpha prototype unit rough assembly complete.
01/09/19 - Start design of production pitch/bend assembly.
01/14/19 - Production pitch/bend assy design complete.
01/17/19 - Waiting on protote pitch/mod assy manufacturing. Compiling kit pricing.
02/01/19 - Kit Pricing
02/03/19 - Shipping Estimates
02/03/19 - Open for deposits, first round of kits!
03/30/19 - Shipping first round of kits
04/02/19 - Most first round kits shipped

ORIGINAL THREAD STARTS HERE

As I have probably mentioned in a couple other threads, I had intended to build a Pro-One clone of sorts - not a rack or module, but a whole standalone monosynth. Well, I've actually been working very hard on this for the past few months, and thought I'd start a thread to document my progress. My end goal is to possibly offer these in DIY kit form if people are interested, though it seems many more people are interested in modular than keyboards here. I, myself play in bands that play out and modular is not so ideal for that, hence my interest in standalong keyboards! Plus, I just think they look f**king cool! Before anyone asks, yes I

know that Beringer already re-popped the Pro-One and it's probably like \$200, but it's again a rack, and also I really don't like Beringer stuff (personal opinion only). Oh, and I like to build my own stuff right here in the good ol USA. The whole process allows me to build my engineering skills (I am a ME by trade and gradually learning EE stuff by working with synths) and have some fun along the way!

My plan from the beginning was to make a fully functioning Pro-One, with the following modifications:

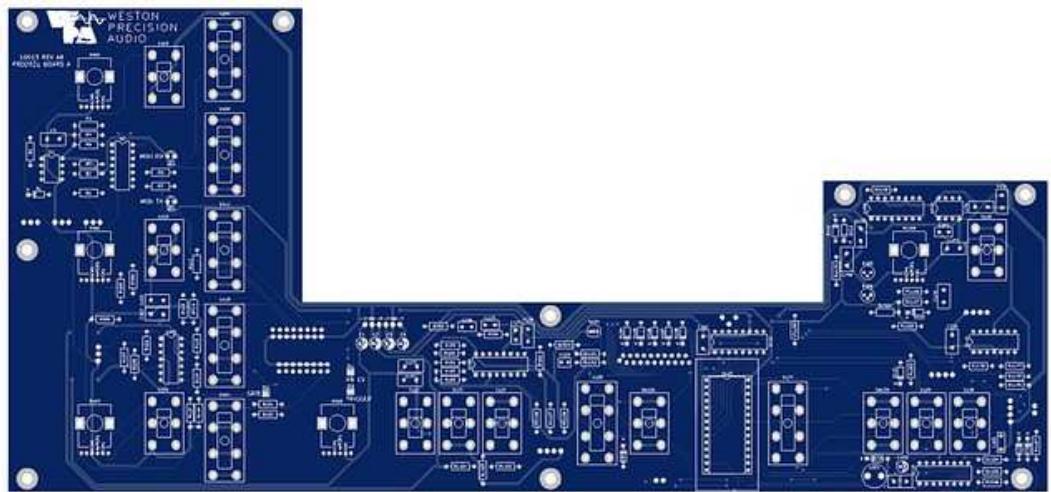
- 1) MIDI on board
- 2) Utilize the MTI "Turbo CPU" and a Fatar keybed
- 3) Use re-popped CEM chips or Alfa clones for all the CEM stuff (of course)
- 4) Better pots all around and actually use some Audio taper pots where applicable (the original uses linear pots for EVERY pot)!
- 5) Separate high quality power supply instead of power supply on board
- 6) Simple enclosure with max of 2 custom sheet metal parts.

When I started with the PCBs, I decided it would be easier for me (and due to limitations of my PCB house having <=500mm length of PCB) to make the PCB in 2 pieces: 1 for most of the CPU and modulation and LFO stuff from sheet 1 of the schematic, and 2 for the rest. The 2 will link signals via 2 ground shielded ribbon cables as a "bus" much like how the original Arp Odyssey did.

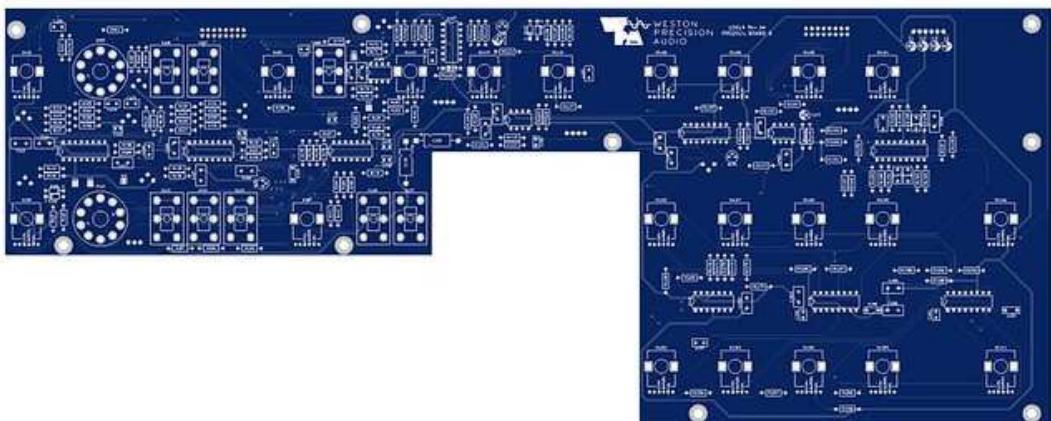
So, my current status in all this is such:

- Power supply board designed and built. Just tested this weekend
- PCBs "A" and "B" drawn up, routed, and ordered. I should receive the PCBs today actually
- All electrical components have been purchased for the first prototype.
- Mechanical design is probably ~70% done (Render shown below). The keyboard is built with 2 anodized and laser etch sheet metal panels, attached with some PEMs, and tied together by the 2 Teak Wood CNC machined end cheeks and by 2 internal 3D printed support brackets.

PCB "A":



PCB "B":



Rendering:



I will report back with status updates. Tomorrow I will begin stuffing the main PCBs!

Last edited by devinw1 on Fri Apr 19, 2019 10:41 am; edited 32 times in total

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nologin

Common Wiggler



Joined: 21 Jan 2016

Last Visit: 20 Apr 2019



Posts: 143

Location: France

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ashleym

Veteran Wiggler

Joined: 22 Oct 2009

Last Visit: 18 Apr 2019



Posts: 526

Obviously too late but did you think of 2 types of sync? a 3 way slider for sync would cover that. Slip this down to the mode section and you have room to add a slider for a triangle wave on Osc 1. (edit) LED for the LFO and up its top speed. Something builders could do themselves if this turns into a project.

Last edited by ashleym on Mon Nov 05, 2018 3:22 pm; edited 1 time in total

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djs

Super Deluxe Wiggler

Joined: 01 Sep 2010

Last Visit: 20 Apr 2019



Posts: 1029

Location: South Beloit, IL

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csaban

Learning to Wiggle

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Joined: 07 Aug 2016
Last Visit: 20 Apr 2019



Posts: 36
Location: Glasgow

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Dan Lavin
Learning to Wiggle



Joined: 04 Sep 2014
Last Visit: 18 Apr 2019



Posts: 34
Location: Spring Lake, Michigan USA

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groove
Common Wiggler

Joined: 19 Jul 2013
Last Visit: 18 Apr 2019



Posts: 213
Location: NY

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Would it work with other keybeds?

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Posted: Mon Nov 05, 2018 4:26 pm Post subject:

[quote](#) [ignore](#)

ashleym wrote:

Great project. A stand alone mono synth was the gateway drug for me. Mono is good.

Obviously too late but did you think of 2 types of sync? a 3 way slider for sync would cover that. Slip this down to the mode section and you have room to add a slider for a triangle wave on Osc 1. (edit) LED for the LFO and up its top speed. Something builders could do themselves if this turns into a project.

As an owner of the original Pro-1, that was my only regret on the SCI design: soft sync only. I'm a big hard sync fan and really wished it had it.

Posted: Mon Nov 05, 2018 4:46 pm Post subject: Re: Project PRO2021 - A Pro-One keyboard synth

[quote](#) [ignore](#)

I'm interested in building something like this - curious what the all-in would come out to.

<http://loudshow.tumblr.com>

[profile](#) [pm](#) [www](#)

Posted: Mon Nov 05, 2018 4:50 pm Post subject:

[quote](#) [ignore](#)

ashleym wrote:

Great project. A stand alone mono synth was the gateway drug for me. Mono is good.

Obviously too late but did you think of 2 types of sync? a 3 way slider for sync would cover that. Slip this down to the mode section and you have room to add a slider for a triangle wave on Osc 1. (edit) LED for the LFO and up its top speed. Something builders could do themselves if this turns into a project.

Thanks! Unfortunately I did not realize people wanted the hard sync on this! Like I said the proto boards are hitting my house today, but I think that will be easy to add later on a revision!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[profile](#) [pm](#) [email](#)

Posted: Mon Nov 05, 2018 4:53 pm Post subject:

[quote](#) [ignore](#)

djs wrote:

this is really cool.. will it also have cv/gate in/out? or just midi?

Yes! It will have all the jacks of the original including the Audio In, as well as MIDI in out and thru.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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steffensen
Veteran Wiggler



Joined: 07 Apr 2009
Last Visit: 20 Apr 2019



Posts: 716
Location: Sweden

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<https://steffcorp.se>

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csaban
Learning to Wiggle

Joined: 07 Aug 2016
Last Visit: 20 Apr 2019



Posts: 36
Location: Glasgow

Posted: Tue Nov 06, 2018 6:58 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

csaban wrote:



Would it work with other keybeds?

So I've built this to give the original CPU (or the TURBO CPU in this case) the 3 octave switch/diode matrix that it expects. It so happens that the Fatar 37 key OEM unit has this configuration. As long as the other keybed was laid out with the Make/Break switches the same, it would work.

The other way would be to just operate strictly off MIDI, but you would lose the built in Sequencer ability (that's why I chose to use the fatar direct to the CPU). The sequencer is pretty neat.

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That's great, then it should be possible to use any other switch/diode matrix keybed. I'm not sure how accessible a 37 key Fatar keybed is, but it should be quite easy to re-use a broken midi controller.

Would there be extra pins available on the CPU for additional keys? (Assuming the code is not closed source and can be modified to accommodate an extra row/column)

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Posted: Tue Nov 06, 2018 11:06 am Post subject:

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csaban wrote:

devinw1 wrote:



Would it work with other keybeds?

So I've built this to give the original CPU (or the TURBO CPU in this case) the 3 octave switch/diode matrix that it expects. It so happens that the Fatar 37 key OEM unit has this configuration. As long as the other keybed was laid out with the Make/Break switches the same, it would work.

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Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



devinw1
Veteran Wiggler



That's great, then it should be possible to use any other switch/diode matrix keybed. I'm not sure how accessible a 37 key Fatar keybed is, but it should be quite easy to re-use a broken midi controller.

Would there be extra pins available on the CPU for additional keys? (Assuming the code is not closed source and can be modified to accommodate an extra row/column)

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Indeed it is not so easy to procure the 37 key OEM Fatar, but it is certainly possible. I have a feeling if people wanted to do a group buy and someone just got on the phone with Fatar and asked for a quote for 10 for example, they would sell them.

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Posted: Tue Nov 06, 2018 11:08 am Post subject:

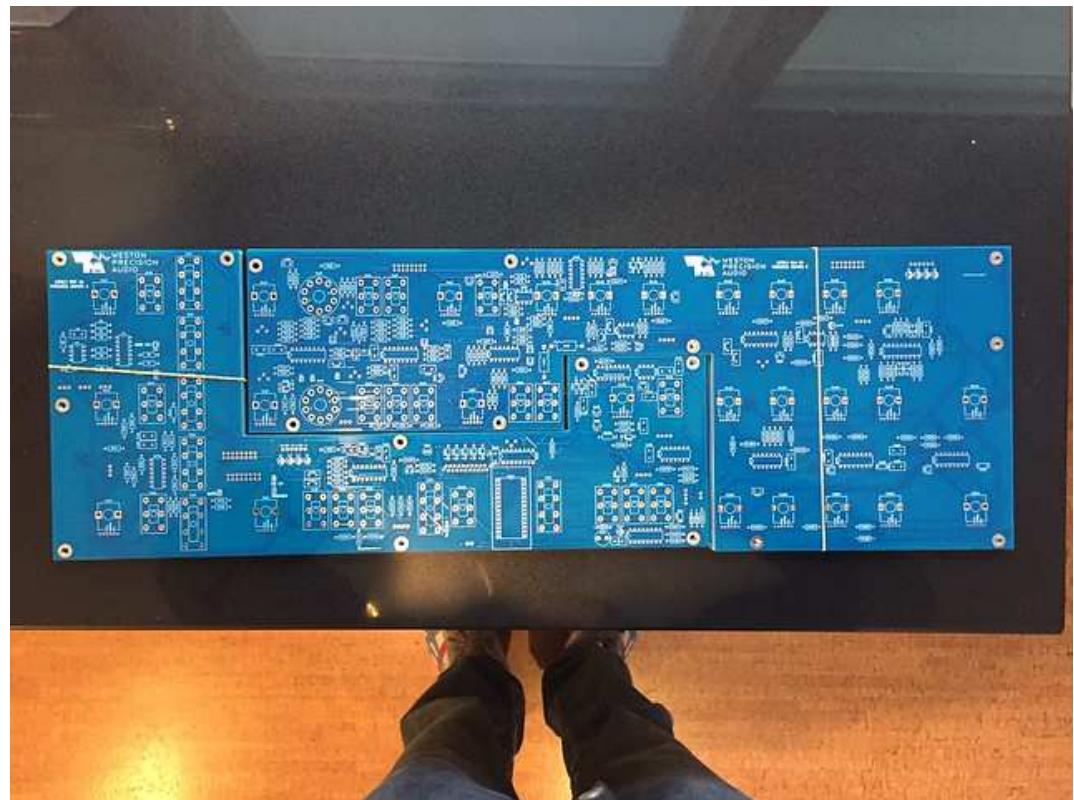
[quote](#) [ignore](#)

Bands are here! Stuffing begins tonight:

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



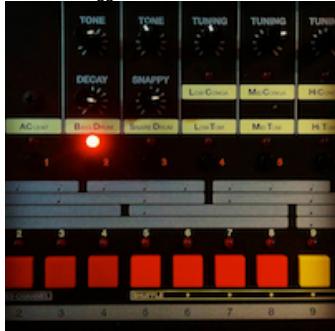
I did a quick check and looks like everything is OK, except I screwed the footprint of the 6 3PDT switches up and the pins are off set from the center by 30 mils. DOH! At least the nominal position is right. I can make it work still though and have fixed my Kicad file so the next batch if there should be one will be correct 😊.

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minisystem
Common Wiggler



Joined: 26 Dec 2012
Last Visit: 20 Apr 2019



Posts: 154
Location: Toronto

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Altitude909
Super Deluxe Wiggler

[quote](#) [ignore](#)

hm. interested.



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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4floors of whores
Common Wiggler

Joined: 16 Feb 2014
Last Visit: 02 Apr 2019



Posts: 229
Location: Notts UK

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Eric the Red
Veteran Wiggler



Joined: 02 Jun 2015
Last Visit: 19 Apr 2019



Posts: 699
Location: Detroit, MI

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kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

- Will it feature the very same **sequencer** (2 patterns, 40 notes each) ? I like this sequencer a lot for quick and dirty sketches, basslines, complex arpeggios, etc.

Could we imagine to be able to export/re-import the sequences somewhere, in some way (using Midi, maybe) ?

- Will the LFO and sequencer **sync** to audio in trigger (this feature is a-ma-zing to play everything in sync with other gear) ?

- Will the filter feature the same "uncompensated high **resonance** volume loss" ? It could be a *feature*, for the sake of a 1:1 clone, but it is also something i don't like a lot with that filter... So a switch allowing for "classic" and "compensated" would be great (a bit like Korg did for the Odissey reissue).

- Did you consider proposing a **desktop** module also ? I have read that you prefer keyboards, but for something buying a single unit for a kit, a keybed is quite expensive, and it also involves a bigger case (which is also expensive). So, to have it more

portable and affordable, i would rather buy a desktop version than a keyboard version, if possible...

<http://kragg.fr/>

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Tue Nov 06, 2018 4:25 pm Post subject:

[quote](#) [ignore](#)

kragg wrote:

Wow

Very ambitious (and exciting !) project !
I am looking forward to see how it evolves, I love the Pro-One to bits.

Out of curiosity :

- Will it feature the very same **sequencer** (2 patterns, 40 notes each) ? I like this sequencer a lot for quick and dirty sketches, basslines, complex arpeggios, etc.
Could we imagine to be able to export/re-import the sequences somewhere, in some way (using Midi, maybe) ?
- Will the LFO and sequencer **sync** to audio in trigger (this feature is a-ma-zing to play everything in sync with other gear) ?
- Will the filter feature the same "uncompensated high **resonance** volume loss" ? It could be a *feature*, for the sake of a 1:1 clone, but it is also something I don't like a lot with that filter... So a switch allowing for "classic" and "compensated" would be great (a bit like Korg did for the Odissey reissue).
- Did you consider proposing a **desktop** module also ? I have read that you prefer keyboards, but for something buying a single unit for a kit, a keybed is quite expensive, and it also involves a bigger case (which is also expensive). So, to have it more portable and affordable, i would rather buy a desktop version than a keyboard version, if possible...

Thanks! To answer your questions:

- 1) For this, I am using the Music Technologies Group "Turbo CPU", so yes it behaves exactly the same as the original 8021 CPU used on the Pro-One, including the sequencer.
- 2) Yes. The Pro-One rectifies the audio in signal to a threshold adjusted in the Mixer section and syncs the sequence.
- 3) I'm using the AS3320 clone of the CE3320, so I assume they behave quite the same! I haven't used this chip yet before though. This will be a first.
- 4) Absolutely will consider this. The hard thing will be to figure out the sequencer. Option 1 is to keep the CPU and just waste the keyboard wiring and the DAC involved in this circuit (since you'd obviously be just be using MIDI and/or CV in this config). Option 2 would be to make a new , simpler CPU module to retain only the sequencer portion. THis is beyond my skillset right now, but perhaps other DIYers will want to tackle this!

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djs
Super Deluxe Wiggler

Joined: 01 Sep 2010
Last Visit: 20 Apr 2019



Posts: 1029
Location: South Beloit, IL

□ Posted: Tue Nov 06, 2018 4:39 pm Post subject:

[quote](#) [ignore](#)

There's a part of me that says "stack two of these together like a prophet 10"... I don't know why, but it sort of sounds like a good idea.

"Noise is what the Earth is made of" - David Bowie

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ashleym
Veteran Wiggler

Joined: 22 Oct 2009
Last Visit: 18 Apr 2019



Posts: 526

Surely a Prophet-Two?

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tobb
Veteran Wiggler

□ Posted: Wed Nov 07, 2018 10:16 am Post subject:

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Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

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The resonance of the AS version has a different behavior.

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Posted: Wed Nov 07, 2018 12:22 pm Post subject:

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Good to know! I'm sure it will still sound pretty good though!

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Posted: Wed Nov 07, 2018 12:26 pm Post subject:

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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BTW, I forgot to mention in regard to the question about a desktop module: as you all probably know, Beringer plans to sell a "eurorack" (a little wood-ended bar that fits euro like they did the Minimoog) clone for \$299 that will come out soon. I think it will be hard to touch their pricing DIY, when you factor in getting the all the chips and the sheet metal and wood, so it's probably not worth it. But, if people wanted to make a lot of tweaks, using my boards as a starting point might still make sense. But, there is a lot of cost in all the ICs when you add it up in low volume (AKA not nearly as cheap as Beringer can get them 😊)

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Posted: Wed Nov 07, 2018 12:29 pm Post subject:

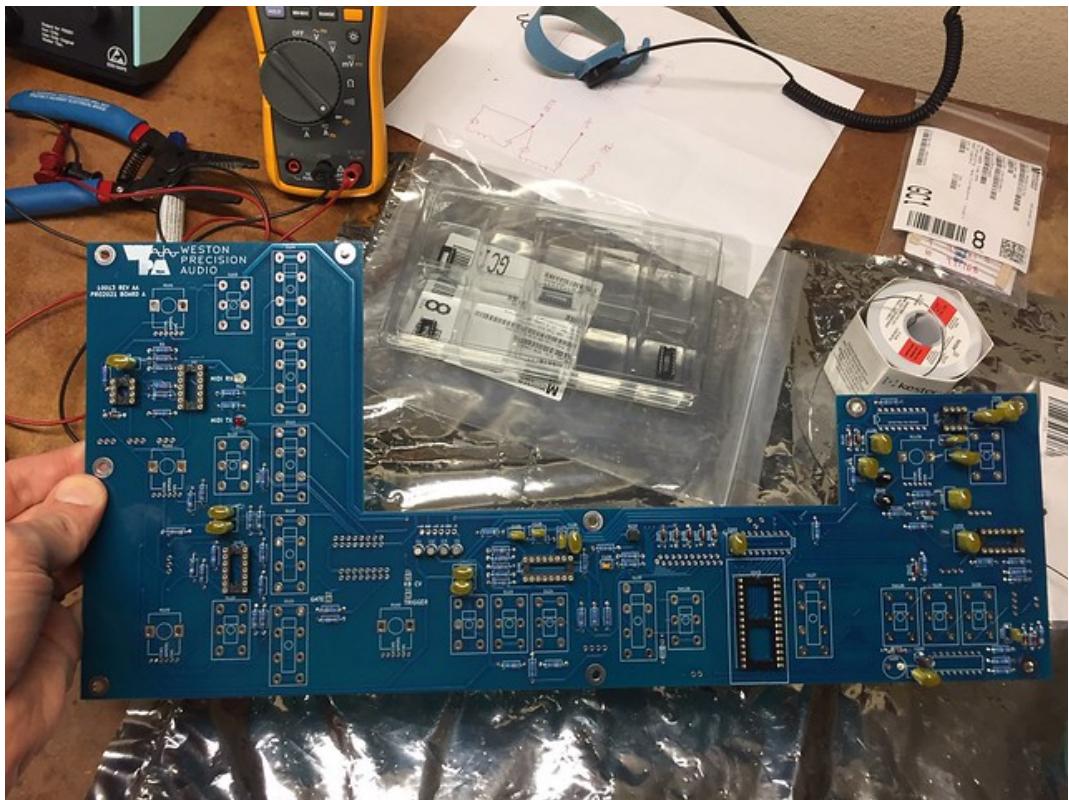
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devinw1
Veteran Wiggler



Also, progress last night 😊😊

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggle



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909 wrote:
buying a cheap beh clone whether it materializes or not bores me to death. DIY ftw, why spend \$300 on something when you can build it for 4 times that

You and I are cut from the same cloth, my friend! 😊

Also, project update: planned on doing some more board stuffing today, but I came down with DeathFlu2k18 last night and currently laying in bed feeling like I got hit by a truck, so we shall see if anything gets done today. 🚑

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Sandrine
Super Deluxe Wiggle



Joined: 09 Jun 2015
Last Visit: 17 Apr 2019



Posts: 1894
Location: BC Canada

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[Post](#): Thu Nov 08, 2018 1:37 pm Post subject:

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Very ambitious!

I agree on the bear hinger ejaculation! They probably used the cheapest driftly crap parts (5% resistors/neo caps) and 29 cent pots with plastic shafts and knobs glued on because they wouldn't fit (past experiences with them!)

Build it nice. Build it well.



Reflex LiveLoop Sampler Videos <http://www.youtube.com/user/freshnelly/videos>

Reflex Sampler Page <http://www.freshnelly.com/reflex/reflex.htm>

Flash-8 Page <http://www.freshnelly.com/reflex/flash8.htm>

SDS_VCO Page <http://www.freshnelly.com/sdsvco/sdsvco.htm>

RIT_M Sequencer Page <http://www.freshnelly.com/ritm/ritm.htm>

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[Post](#): Thu Nov 08, 2018 4:31 pm Post subject:

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tobt wrote:

tobt wrote:

devinw1 wrote:

3) I'm using the AS3320 clone of the CE3320, so I assume they behave quite the same! I haven't used this chip yet before though. This will be a first.

The resonance of the AS version has a different behavior.

Good to know! I'm sure it will still sound pretty good though!

I have read from tests the Resonance control is somehow exponential

So (i guess) its more difficult to dial in the same sweet spots as on a pro-one

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[Post](#): Fri Nov 09, 2018 1:08 pm Post subject:

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tobt wrote:

devinw1 wrote:

tobt wrote:

devinw1 wrote:

3) I'm using the AS3320 clone of the CE3320, so I assume they behave quite the same! I haven't used this chip yet before though. This will be a first.

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Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



So (i guess) its more difficult to dial in the same sweet spots as on a pro-one

Ah interesting... I could try putting a log pot on that one to see if it would help some?

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oldenjon
Veteran Wiggler



Joined: 26 Feb 2012
Last Visit: 19 Apr 2019



Posts: 510
Location: Sacramento, CA

□ Posted: Sat Nov 10, 2018 11:53 am Post subject:

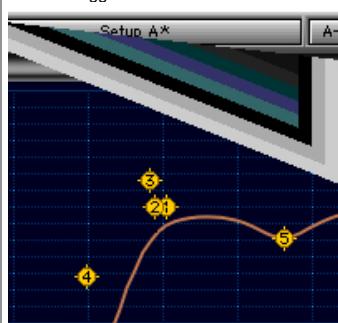
Why is this the pro 2021? Is that when it will actually be finished?

"68% of all statistics are made up on the spot"

<http://synthscaledbeasts.tumblr.com/>

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home_listening
Veteran Wiggler



Joined: 30 Dec 2011
Last Visit: 19 Mar 2019



Posts: 657
Location: locating

□ Posted: Sat Nov 10, 2018 6:15 pm Post subject:

Nice One!

Where are you sourcing the keybeds? I built my clone into a serge format module because of the difficulty getting my hands on them. I was in contact with Fatar and willing to order 50 pieces but they weren't having any of it.

Which slide switches is the board laid out for? I had trouble finding switches of a reasonably large size.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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□ Posted: Sat Nov 10, 2018 7:39 pm Post subject:

oldenjon wrote:

Why is this the pro 2021? Is that when it will actually be finished?

LOL! I just thought it would be cool since 2021 marks the 30th anniversary, and I think 2020 is a cool year, and the 1 is a head nod back to the Pro-One.

It will be finished MUCH quicker than that I promise 😊

devinw1
Veteran Wiggler

□ Posted: Sat Nov 10, 2018 7:41 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

home_listening wrote:

Nice One!

Where are you sourcing the keybeds? I built my clone into a serge format module because of the difficulty getting my hands on them. I was in contact with Fatar and willing to order 50 pieces but they weren't having any of it.

Which slide switches is the board laid out for? I had trouble finding switches of a reasonably large size.

Yes, it is not so easy to buy the Fatar keybeds. I can PM you some info.

As for the switches, I am using some from C&K switches, they are very similar to the size of the originals (big chunky mofo). I agree it is hard to find. Check their website, but I can put the PNs up later. They are a little under .5" tall off the board to the metal part, which was my goal as the whole PCB will be on .5" standoffs from the sheet metal panel.

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devinw1
Veteran Wiggler

Posted: Sat Nov 10, 2018 7:45 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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tobb
Veteran Wiggler

Posted: Sun Nov 11, 2018 3:35 pm Post subject:



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

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lasesentaysiete
Super Deluxe Wiggler

Posted: Sun Nov 11, 2018 4:01 pm Post subject:

devinw1 wrote:

since 2021 marks the 30th anniversary



40th?

<https://lasesentaysiete.com/>
https://www.instagram.com/la_sesenta_y_siete/
<https://notjazzrecords.bandcamp.com/>

Joined: 18 Feb 2016
Last Visit: 20 Apr 2019



Posts: 1258
Location: Barcelona

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devinw1
Veteran Wiggler



Posted: Sun Nov 11, 2018 5:21 pm Post subject:

lasesentaysiete wrote:

devinw1 wrote:

since 2021 marks the 30th anniversary

40th?

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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oldenjon
Veteran Wiggler



Posted: Sun Nov 11, 2018 11:01 pm Post subject:

Is this going to use CA3280 (or the upcoming AS3280) for the VCA like the original?

"68% of all statistics are made up on the spot"

<http://synthscaledbeasts.tumblr.com/>

Joined: 26 Feb 2012
Last Visit: 19 Apr 2019



Posts: 510
Location: Sacramento, CA

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devinw1
Veteran Wiggler



Posted: Mon Nov 12, 2018 12:35 am Post subject:

oldenjon wrote:

Is this going to use CA3280 (or the upcoming AS3280) for the VCA like the original?

Yes, I am using the CA3280. I have some good sources now that I can share, as well as some easy testing methods to determine if they are ok!

The one thing I need to do for the next revision is figure out something else for the glide circuit, since I'm currently having to use a 3280 for it too since the VCA and glide are on 2 separate boards in my design. The glide works great, but the 3280 is too precious and \$ (about \$10 a piece) to be wasting except on a prototype. I will change to a DIP CA3080 at a minimum (small bear has these), but will entertain all other possibilities and suggestions!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
 Veteran Wiggler

 Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR

 Posted: Mon Nov 12, 2018 10:05 am Post subject:

Small update:

Last night I verified with the O-scope that all these functions work:

- Glide
- Sequencer
- Arpeggiator

That about does it for Board A. Tonight I receive the remaining parts for Board B, but I will be busy with band practice. After that,

this week I should definitely have some SOUNDS to share with ya'll !

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Dan Lavin
 Learning to Wiggle

 Joined: 04 Sep 2014
 Last Visit: 18 Apr 2019

 Posts: 34
 Location: Spring Lake, Michigan USA

 Posted: Mon Nov 12, 2018 11:47 am Post subject:

My 2 cents on the CA3280:

It could be bad luck, but it seems like these things aged in dog years for me. I replaced the one on my Pro-1 at least twice...maybe 3 times. These weren't infant mortalities, they would work for a couple years before dying. Hopefully they're better made now? Well, word to the wise: socket those rascals!

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devinw1
 Veteran Wiggler

 Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR

 Posted: Mon Nov 12, 2018 12:15 pm Post subject:

Dan Lavin wrote:

My 2 cents on the CA3280:

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I socket EVERYTHING hahaha. With good Mill-Max ones too. Been burned so many times for not doing that, or using a cheapie single side wipe socket. Bah.

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devinw1
 Veteran Wiggler

 Posted: Tue Nov 13, 2018 12:42 am Post subject:

Well guys, I wanted to have a fully operating synth to show you tonight but I've been slowed a bit. Board B powers up just fine but I get nothing when I hit keys. When I switch to mode "drone" I hear what I think is a waveform for a second and then the fuse



blows!

My guess is I fucked something up on my ribbon cables from board A to board B, at least I hope so. When you switch to Drone, both the trigger and gate lines to the env chips (AS3310) are set to +5V, so I'm guess 5 is somehow getting dumped to ground either in the cable or on board B. Really hoping I didn't screw something big up on the board. Well, back to the lab to try and troubleshoot this

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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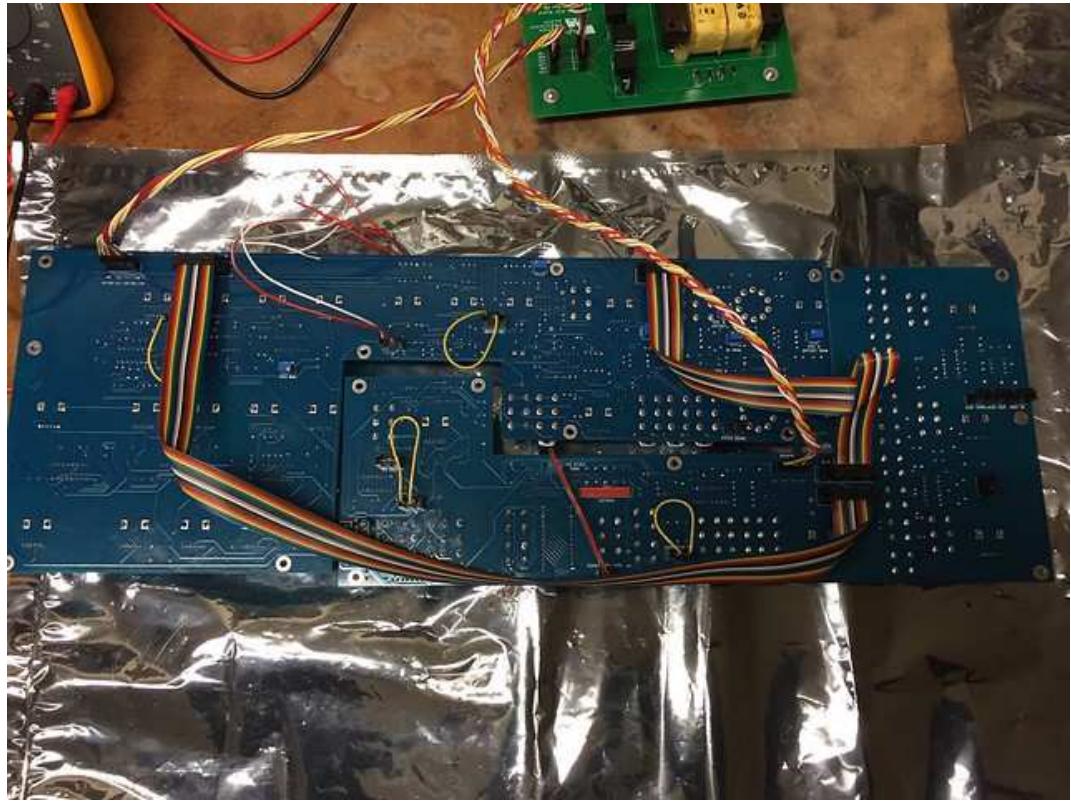
devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



And the backs of both boards connected with the 2 ribbon busses. Note the jumpers on a few of the molex connectors is because those go to jacks (Audio In, etc..), some of which are of the "shorting tip" type, so without them in place one must simulate those with jumpers for testing:



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devinw1
Veteran Wiggler

Posted: Wed Nov 14, 2018 12:09 am Post subject:

[quote](#) [ignore](#)

Well ya'll it's alive!! The bad ribbon cable was the culprit for the fuse blowing. Turns out it just got in there slightly shifted when crimping and shorted a bunch of the connectors! I re-connectorized it and we're off to the races. It seems to all work as it should, with just a couple of quirks I need to work out:



1) NEITHER of the octave switches work.... I think I have them rotated in there or something. Need to check the schematics and buzz out that weird rotary switch.

2) Envelope response is funky, but I had put some audio pots on the A, D, and S, thinking it would work better than stock, but it doesn't seem so. I'll try linear on there. The log pots on the mixer and volume are great though. That's gotta be better than the original P1 which had linear on everything.

3) I hear a bit of crackle/buzz in the audio sometimes. I think it might just be my janky audio jumper right now.

Here's proof it works:

[video]<https://youtu.be/v3akGeAoqt4>

<https://youtu.be/v3akGeAoqt4>

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Nov 14, 2018 1:57 am Post subject:

[quote](#) [ignore](#)

Awesome; well done!

I think I could get down with one of them, looks dead neat.

realitycontrol

Common Wiggler



Joined: 20 Oct 2015
Last Visit: 12 Apr 2019

Posts: 210

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Posted: Wed Nov 14, 2018 12:30 pm Post subject:

[quote](#) [ignore](#)

It's interesting, I just found this thread:

<https://www.muffwiggler.com/forum/viewtopic.php?t=126482&highlight=>

And I'm finding I'm agreeing with a lot of what Dr.EtchASketch said about the envelopes being very hard to dial in. Since this is a brand new build, I'm going to guess this is par for the course on the design, rather than a component issue (old pots, etc., which have been blamed as a possibility). I'm used to the Arp Odyssey which has very natural (IMO) envelop mapping. I'm looking at the schematics and it looks like SCI is trying to limit the Attack, for example to exactly 1 second. The 3310 can provide 20ms to 20seconds with the full range of -5V for A,D, and R. I think I will try some lower resistor values for A to start (1.8M on the schematic. Maybe I try 1M and 750k), and keep my audio taper pot in there and see how that fairs. That is, after I figure out the octave switch issue.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Getting close to done though!

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Posted: Wed Nov 14, 2018 2:35 pm Post subject:

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devinw1 wrote:

It's interesting, I just found this thread:



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

<https://www.muffwiggler.com/forum/viewtopic.php?t=126482&highlight=>

And I'm finding I'm agreeing with a lot of what Dr.EtchASketch said about the envelopes being very hard to dial in. Since this is a brand new build, I'm going to guess this is par for the course on the design, rather than a component issue (old pots, etc., which have been blamed as a possibility). I'm used to the Arp Odyssey which has very natural (IMO) envelop mapping.

Like you wrote, Dr. Sketch-n-Etch is quite true when he says that it takes a while (nearly half the pot course) before you feel drastic changes in the settings when you turn a knob (a bit like when you use a log pot instead of a linear). It's surprising at the beginning, but once you're used to it, it's not that bad as you can find some subtle sweet spots...

Indeed, the Pro-1's potentiometers range is nothing near a SH101 or several other synths. But, it's a bit "it's own thing". I'm less annoyed by the knobs behaviour than with the non compensated resonance on the filter, for instance.

I think that if you plan to make the knob's action more "linear", nobody would be annoyed. Even if it was made like that by design, it might be seen as an improvement imho 😊

<http://kragg.fr/>

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Nov 14, 2018 5:57 pm Post subject:

kragg wrote:

I think that if you plan to make the knob's action more "linear", nobody would be annoyed. Even if it was made like that by design, it might be seen as an improvement imho 😊

Cool, I think that it's better to make little improvements and minor changes than to make a true dead-on clone anyway (although, for most people's purposes, what I've done essential is such). 🎉

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Nov 14, 2018 9:41 pm Post subject:

Octave switches working! I missed one tiny little line on the schematic connecting pins 6 and 7 of the -1 volt buffer. Thank goodness that's an easy fix. Soldered 1 jumper from those adjacent pins and we're off to the races!

I tested all the modulation routings and all seems well there too.

The only remaining issue is both VCOs seems to blip down in frequency at random intervals as they are humming along. I tried moving my cell phone away and moving the boards but it didn't make much difference. I can change the pitch of each VCO by touching the resistors right next to the chip but I figure that is normal as I am adding some capacitance. But this is different, it almost seems like interference, but from what I do not know. I tried messing with the LFO and other frequencies but the blips seem to be random. Hmm. 🤔

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

devinw1
Veteran Wiggler

Posted: Wed Nov 14, 2018 11:58 pm Post subject:

OK, I figured out what the "blips" are... The 2 oscs are locking together and jumping in and out of lock when they are closely tuned. I just found this quite obvious when going through the tuning procedure. Fack.

I have heard of this happening before and I thought I was careful to not put ground loops in and separate the grounds from each VCO. Any ideas anyone? I can share the Kicad files or Gerbers if people want to look.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

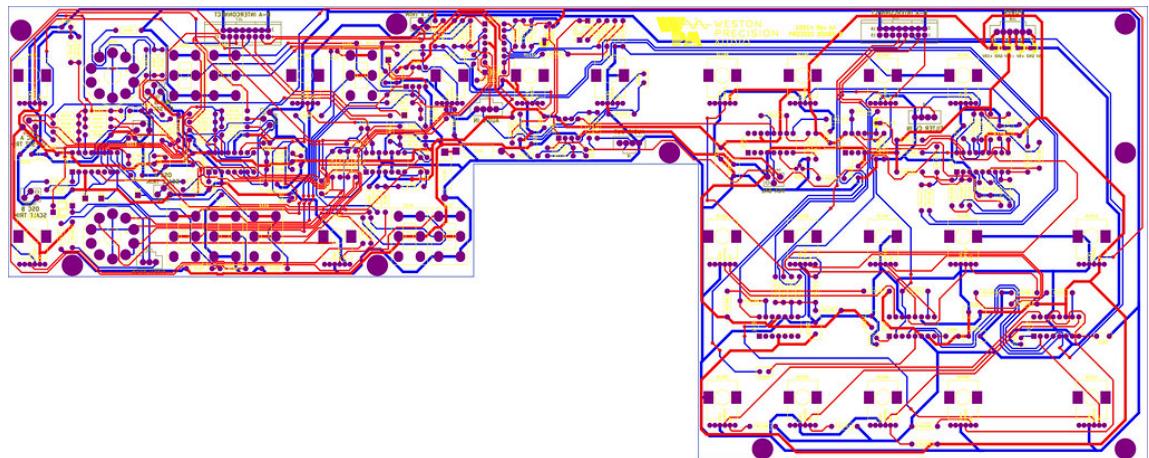
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Posted: Thu Nov 15, 2018 12:02 am Post subject:

Thanks Sunshine Jones!

Here is a pic of the layout on Board B, if anyone wants to have a look. I'm thinking about snipping the ground trace at the A-B interconnect (big blue trace on a bunch of the ribbon connector pins is ground)



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tobb
Veteran Wiggler

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devinw1 wrote:



I have heard of this happening before and I thought I was careful to not put ground loops in and separate the grounds from each VCO. Any ideas anyone? I can share the Kicad files or Gerbers if people want to look.

I am not an expert but i am sure the locking is not related to a gnd issue.

My advice is: redraw the whole board and put the whole circuitry of the two vco's each of them on a separate plug-in pcb.
or you can spend your whole life trying to debug this board.

Joined: 26 Nov 2011

Last Visit: 19 Apr 2019



Posts: 714

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f1ts

Super Deluxe Wiggler

Joined: 04 Mar 2008

Last Visit: 05 Jan 2019



Posts: 2984

Posted: Thu Nov 15, 2018 8:10 am Post subject:

One obvious solution would probably be to use separate modern voltage references for both of the VCOs. However, if you don't want to do a redesign or stray too far from the original circuit... Way before starting to redraw the whole board, I would pay attention to decoupling the power of VCO circuits in general.

What you're seeing / hearing is something bleeding through the power rails from one VCO to another. The major culprit can be eg. common impedance coupling because of how the PCB is routed (especially the 0V/power), a cheap switching power supply with not so good load regulation, or something else. If you don't want to measure and be methodological (which you may have to eventually do anyway), try eg. adding power rail bypass caps in close proximity of ICs if there aren't those everywhere already, use thicker traces for 0V returns (you can try how this affects the end result without endless board redesigns by soldering jumper wires in critical places I suppose!) and so on.

The routing / layout of power and 0V traces in general will naturally make a difference too, but it's pretty difficult to see from the image what goes where or to make any guesses without trying out things and measuring - at least with my skill level.

(And finally, if someone says I'm talking out of my ass and gives a good arguments / explanation why, it's best to believe him/her - I'm no EE, just trying to make suggestions according to best understanding and experience of a hobbyist...)

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devinw1

Veteran Wiggler



Posted: Thu Nov 15, 2018 9:48 am Post subject:

Thanks for the suggestions, guys. Interesting thing is, I have put the decoupling caps very close to where they live on the original board and they are basically right next to the ICs. In fact, a lot of the components, I tried to put in a similar spot as the original board. As for power, I am basically just using the SCI power supply (moved off of the board). It's just 4 linear voltage regulators, a transformer, and a diode bridge.

I may just end up taking tobb's suggestion and doing the VCOs as plug in boards TBH. Live and learn!

PS I too am not an EE either...learning the ways bit by bit. Ha!

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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tobb

Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler

[Post subject:](#)

On the Modal 008 synth the vco's also lock together at high pitch in unison, and they sold it like that!!! (just to tell you how difficult it is some times...)

Its 'less pro' but the radical approach is to make the vco's apart.

It will be faster to redraw the new boards then debug and redraw the actual layout (+each time the prototype costs), the only difference will just be a small increase in manufacturing cost.

[Post subject:](#)

Yeah...none of this stuff is easy! That's for sure. It's pretty cool to learn as I go, and frankly I'm pretty happy that really other than this issue it works 100% on the first pass, for a pretty complex board.

[Post subject:](#)

Also, back on that subject of the envelopes being squirrely... I'm beginning to think that the datasheet for the 3310 is just wrong. It states that for A, R, and D that:

"Zero to -5V varies the time from 20mS to 20s"

As I noted, SCI wired those 3 parameters up to go from zero to about -260mV, which, if you assume the time scale is linear, should get you 0 to 1s. In reality, you get 0 to reaaaaaaally long with just that amount, but it doesn't seem linear at all, there is a sweet spot where it seems to start working. That's what I'm seeing anyway. I tried a 1M resistor instead of 1.8M which takes you to about -450mV but didn't see much change. There's hardly really any extra circuitry around those chips, so I can't see what SCI did having much effect. It would be interesting to test these 3310s isolated and see if they actually do what they are supposed to do though.

Since I'm going to for sure be re-spinning board B, I'm seriously thinking of just putting a discrete ADSR circuit on there in place of the 3310s to get some smoother, more linear envelopes. How does everyone feel about that? Is that diverging from the Pro-One too much or no?

[Post subject:](#)

devinw1 wrote:

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Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

This may not be helpful (like at all,) but I recently built a few of Frequency Central's CEMvelopes, which are meant to be replicas of the Pro One ADSR section, and I found that the first time around, with just a casual build that the envelopes were very slow and strange.

It took a great deal of reworking and close attention to the connections, in far more vigorous a manner than I have been accustomed to in order to get the type of response which I would say the Pro One is known for.

But with discussion with Rick Holt, and some effort they came out really nicely in the end.

Rick doesn't publish his schematics, as far as I know, but he's a really great guy, and I wonder if a conversation with him might not shed a little light on the envelopes not being what they should be?

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Posted: Thu Nov 15, 2018 3:45 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Sunshine Jones wrote:

devinw1 wrote:

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Rick doesn't publish his schematics, as far as I know, but he's a really great guy, and I wonder if a conversation with him might not shed a little light on the envelopes not being what they should be?

Well, I do appreciate that and will probably fire him an email.

That being said, the envelopes section (and the entire page 2 of the schematic) are 1-to-1 copies of the SCI schematic on my board. I've checked and double checked and they are the same, I can assure you. So, that leaves the possibility of a mistake on

the schematic, which could be the case I guess! I only found 1 so far that made a big difference and it's on the transformer wiring. It's missing one leg and straight up won't function if wired the way the schematic shows.

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tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

Sunshine Jones wrote:

This may not be helpful (like at all,) but I recently built a few of Frequency Central's CEMvelopes, which are meant to be replicas of the Pro One ADSR section, and I found that the first time around, with just a casual build that the envelopes were very slow and strange.

Damn ,this is very bad news,i redrawn the Digosound 3310 in 4U format for the AS3310 but looks like these chips are not good replicas

I hope the AS3330 is ok...

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Well, I tried some things to get rid of the unwanted frequency locking, but to no avail:

- 1) Unplugged main ribbon cable to board A and let osc go on drone so as to isolate and make sure the modulation signals over the ribbon to/from A are the problem. No change, so the problem lives on board B.
- 2) Added 2.2uF bypass caps to power rails in parallel w the existing .1uFs.
- 3) Made sure bypass caps were right next to power pins. This was the case for 3 of 4, so I added another .1uF/2.2uF parallel combo on the -5V rail for OSC A.
- 4) Cut the -5V trace between OSC A and OSC B and ran a seperate wire for -5 for OSC A.

After all, that there is no change in the frequency locking.

So.....looks like full re-route coming to a theater near you. Shit.

This is pretty disheartening, but momma didn't raise no quitter. We shall prevail.

Question for tobb: If you were to re-route and put the VCOs on separate breakout boards, would you also run a power pigtail from the supply for each one? Or feed them from the board. Seems like the former would be safest.

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[!\[\]\(1757dcc5e2a0ecda207c65dadfd58991_img.jpg\) profile](#) [!\[\]\(e465c00f385dc03f1b06329f5e78bc60_img.jpg\) pm](#) [!\[\]\(e7ffdcdf1566aaf401de9e74e4723f04_img.jpg\) email](#)

[!\[\]\(4041166dc848642456548d7ee8ed8023_img.jpg\) quote](#) [!\[\]\(aa2316c6d468f926d536623b54704da4_img.jpg\) ignore](#)

tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

devinw1 wrote:

Well, I tried some things to get rid of the unwanted frequency locking, but to no avail:

Yes,its induction, and its not by moving a few traces or adding caps that you can get rid of it,its all guessing, that's why i told that you can spend your whole life on it...

devinw1 wrote:

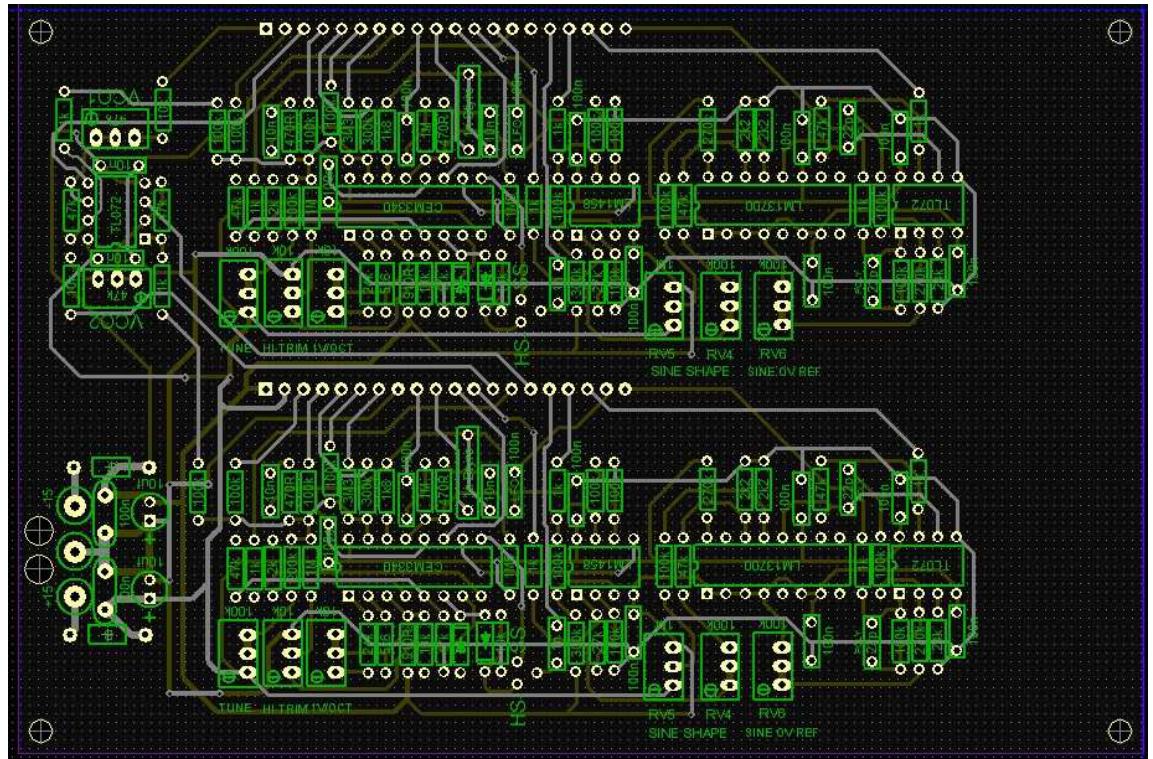
Question for tobb: If you were to re-route and put the VCOs on separate breakout boards, would you also run a power pigtail from the supply for each one? Or feed them from the board. Seems like the former would be safest.

One psu feed for both is fine ,you can put both vco's on one plug-in card in fact, what you have to take care is the layout of the vco circuit.

Draw them such way both are well separated (in U-form with PSU at the base) and that the layout of the components are well ordered with headers on the edges of the circuit/board that goes to the main board.

(Also take care how the traces goes to the panel components)

A bit like this (but you probably have less components):



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devinw1
Veteran Wiggler

Posted: Fri Nov 16, 2018 11:08 am Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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tobb
Veteran Wiggler

Posted: Fri Nov 16, 2018 5:27 pm Post subject:

Yes, try to use the whole top side of the main board only for all the vco routing/control so you can use the bottom layer for all other traces.

If you need extra passage lane on the top layer in between the two vco's control elements just flip one of the vco's 180 degrees so the header of each vco is at position of extreme edge of the plugin-board.



Joined: 26 Nov 2011

Last Visit: 19 Apr 2019



Posts: 714

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

Posted: Wed Nov 21, 2018 11:00 pm Post subject:

[quote](#) [ignore](#)

Making progress this holiday week! Got the VCO plugins routed and about 30% done routing the new B main board! I think this will be a winner, as I'm being REALLY careful to separate all OSCA signals from OSCB and keeping power clean. Hoping to order everything by Sunday if all goes well!

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tobb

Veteran Wiggler



Joined: 26 Nov 2011

Last Visit: 19 Apr 2019



Posts: 714

Posted: Thu Nov 22, 2018 7:10 am Post subject:

[quote](#) [ignore](#)



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devinw1

Veteran Wiggler

Posted: Mon Nov 26, 2018 1:55 pm Post subject:

[quote](#) [ignore](#)



New "B" board (calling it B-2 now) ordered and all parts ordered!



Should be stuffing it by late this week/saturday.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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pix

Veteran Wiggler



Joined: 31 Jul 2009
Last Visit: 20 Apr 2019

Posts: 588

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tobb

Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019

Posts: 714

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devinw1

Veteran Wiggler



tobb wrote:

devinw1 wrote:

New "B" board (calling it B-2 now) ordered and all parts ordered!



Should be stuffing it by late this week/saturday.

You are fast 

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Hehe. Mother in law was in town for thanksgiving all week. Had to "work from home" a lot. 😊😊

[profile](#) [pm](#) [email](#)

Posted: Tue Nov 27, 2018 12:31 pm Post subject:

[quote](#) [ignore](#)

I was playing with the AS3310 chips last night and breadboarded them up and looking at the output on the o-scope, and I must say they seem pretty well-behaved and do what they are supposed to do for the most part. I think a lot of the trouble I was having was that I was trying a log pot on some of the controls on the first B board, but the linear is better.

One thing I noticed is that the datasheet says that the A, D, and R parameters vary from 0 to 20 seconds with 0 to -5V feed to the dividers shown in the datasheet (which gives about 0 to -270mV to the chip in both the datasheet and the Pro-One implementation). I found that my chip I tested was more like 11 seconds on max Attack. I swapped the .039uF cap to a .10uF and it went to 33 seconds, so I'd imagine a .063uF or so would get you closer (on this particular chip anyway), and kind of nice to know it's easy to play with the time constants that way, if you so choose. Heck, maybe the tolerance control is looser on the AS chips vs the CEM and one needs to tune the cap in order to get consistent CEM-like performance? 🤔 I'm going to measure the 3310's output in situ on the board tonight and see how it looks, but I'm definitely sticking with them for the long haul on this synth, and have left all the original circuitry intact for the B2 reroute. I'll just use the linear 100K pots on all 8 envelope controls and go from there. 🎉

[profile](#) [pm](#) [email](#)

Posted: Mon Dec 03, 2018 2:41 pm Post subject:

[quote](#) [ignore](#)

So USPS completely screwed the pooch on my parts order so I ended up with boards from China in hand, and still waiting for parts from Texas... lol. In the meantime it allowed me time this weekend to play with my new fixtion: Arduino. Very cool stuff. I have some good projects in mind after I finish this.

The B-2 parts *should* be delivered to my house this evening, in which case I'll begin building up the new B-2 board. 🎉

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[profile](#) [pm](#) [email](#)

Posted: Thu Dec 06, 2018 12:33 am Post subject:

[quote](#) [ignore](#)

OK, all done stuffing the boards. 2 good news, and 1 bad news:

- 1) No magic smoke was released
- 2) The oscillator locking problem is GONE. Cheers to that. 🎉🎉

bad news:

- 1) VCO1 seems correct, but VCO2 is way high pitch. At octave "0" if a key makes 300Hz on VCO1 it makes 5KHz on VCO2. ~3 octaves off. 🙁

I've tried several things to narrow down the problem but would appreciate any pointers any of all might have.

What I tried:

- Swapped the VCO "cards" and the problem stayed on VCO2 ----> The problem lives on the main "B" board.
- Measured pins 1 and 14 of the LM348 Octave summers ----> Both work great. 0 volts at Octave 0, 1 volt at Octave 1, 2 at 2, and 3 at 3.
- Took out the VCOs and measured the summed CV on each... Here's where it gets different:
On my original B board, with octave at 0 on both VCOs and VCO2 on "normal", I get about 3.9V on the sum pin of the 3340 (pin

15).

On the new board I get about a volt difference between the 2 VCOs sum pins. Sooo... something is wonked, but even that 1V shouldn't make such a difference in what I'm hearing. I have about a 3 Octave spread between the 2. I'd say, by my ear, VCO1 is "normal", and VCO2 is 3 Octaves too high.

The one thing I don't fully understand is that I can't measure the CV sum in situ while the VCOs are in. I'm guessing because the chip has a exponential current source and I'm basically shorting this to some degree by introducing the volt meter?.. because I always see about 0V using this method. As soon as I pull the 3340 out, I can see a voltage.

OK, that's where I'm at now. Again, any input always appreciated. And, I think we are getting reeeeeallly close to a victory here.

Just to the home stretch! 

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tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

Posted: Thu Dec 06, 2018 4:52 am Post subject:

[quote](#) [ignore](#)

wrong component in the octave switching circuit?

Edit: oh,i see the summers are ok.

Probably error on the vco card then indeed,check components and all traces again

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Thu Dec 06, 2018 11:28 am Post subject:

[quote](#) [ignore](#)

tobb wrote:

wrong component in the octave switching circuit?

Edit: oh,i see the summers are ok.

Probably error on the vco card then indeed,check components and all traces again

No, I think the problem is on the board. I swapped the VCO cards and the problem stays on OSC B side of the main board, so the problem is not the VCO card. The plus side is that for troubleshooting, it's really cool to just be able to easily pull the cards on and off.

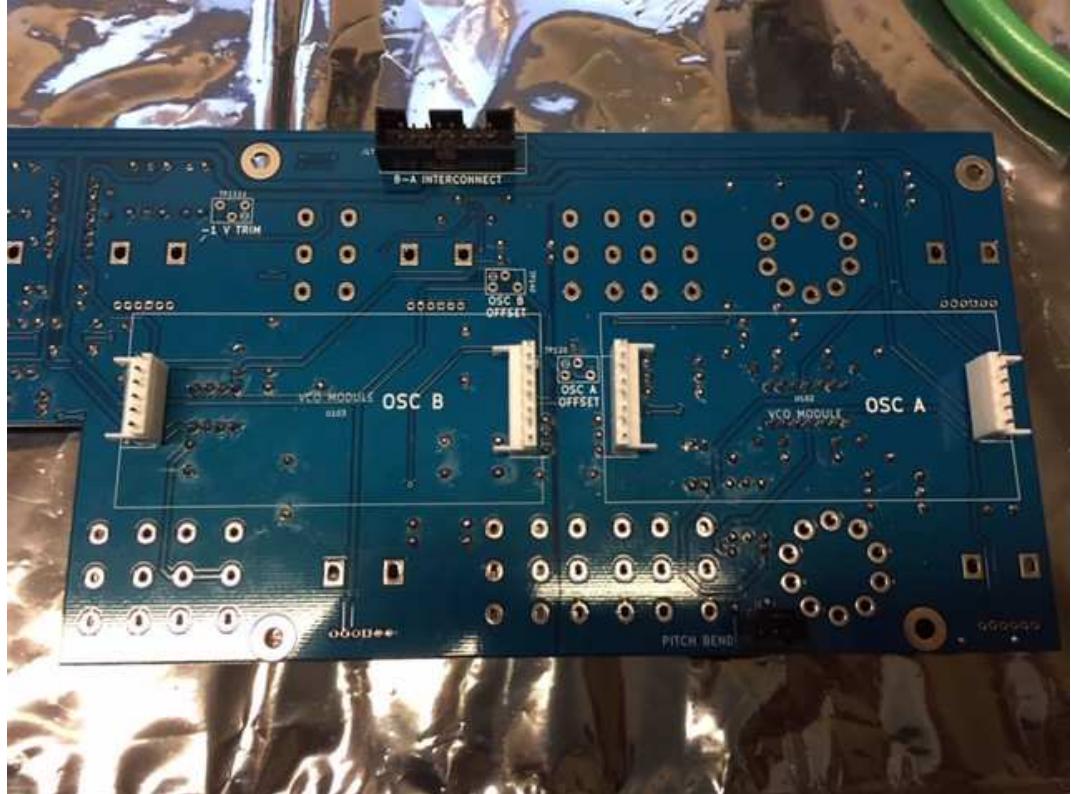
I'm going to get 2 more LM348s to stuff onto my old board so I can side-by-side buzz them out and see if I find anything odd. I'm sure I just screwed up a component somewhere in my rush to finish the board. 

In the mean time here's some pics of the boards.

Stuffed B-2 and VCOs w/o chips:



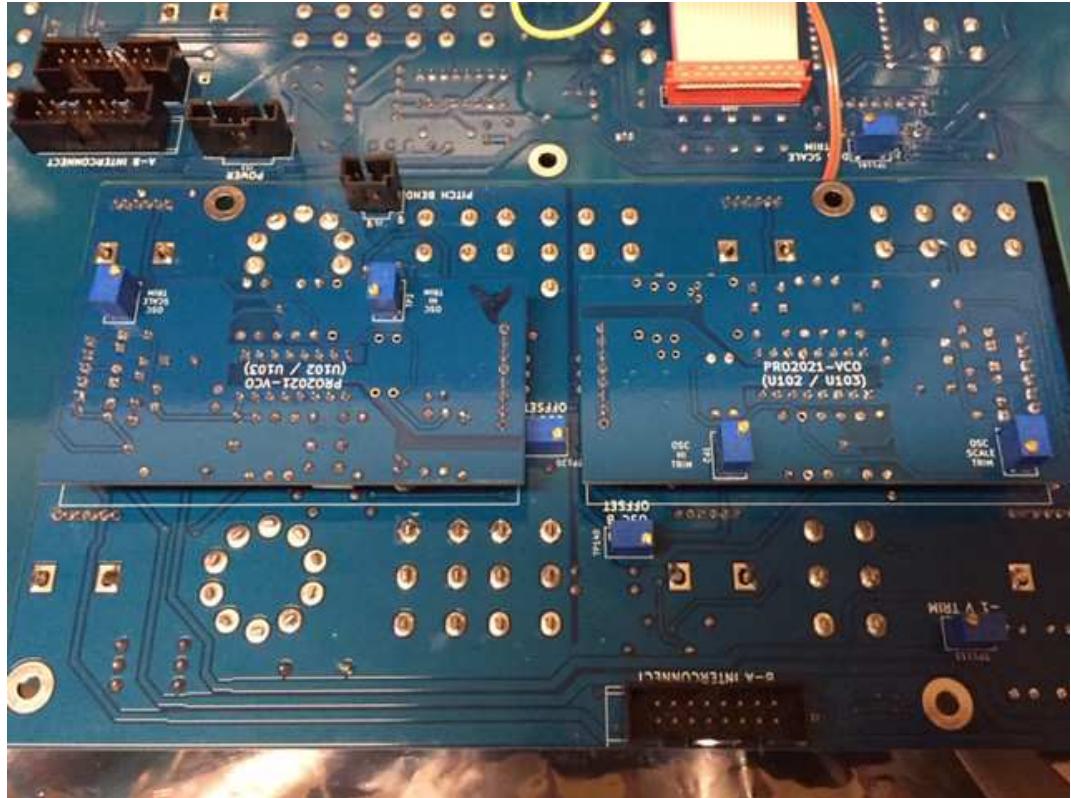
How the VCOs connect on the back (pre-flux cleaning 😊):



A VCO Card (they get stuffed slightly differently for A vs B due to the sync transistor and a couple of resistors associated with it):



VCOs plugged in:



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devinw1
Veteran Wiggler

Posted: Thu Dec 06, 2018 9:13 pm Post subject:

[quote](#) [ignore](#)

I FIXED THE VCO2 PROBLEM!!



I must have screwed my swap test up in my late night tired haze, becuase it was on the VCO board. R1212 on the CV input



divider is 820K on OSCB and 220K on OSCA... Missed that little thing! Put the 820K on OSCB instead of the 220K and boom we are good.



Going through the tuning procedure now. Electrically, we are there, kids!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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makhho

Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019

Posts: 124

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tobb

Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019

Posts: 714

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aabbcc

Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019

Posts: 275
Location: Sweden

devinw1 wrote:



I FIXED THE VCO2 PROBLEM!!

I must have screwed my swap test up in my late night tired haze, because it was on the VCO board. R1212 on the CV input divider is 820K on OSCB and 220K on OSCA... Missed that little thing! Put the 820K on OSCB instead of the 220K and boom we are good.



Going through the tuning procedure now. Electrically, we are there, kids!

Lol late night haze... I was troubleshooting a build that as soon as turned on started making just loud crackling noises, kept me woke the whole f* night and I could never find what the heck was wrong... Until the next morning when I checked the audio cable going to the mixer, it was literally hanging by a thread and causing all the issues 😂

Anyhow, this project looks amazing 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

aabbcc wrote:

devinw1 wrote:

I FIXED THE VCO2 PROBLEM!!



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Going through the tuning procedure now. Electrically, we are there, kids!

Lol late night haze... I was troubleshooting a build that as soon as turned on started making just loud crackling noises, kept me woke the whole f* night and I could never find what the heck was wrong... Until the next morning when I checked the audio cable going to the mixer, it was literally hanging by a thread and causing all the issues 😂

Anyhow, this project looks amazing 😊

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Thanks! And yes... I think we all know the feeling. I was trying to troubleshoot a dead filter on an Arp for 3 days straight. My wife was like what is wrong with you? I would go to bed thinking about the issue and wake up thinking of it (if I was actually sleeping).

It turned out that I put 100k trimmer pot in where a 10k should be. 😂 😂 😂

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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tobb wrote:

hehe,wrong component 😊

Looks like you did a great pcb design job! 😎

Thank you for the suggestions, sir! I took them into account, and also got pretty good with the fill zones tool. I used them for signal "shielding" on the top and also split ground planes on the back (which is 100% power). The whole process made me think WAY more smart about laying out the board and the product IMO is much cleaner and tidier than my first pass. 😊

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devinw1
Veteran Wiggler

Went through the tuning procedure tonight and she's all dialed in! Man, with the square and saw of both oscs turned on this thing sounds YUGE!! Like, gnarly cutting, fat, and huge! Here's a little video of my messing with settings with the onboard Sequence 2 playing. Sorry audio is just from my phone but I'll drag my computer into the shop tomorrow and get some real audio recordings!

<https://www.youtube.com/watch?v=hKhNnVhEcwc&feature=youtu.be>



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

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devinw1
Veteran Wiggler

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tobb wrote:

devinw1 wrote:

<https://www.youtube.com/watch?v=hKhNnVhEcwc&feature=youtu.be>



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Kewl! ,adsr's works great to!

Reso is very exponential VS CEM3320,but this is the AS chip.

Great job! 😊

Yep, the reso is the most surprising thing for me, but since it's all in the chip, I can only assume it's supposed to be that way haha! It's pretty exponential and also gets very "High-passy" really quick and then gets crazy loud and chirpy toward the last 1/3 of the travel. Very different from the 4023 filter on my Odyssey which is more mellow and 1/2-3/4 of the way up gets you into that classic envelope filter "wow" funky sound like Jerry Garcia's guitar tone. The AS3310...not so much. But, it is unique for sure.

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tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019

    
Posts: 714

Posted: Sat Dec 08, 2018 3:32 pm Post subject:

[quote](#) [ignore](#)

As Behringer is planning to release a Pro-One clone the logical way is that CoolAudio will make clones of the CEM3320 for these, if its the case and those chips are closer to the CEM3320 your clone can be updated with those chips later..

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Sun Dec 09, 2018 4:59 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

Indeed! EAsy peasy! And that's one of the many reasons I ALWAYS use DIP sockets 



BRILLIANT!

I must admit that the coolaudio idea is a really exciting one, and yet, I haven't heard anything yet which actually sounds wonderful. Not super delighted with the outcome, despite the well rated reproductions, and all the retooling work that the company has put into it.

That said, I have been exploring the SSI2144 clone with the daughterboard for through hole mounting and they sound really fantastic. From my cursory explorations it is very hard to tell the difference rotating within a Polysix.

So there really is hope for these replicants.

Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Sunshine Jones wrote:

devinw1 wrote:

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So there really is hope for these replicants.

Nice! I suppose it wouldn't be too hard to make an adapter card to run the SSI2144 on my board too! Hmmمم

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Sunshine Jones
Common Wiggler



Posted: Mon Dec 10, 2018 2:12 pm Post subject:

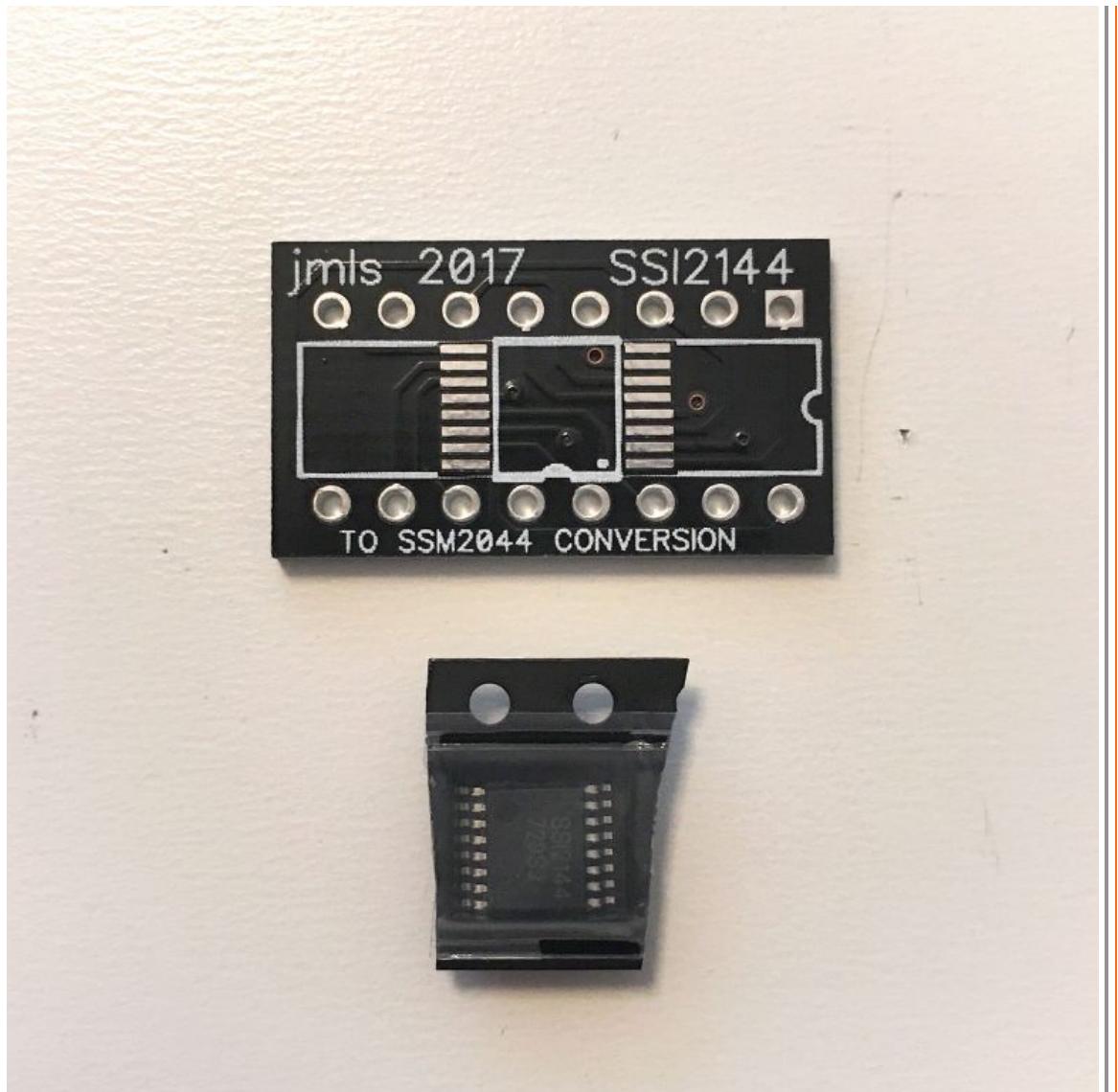
devinw1 wrote:

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Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco



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devinw1
Veteran Wiggler

Posted: Mon Dec 10, 2018 2:50 pm Post subject:

[quote](#) [ignore](#)

Sunshine Jones wrote:

devinw1 wrote:

Nice! I suppose it wouldn't be too hard to make an adapter card to run the SSI2144 on my board too! Hmmمم

It's true that the SSI2144 is a surface mount component, but the daughter board for them makes them plug and play. It's pretty fantastic.



[/img]

Oh nice!

Did you make that? Where can I get one?

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler

Posted: Mon Dec 10, 2018 2:55 pm Post subject:

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devinw1 wrote:

Oh nice!

Did you make that? Where can I get one?



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019

Posts: 155
Location: San Francisco

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devinw1
Veteran Wiggler

Posted: Mon Dec 10, 2018 4:34 pm Post subject:

[quote](#) [ignore](#)

Ohhh, I was thinking it was a 2144 to CEM3320. That would be more complicated, although doable I would think.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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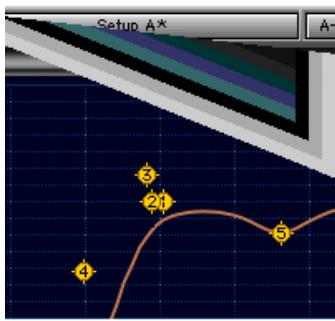
home_listening
Veteran Wiggler

Posted: Tue Dec 11, 2018 3:14 am Post subject:

[quote](#) [ignore](#)

Looking Great!

Instagram
Web



Joined: 30 Dec 2011
Last Visit: 19 Mar 2019



Posts: 657
Location: locating

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makhho
Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler

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Posted: Tue Dec 11, 2018 10:38 am Post subject:

Excited for this keyboard version of the pro1!

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[quote](#) [ignore](#)

Posted: Tue Dec 11, 2018 11:34 am Post subject:

I completed the prints for the sheet metal top and bottom and have sent out to quotes at a number of different shops, 3 in the US, 1 in Berlin, and 4 in China.

I'm hoping I can get a good deal, but I know these are not going to be super cheap. In my experience, low volume sheet metal with any kind of bends and processing is a bit pricey. We shall see!

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[quote](#) [ignore](#)

Posted: Thu Dec 13, 2018 5:00 am Post subject:

devinw1 wrote:

Ohhh, I was thinking it was a 2144 to CEM3320. That would be more complicated, although doable I would think.

Right, we were taking about the Behringer/Coolaudio clones seeming sort of underwhelming. I suppose I got carried away.

I've also worked with the AS3320 and AS3340 and they're really nice.
Drop in replacements.



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler

devinw1 wrote:

Some muckings about.. Disclaimer I didn't use a proper shielded cable from the synth board, it's just a couple lengths of wire into alligator clips, so that might add to the noise. I added a touch of reverb, maybe too much. Anyway, enough said:

<https://soundcloud.com/saywaht/pro2021-samples-1>

Beautiful...

Just out of selfish pleasure I've love to hear more of the growling bass, and envelope action... but I don't need to. Ready to build

and spread the word!



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Sunshine Jones wrote:

devinw1 wrote:

Some muckings about.. Disclaimer I didn't use a proper shielded cable from the synth board, it's just a couple lengths of wire into alligator clips, so that might add to the noise. I added a touch of reverb, maybe too much. Anyway, enough said:

<https://soundcloud.com/saywaht/pro2021-samples-1>

Beautiful...

Just out of selfish pleasure I've love to hear more of the growling bass, and envelope action... but I don't need to.
Ready to build and spread the word!

I'll see what I can do haha!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909
Super Deluxe Wiggler

[Post subject:](#)

^

Laser cut



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Purveyor2
Common Wiggler

Posted: Fri Dec 14, 2018 1:33 pm Post subject:

[quote](#) [ignore](#)

Joined: 04 Aug 2013
Last Visit: 20 Apr 2019



Posts: 187

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devinw1
Veteran Wiggler

Posted: Fri Dec 14, 2018 1:50 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Altitude909 wrote:

^
Laser cut

Well, except I need a blind pocket too...

Router.

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semperfirient
Super Deluxe Wiggler

Posted: Fri Dec 14, 2018 7:52 pm Post subject:

[quote](#) [ignore](#)

For woodwork, try cabinet makers (not machine shops).

Euro: Grayscale [FB + IG + SC + VM]

Buchla: 1979 [FB + IG]

Other: VCV Rack + Modular Shirts



Joined: 06 Oct 2010
Last Visit: 20 Apr 2019



Posts: 4069

Location: Republic of Cascadia

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devinw1
Veteran Wiggler

Posted: Fri Dec 14, 2018 8:16 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler

Posted: Sat Dec 15, 2018 12:57 am Post subject:



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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djs
Super Deluxe Wiggle

Joined: 01 Sep 2010
Last Visit: 20 Apr 2019



Posts: 1029
Location: South Beloit, IL

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[Post](#): Sat Dec 15, 2018 9:24 am Post subject:

[quote](#) [ignore](#)

This is shaping up nicely. What is your timeframe for getting something out there for sale? 😊

"Noise is what the Earth is made of" - David Bowie

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Boogie
Wiggling with Experience



Joined: 10 Nov 2016
Last Visit: 20 Apr 2019



Posts: 489
Location: Belgium

[Back to top](#)

[Post](#): Sat Dec 15, 2018 9:47 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

And, Sunshine Jones this one is for you:

<https://soundcloud.com/saywaht/pro2021-samples-2>

Sounds really nice 🎉

"Digital generated 'analog', is missing its analog soul and therefore isn't analog any more."

Jupiter 8 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=209322>

Minipops 7 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=199360>

ClapTrap clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=202248>

www.nabla-instruments.com

[profile](#) [pm](#)

makhho
Common Wiggle



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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[Post](#): Sat Dec 15, 2018 11:50 am Post subject:

[quote](#) [ignore](#)

Very exciting -- samples2 sounds fantastic.

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devinw1
Veteran Wiggle



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#): Sat Dec 15, 2018 2:02 pm Post subject:

[quote](#) [ignore](#)

djs wrote:

This is shaping up nicely. What is your timeframe for getting something out there for sale? 😊

Thanks for all the comments ya'll! 😊

As for timeline, it's always hard to guess how everything will play out, but February doesn't seem unreasonable at this point I think.

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synthpriest
Common Wiggle

[Post](#): Sat Dec 15, 2018 2:23 pm Post subject:

[quote](#) [ignore](#)

Joined: 24 Feb 2016
Last Visit: 03 Apr 2019



Posts: 130
Location: inside the machine

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Sounds very nice, keep it up! 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Sat Dec 15, 2018 4:06 pm Post subject:

[quote](#) [ignore](#)

Question: how important is it for people to have adjustable bender range? I have a octave dialed in now (which needed a 2x bigger resistor for some reason 190k vs 100k), but I wish I had thought to put a range adjuster pot on the board. Doh!

Anyway if it was fixed, what is a good range?

Edit: with simulation and testing I found I can use 15k resistors before the legs of the pitch pot, keep the 100k at the summing node, and then put a 1M pot after the pitch pot and get a range of about 1 half step to 1 octave, which seems like it should cover 99% of the bases. At this point, a hole will have to be drilled to add at that adjustment for the prototypes, but it can be added to the board for another spin. Or it can be left off and you'll just get an octave. Seem reasonable?

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Wed Dec 19, 2018 2:40 pm Post subject:

[quote](#) [ignore](#)

Small update:

I'm going to a wood shop in town tomorrow to drop off my Cherry wood plank to have the prototype end cheeks made. They are going to give me a shop tour too, which should be cool.

Sheet metal should be in the mail in a few days, so we are getting REALLY close on putting the whole thing together!

The other final thing I have to do is pick some knobs for the first proto. I had chosen a metal one from Eagle Plastic Devices (which is shown in the rendering in page 1 of this thread), BUT I just realized they are \$5 EACH on Mouser. Yowch! I just can't justify over \$100 in knobs so I need to find a new route, lol.

If anyone knows a source for cheap black aluminum knobs, let me know. They need to have a set screw that engages 180 degrees from the tick mark (into the flat), as that's how the pots are built.

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kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

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[Post](#) Posted: Wed Dec 19, 2018 3:01 pm Post subject:

[quote](#) [ignore](#)

Quote:

If anyone knows a source for cheap black aluminum knobs, let me know.

https://www.taydaelectronics.com/potentiometer-variable-resistors/knob_s-8689/knurled-aluminum-black-knob-2845.html ?

<http://kragg.fr/>

Joined: 15 Dec 2011
Last Visit: 18 Apr 2019

[profile](#) [pm](#) [email](#)

devinw1
Veteran Wiggler

[Post](#) Posted: Wed Dec 19, 2018 4:04 pm Post subject:

[quote](#) [ignore](#)

kragg wrote:

Quote:



If anyone knows a source for cheap black aluminum knobs, let me know.

<https://www.taydaelectronics.com/potentiometer-variable-resistors/knob-s-8689/knurled-aluminum-black-knob-2845.html> ?

Nice, thanks. I just noticed...Tayda is CHEAP on a lot of stuff! For example, the cheapest 1N4148 diode is .10 on Mouser, and .01 on Tayda. Dang.

Are they fast to ship and good to do business with?

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

[Back to top](#)

[Posted: Wed Dec 19, 2018 4:20 pm](#) [Post subject:](#)

devinw1 wrote:

Are they fast to ship and good to do business with?

Very fast, efficient and reliable 😊

I never had any faulty component, the shipping is tracked (and usually takes 10 days to arrive).
Also, if you need to contact the support, they give you a "real" answer, and they reply in 1 day.

<http://kragg.fr/>

Joined: 04 Aug 2013
Last Visit: 20 Apr 2019



Posts: 187

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[Posted: Wed Dec 19, 2018 4:40 pm](#) [Post subject:](#)

tayda is great, never had any issue.

Purveyor2
Common Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Posted: Wed Dec 19, 2018 4:55 pm](#) [Post subject:](#)

That's awesome. Wish their site was a little easier to use. AKA a drill-down parameter search vs. a huge page of a list of ALL the resistor values. Maybe it can be done and I just missed something though.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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JAO
Common Wiggler

[Posted: Wed Dec 19, 2018 5:39 pm](#) [Post subject:](#)

devinw1 wrote:

That's awesome. Wish their site was a little easier to use. AKA a drill-down parameter search vs. a huge page of a list of ALL



the resistor values. Maybe it can be done and I just missed something though.

There is only one manufacturer per component in most cases. Just use the search function and you will get a drop down. Simple once you know what you are looking for.

Joined: 06 Jan 2017
Last Visit: 20 Apr 2019



Posts: 199
Location: Ireland

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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[quote](#) [ignore](#)

kragg
Wiggling with Experience

Sunshine Jones wrote:

kragg wrote:

https://www.taydaelectronics.com/potentiometer-variable-resistors/knob_s-8689/knurled-aluminum-black-knob-2845.html ?

Score! The perfect knob!!!



Yes, It looks great and feels good to handle, but it is in aluminium, and weight a lot, compared to the plastic knobs of the Pro-One.

<http://kragg.fr/>

Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

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[quote](#) [ignore](#)

makhho

Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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[quote](#) [ignore](#)

kragg

Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

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[quote](#) [ignore](#)

Altitude909

Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan



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[!\[\]\(a3859c22c378670cd6224333e3c53990_img.jpg\) profile](#) [!\[\]\(9de4051abe032b2980a61a0294ba79b9_img.jpg\) pm](#) [!\[\]\(5d08b46d5cb5f65c819a7cdfe2b1554d_img.jpg\) email](#)

devinw1
Veteran Wiggler

Posted: Sun Dec 23, 2018 12:31 pm Post subject:

[!\[\]\(04174670108811f2fbba5bcdabcf46f4_img.jpg\) quote](#) [!\[\]\(502892882ea5f203802efa47ef25ff29_img.jpg\) ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[!\[\]\(27ef29dc8b4e394bb982c545d26a8abb_img.jpg\) profile](#) [!\[\]\(cfac7e32633daee881151c5e393af04e_img.jpg\) pm](#) [!\[\]\(4067a8b57ab0f95a548befd8da1a29d5_img.jpg\) email](#)

synthetek
Wiggling with Experience

Posted: Sun Dec 23, 2018 5:42 pm Post subject:

[!\[\]\(f4d73d5ca85d3128bb9d77083c11257c_img.jpg\) quote](#) [!\[\]\(bb76f00026ce7ea50f07a4657f3fdb5c_img.jpg\) ignore](#)

Altitude909 wrote:

I've used these for SCI replacements, REALLY close.

<https://www.mouser.com/ProductDetail/Eagle-Plastic-Devices/450-AE186?qs=sGAEpiMZZMuiwDVLTMm01cb1WSrgoM20VS0F62bE1Z0%3d>



Joined: 05 Jun 2015
Last Visit: 20 Apr 2019



Posts: 393
Location: Orange County, California



Do you know if the replacement knob caps would fit those? I got a set for my Prophet-5

<https://techsmechsvintagesynth.com/home/tm-1-prophet-knob-caps.html>

<https://www.instagram.com/synthetek/>

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Posted: Sun Dec 23, 2018 5:52 pm Post subject:

devinw1 wrote:

^cant tell from the datasheet but do those have a set screw/will they go on a Alpha D shaft plastic shaft pot?

T18 (only)



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969

Location: Meesheegan

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011

Last Visit: 20 Apr 2019



Posts: 2969

Location: Meesheegan

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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synthetek

Wiggling with Experience



Joined: 05 Jun 2015

Last Visit: 20 Apr 2019



Posts: 393

Location: Orange County, California

Altitude909 wrote:

Do you know if the replacement knob caps would fit those? I got a set for my Prophet-5
<https://techsmechsvintagesynth.com/home/tm-1-prophet-knob-caps.html>

synthetek wrote:

..
Do you know if the replacement knob caps would fit those? I got a set for my Prophet-5
<https://techsmechsvintagesynth.com/home/tm-1-prophet-knob-caps.html>

Cant say. The diameter of the upper part is 14.85mm if that helps

Altitude909 wrote:

devinw1 wrote:
^cant tell from the datasheet but do those have a set screw/will they go on a Alpha D shaft plastic shaft pot?
T18 (only)

Ahhh. Well shoot.

Altitude909 wrote:

Cant say. The diameter of the upper part is 14.85mm if that helps

I forgot that the Pro-1 knobs didn't have the caps just the prophet. I just found my spare pro-1 knobs , those mouser ones are pretty close.



<https://www.instagram.com/synthetek/>

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devinw1
Veteran Wiggler

Posted: Thu Jan 03, 2019 12:14 am Post subject:

[quote](#) [ignore](#)

Happy New Year, Wigglers!

Today Santa brought my sheet metal (a bit late), but it ya'll...it looks SO GOOD (also my lovely wife got me that sweet ass ESD grounded work mat for my shop 😊):



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



Here we are installing the keybed and the PSU board. So far so good.



As with every single thing I've designed in my mechanical engineering career, there are a couple tiny snags with the first batch, but nothing we can't fix! They are:

- 1) 2 of the end row of 12 holes to affix the keybed to the bottom are about .5mm off longitudinally. I'm not surprised as I hand measured the whole thing and went off a shitty DXF print with no dimensions scavenged from the web because Fatar won't share decent models of their stuff. All the other 10 holes lined up like buttuh. I just drilled the 2 of them out a bit and it was fine. Nothing anyone will ever see.
- 2) It seems the sheet metal shop did the classic mix up on the countersink holes and went 100 degrees instead of 82. I'm asking them now to be sure. What this means is that the 82 degree screws stick out a hair and they should be sub-flush. The GOOD NEWS is that I can buy 100 degree black 6-32 screws and have ordered them, so these parts are totally usable. I just HAVE to make sure the front screws are all (a) Black and (b) flush or sub-flush. I've used flat head screws + standoffs to mount the PCBs

to avoid using excess blind PEM studs, which would be better for production but not so economical for small volume protos.

Anyway, everything is looking super nice. I checked and all the switches and pots on the PCBs line up perfect, so we are nearly there.

Oh, also, the local shop I sent the first round of wood end cheeks said they should be done by Friday! Weeeeee!



Last edited by devinw1 on Thu Jan 03, 2019 11:11 am; edited 1 time in total

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makhh0
Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

Posted: Thu Jan 03, 2019 2:29 am Post subject:



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Sunshine Jones
Common Wiggler

Posted: Thu Jan 03, 2019 4:15 am Post subject:

WOW! Yes!!!!!!!!!!!!!!



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Purveyor2
Common Wiggler

Joined: 04 Aug 2013
Last Visit: 20 Apr 2019



Posts: 187

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Thu Jan 03, 2019 12:34 pm Post subject:

Very nice.

Posted: Thu Jan 03, 2019 3:14 pm Post subject:

loving this project

Posted: Fri Jan 04, 2019 12:40 am Post subject:

Question for those interested in a DIY kit: what would you think of making the pigtail harnesses that go from the PCBs via Molex minifit (I think) connector to the 1/8" CV ins and outs and the audio in and out?

The one downside I can see is you technically need the right Molex crimper tool, which are a total ripoff. I have access to many of them through my work so I never even thought of this being an issue. You could of course just hand crimp and solder the pins. And it would probably be fine.

The other option is I make all the harnesses as plug and play part of the kit. This will cost me more time and money but I'm not saying no to it. Just seeing where y'all are at with that. Beyond this, the kit will involve normal routine through hole soldering, basic mechanical assembly, and a bit of wood finishing (if you wish).

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fits

Super Deluxe Wiggle

Joined: 04 Mar 2008
Last Visit: 05 Jan 2019



Posts: 2984

Posted: Fri Jan 04, 2019 2:23 am Post subject:

FWIW, the Japanese "Engineer" brand crimping tools work like a champ and appear to make reliable crimps with most Molex, JST and other of sufficiently small size pins. I can't speak for MiniFit, but that might be one potential option between manual crimping & soldering and expensive official tool.

Edit: the ones I have seem to list Mini-Fit as something they have tested: <http://www.engineer.jp/en/products/pa21e.html> ... They are still roughly \$50 / EUR 50 with shipping, but as a bonus, one can then use crimp connectors without a second thought.

(Edit: full disclosure - I'm not an EE nor a mechanical engineer, never worked in hardware production, so "reliable crimps" = out of personal hobbyist experience and online "peer review")

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devinw1

Veteran Wiggle



Posted: Fri Jan 04, 2019 11:27 am Post subject:

fits wrote:

FWIW, the Japanese "Engineer" brand crimping tools work like a champ and appear to make reliable crimps with most Molex, JST and other of sufficiently small size pins. I can't speak for MiniFit, but that might be one potential option between manual crimping & soldering and expensive official tool.

Edit: the ones I have seem to list Mini-Fit as something they have tested: <http://www.engineer.jp/en/products/pa21e.html> ... They are still roughly \$50 / EUR 50 with shipping, but as a bonus, one can then use crimp connectors without a second thought.

(Edit: full disclosure - I'm not an EE nor a mechanical engineer, never worked in hardware production, so "reliable crimps" = out of personal hobbyist experience and online "peer review")

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Nice! That totally looks like it would work. You would have to just crimp the bare wire part and the insulation in 2 steps. The official molex crimper has a fancy die and precisely crimps the bare part and the insulation for the correct wire size in 1 go, but it's also (if I recall) like \$250 from Molex .

Thanks for that, fits.

BTW, the series I'm using for everything on this is the SL series:

<http://www.engineer.jp/en/products/pa21e.html>

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Sunshine Jones
Common Wiggle



Posted: Sat Jan 05, 2019 12:07 am Post subject:

devinw1 wrote:

The other option is I make all the harnesses as plug and play part of the kit. This will cost me more time and money but I'm not saying no to it.

It would be pretty sweet of you to include the harness with the kit.

It is more appropriate to have them made? I suppose that depends on how many kits you're planning to make.

I have never crimped a harness before, and I'm not saying I wouldn't try, but it would super rule if you offered them.

I wonder if it could be an option for extra \$?

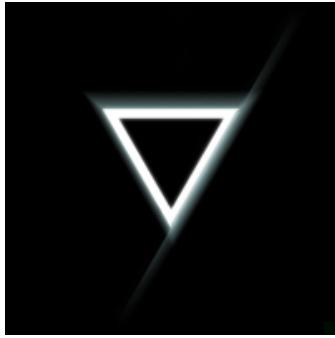
Joined: 02 Dec 2015
Last Visit: 20 Apr 2019

Posts: 155
Location: San Francisco

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Boogie
Wiggling with Experience

Posted: Sat Jan 05, 2019 1:37 am Post subject:



devinw1

Quote:

Today Santa brought my sheet metal (a bit late), but it ya'll...it looks SO GOOD

Looking very good !!

"Digital generated 'analog', is missing its analog soul and therefore isn't analog any more."

Jupiter 8 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=209322>

Minipops 7 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=199360>

ClapTrap clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=202248>

www.nabla-instruments.com

Joined: 10 Nov 2016

Last Visit: 20 Apr 2019



Posts: 489

Location: Belgium

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makhho

Common Wiggler



Joined: 05 Feb 2018

Last Visit: 20 Apr 2019



Posts: 124

[Back to top](#)

[profile](#) [pm](#)

[quote](#) [ignore](#)

groove

Common Wiggler



Posts: 213

Location: NY

devinw1 wrote:

Question for those interested in a DIY kit: what would you think of making the pigtail harnesses that go from the PCBs via Molex minifit (I think) connector to the 1/8" CV ins and outs and the audio in and out?

Do you mind posting a picture of the harness? I have a PA-21 and I think I'm fine to do it myself, but it might help to have a look first.

<http://loudshow.tumblr.com>

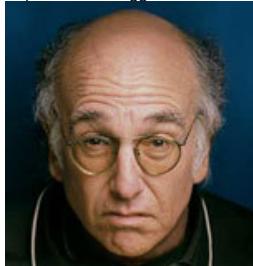
[Back to top](#)

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[quote](#) [ignore](#)

Isaiah

Super Deluxe Wiggler



Joined: 02 Jun 2010

Last Visit: 20 Apr 2019



Posts: 1798

devinw1

Great work!

Is there some text missing in the Modulation section for the sources/destinations?

Synthcurious.com

"Synthcurious" on Instagram and Facebook

[Back to top](#) [profile](#) [pm](#) [email](#) [www](#)**devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Jan 05, 2019 11:49 pm Post subject:

[quote](#) [ignore](#)**Isaiah wrote:****devinw1**
Great work!

Is there some text missing in the Modulation section for the sources/destinations?

OOF! Yes! It seems I am missing the descriptors of the "from" and "to" locations. I just looked and apparently I had these somehow suppressed in solidworks even as far back as the original rendering you can see on page 1. Thanks for noticing this!!

This will be a little tricky to fix with the 5 sets of sheet metal protos I bought. If it was just the 1 for me, I would probably just have clear or black labels made for the missing text and go with that, but since I am going to be selling the remaining 4 proto sets in some form, I will have to I guess look at getting the missing text etched after the fact. I know a laser guy in town who can probably do this, and will get on it.

Again, thanks for pointing this out. I feel like an absolute idiot for missing this, but, this project has been a TON of work that is just in my free time, so I guess I can't beat myself up too much. Still... bah... so frustrating.

[Back to top](#) [profile](#) [pm](#) [email](#)**devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

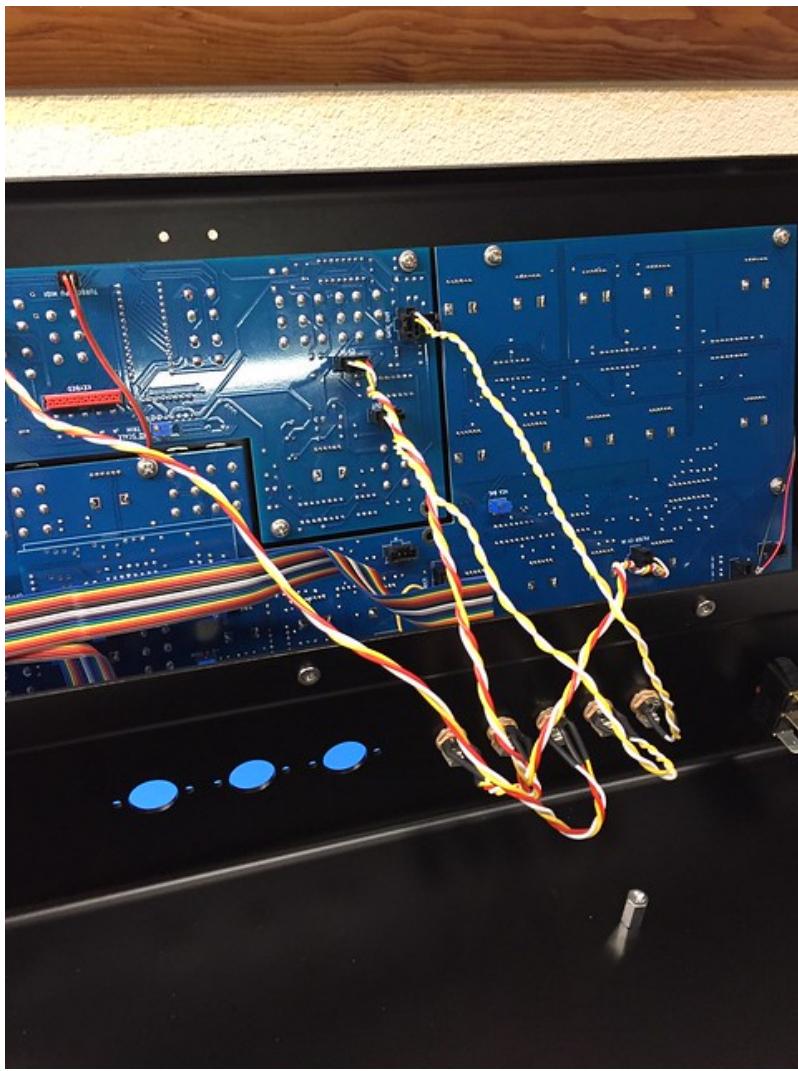
Posted: Sat Jan 05, 2019 11:51 pm Post subject:

[quote](#) [ignore](#)**groove wrote:****devinw1 wrote:**

Question for those interested in a DIY kit: what would you think of making the pigtail harnesses that go from the PCBs via Molex minifit (I think) connector to the 1/8" CV ins and outs and the audio in and out?

Do you mind posting a picture of the harness? I have a PA-21 and I think I'm fine to do it myself, but it might help to have a look first.

I'll try and get detail pics (and of course would for DIY assembly documentation), but here is a look of all the CV harnesses I made. The audio and midi ones will be similar, only will of course use shielded cable instead of just regular stranded. Its just a bit of soldering on the connector end, and some heat shrink, twist the wires, and then crimp-and-poke the Molex pins on the other end.



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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Jan 05, 2019 11:59 pm Post subject:

Sunshine Jones wrote:

devinw1 wrote:

The other option is I make all the harnesses as plug and play part of the kit. This will cost me more time and money but I'm not saying no to it.

It would be pretty sweet of you to include the harness with the kit.

It is more appropriate to have them made? I suppose that depends on how many kits you're planning to make.

I have never crimped a harness before, and I'm not saying I wouldn't try, but it would super rule if you offered them.

I wonder if it could be an option for extra \$?

Hehe... that is the grand question! I suppose it is getting quite close to getting an actual interest list so I can figure out how many people want to buy a kit, as this will influence all of the costing on these things. I was waiting until I had the first alpha unit 100% done, but certainly at this point, if everyone could chime in and say:

- A) Are you seriously interested in purchasing a DIY kit for this synth
- B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?
- C) Any other questions/concerns?

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synthetek
Wiggling with Experience



Joined: 05 Jun 2015
Last Visit: 20 Apr 2019



Posts: 393
Location: Orange County, California

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[Post](#) Posted: Sun Jan 06, 2019 2:31 am Post subject:

[quote](#) [ignore](#)

I am very interested. I don't need a premade harness, I have the tools to make my own.

<https://www.instagram.com/synthetek/>

aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

[Post](#) Posted: Sun Jan 06, 2019 8:06 am Post subject:

[quote](#) [ignore](#)

A) Are you seriously interested in purchasing a DIY kit for this synth
YES!

B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?
If the footprint for the molex adaptors can accomade mta connectors then no, otherwise it would be nice with pre-made harness sine I don't feel like I will be using a crimp tool that much

C) Any other questions/concerns?
[b]Do you have a guesstimate for the cost f the kit+bom? Will it be offered as a desktop module without keyboard?/b]

Last edited by aabbcc on Sun Jan 06, 2019 9:05 am; edited 1 time in total

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

[Back to top](#)

[Post](#) Posted: Sun Jan 06, 2019 8:32 am Post subject:

[quote](#) [ignore](#)

A) Are you seriously interested in purchasing a DIY kit for this synth

Yes, Partial or otherwise. In fact, PCB/Case/any other unique item is preferred.

B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?

No.

C) Any other questions/concerns? **Keybed availability**

Joined: 04 Aug 2013
Last Visit: 20 Apr 2019



Posts: 187

[profile](#) [pm](#) [email](#)

Purveyor2
Common Wiggler

[Post](#) Posted: Sun Jan 06, 2019 9:50 am Post subject:

[quote](#) [ignore](#)

A) Are you seriously interested in purchasing a DIY kit for this synth

Yes, Partial or otherwise. In fact, PCB/Case/any other unique item is preferred.

B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?

No.

C) Any other questions/concerns? **Keybed availability**

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kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

Posted: Sun Jan 06, 2019 12:54 pm Post subject:

devinw1 wrote:

C) Any other questions/concerns?

Do you have any plan to release a desktop version as well ?(1-this should make the overall price significantly cheaper... 2-as well as the shipping costs, and 3-i already have plenty of keyboards, therefore space is a concern and i would get a desktop version over a keyboard version.

devinw1 wrote:

A) Are you seriously interested in purchasing a DIY kit for this synth

Yes, depending on the price, and the availability (or not) of a desktop version.

devinw1 wrote:

B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?

no.

<http://kragg.fr/>

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ashleym
Veteran Wiggler

Joined: 22 Oct 2009
Last Visit: 18 Apr 2019



Posts: 526

Posted: Sun Jan 06, 2019 1:53 pm Post subject:

f1ts wrote:

FWIW, the Japanese "Engineer" brand crimping tools work like a champ and appear to make reliable crimps with most Molex, JST and other of sufficient

(Edit: full disclosure - I'm not an EE nor a mechanical engineer, never worked in hardware production, so "reliable crimps" = out of personal hobbyist experience and online "peer review")

Crimps are great. I used expensive tools for "cold welding" BFA plugs with complete reliability.

Another +1 for Engineer crimpers. I have a pair and they are lovely tools. I use their pliers as a lower cost but pretty much as good as Lindstroms

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devinw1
Veteran Wiggler



Posted: Sun Jan 06, 2019 2:27 pm Post subject:

Updated kit interest list:

synthtek
aabccc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Now to answer some of the questions:

Will there be a desktop version?

As i've said from the beginning, I would rather not go this route. There are a few reasons. 1) Yes I know it's not DIY, but Beringer is releasing this exact thing for \$200. 2) Muff user home_listening did actually develop a eurorak Pro-One clone with the keybed/cpu removed, so again it seems a bit like I'd be re-inventing the wheel. 3) While the cost of the keybed and TurboCPU have been removed, there will still be time in engineering the enclosure and the parts costs will be volume dependent just like the KB version. I haven't done any of this work yet either 😊.

MTA connectors for the board-to-wire stuff?

I think pretty much any connector with a .10" pitch and pins which can go into a .043" TH will work, so long as they don't have a ridiculously huge footprint. There is plenty of room in general for the board-to-wire conns, as they are on the back of the PCB.

Keybed availability?

This is indeed a concern. I know Fatar is making these keybeds, it's just getting them to sell them is the hard part. I have a plan to try and contact them by phone, as they don't seem to answer emails. It may be that a group buy is necessary.

Kit cost guestimate?

I'm working on this now and will have it soon.

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makhho

Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019

Posts: 124

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A) Yes

B) Depending on price, maybe

C) N/A

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kragg

Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019

Posts: 404
Location: Nemo Point

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devinw1 wrote:

Will there be a desktop version?

As i've said from the beginning, I would rather not go this route. There are a few reasons. 1) Yes I know it's not DIY, but Behringer is releasing this exact thing for \$200. 2) Muff user home_listening did actually develop a eurorack Pro-One clone with the keybed/cpu removed, so again it seems a bit like I'd be re-inventing the wheel. 3) While the cost of the keybed and TurboCPU have been removed, there will still be time in engineering the enclosure and the parts costs will be volume dependent just like the KB version. I haven't done any of this work yet either 😊.

I understand your point of view. In fact, I already have a Pro-1, and i am very happy with it. But i am doing live gigs, rehearsals, and while i enjoy the Pro1 sound, i don't want to travel a lot with that big old synth, so i am looking for a travel-friendly alternative. I haven't considered Eurorack, and i would rather prefer to avoid Behringer if possible (also, who knows when will it be alive... if the project come to life at all). I have looked at the Toraiz AS1, but there are too few knobs, and, to me, the Korg Arp Odyssey Desktop version has the perfect form factor (smaller footprint to be travel-friendly, but bigger than a Boutique to be played on dark stages)... but not the same sound.

So a desktop version of the Pro-One might be a perfect match for musicians looking for a portable solution with a great sound 😊
(And, from a "wallet friendly" point of view -and while i don't know the guestimate price for this kit-, i suspect that a keybed + the enclosure parts for the keys would play a significant role in the total price. So, having the option to choose between two versions might be a big plus for me)

<http://kragg.fr/>

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groove
Common Wiggler

Joined: 19 Jul 2013
Last Visit: 18 Apr 2019

Posts: 213
Location: NY

devinw1 wrote:

A) Are you seriously interested in purchasing a DIY kit for this synth
B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?
C) Any other questions/concerns?

A) Interested

B) No, I'd make my own harnesses

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Jannel

Wiggling with Experience

Joined: 19 Oct 2015

Last Visit: 20 Apr 2019



Posts: 257

□ Posted: Sun Jan 06, 2019 4:28 pm Post subject:



I'd love to build this keyboard version, depending on price of course. Single Fatar keybeds can easily be bought from newgroove.it, I've bought five 3-octave keybeds already, no complaints.

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devinw1

Veteran Wiggler



□ Posted: Sun Jan 06, 2019 4:43 pm Post subject:



Jannel wrote:

I'd love to build this keyboard version, depending on price of course. Single Fatar keybeds can easily be bought from newgroove.it, I've bought five 3-octave keybeds already, no complaints.

Holy shit man you're a genius!! They have them for only 60 euro too! Unbelievable



Well folks, there's your Fatar source ..

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Grooverman

Learning to Wiggle

Joined: 16 Jul 2013

Last Visit: 20 Apr 2019



Posts: 22

□ Posted: Sun Jan 06, 2019 4:47 pm Post subject:

A) I'm interested in building one. Contrary to a couple of others I'd rather see a full kit with all or as many parts as possible (I'm not a pro or semipro builder so sourcing components from different suppliers cost a lot in freight and also higher prices for small volumes...maybe Synthcube for instance can provide a full kit for this?)

B) I can make the harness myself...but I find working with cabling to be rather boring, especially since I don't have the proper tools...so I'd rather pay a few bucks to get a pro job.

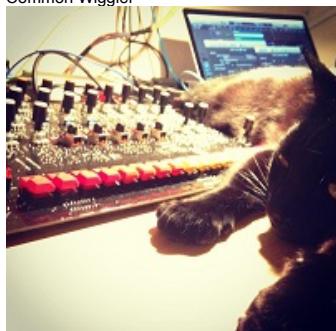
C) same concerns as others about availability of the keybed...but for me the keyboard is a big plus especially if it will have cv/gate in and out to be able to control a eurosystm or similar...(so sourcing of keybed seems solved...what about cv/gate then?)

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FactoryDefault

Common Wiggler



□ Posted: Sun Jan 06, 2019 7:39 pm Post subject:

A) Are you seriously interested in purchasing a DIY kit for this synth
YES! (depending on cost)

B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?
I don't need pre-made harnesses - I have access to crimping tools.

C) Any other questions/concerns?
Can't wait to build this!

Joined: 29 Mar 2016

Last Visit: 20 Apr 2019



Posts: 90

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devinw1

Veteran Wiggler



Updated kit interest list:

synthtek
aabcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Answers to latest questions:

CV/Gate in?

Yes, it has all of the same ins and outs as the original Pro-One: CV in/out, Gate in/out, and FilterCV in. These are all set up to use 1/8" jacks, but you could certainly drill out the case for 1/4" if you wanted.

Also, new info re keybeds: In addition to Newgroove.it being a potential good source, I have talked to the fellow who runs TechMechs Vintage Synth and he said he is more than willing to sell anyone in the DIY community a keybed+ribbon cable. He buys them in the minimum lot (which I found out is a pallet of 20-30 depending on Fatar's mood), so his price is a little higher than Newgroove (120 euro), but he's a good guy. I bought mine from him.

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MrRoper
Common Wiggler



Joined: 28 Nov 2014
Last Visit: 05 Apr 2019

Posts: 147
Location: London

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Posted: Mon Jan 07, 2019 6:54 am Post subject:

Interested in building one of these. Wouldn't need harnesses made either.

Joined: 07 Aug 2016
Last Visit: 20 Apr 2019

Posts: 36
Location: Glasgow

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Posted: Mon Jan 07, 2019 6:55 am Post subject:

- A) Yes.
- B) No, I have a crimping tool
- C) Custom case / open-source case plans? (I'd like to repurpose a broken 49 key controller as a keybed, but that would require a longer chassis).

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

Posted: Mon Jan 07, 2019 6:59 am Post subject:

I would suggest that we'll do a proper BOM (&mouser cart) and document the wiring well, and that will be good enough.

Groupbuy's for the cems (EU and US separate?) and maybe ship all the hardware (metal enclosure-panel and wood sides) from US to EU as a single shipment and sort it out from there (if someone accepts to be "EU HUB" -person). Keyboard is only 60e (+shipping) here in EU, so that should be separate for EU/US too. PCB's aren't that expensive to ship, so whatever.

If it's going to be a complete kit (all-in) only and ship from US to EU, I think it's going to be pretty expensive with customs, VAT and shipment fees. I'll build it if it's <1000eur in total, not sure if it's more like 2000eur total.

(Behringer gives the same sound for 300usd so...let's be realistic at the same time, even though this sdiy is a passion, hobby, "must-build-them-all" -madness :-)

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[!\[\]\(ef55ad3a626d68b7432aed2524360a11_img.jpg\) quote](#) [!\[\]\(2dee508335514f9072766129404c6191_img.jpg\) ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Jannel wrote:

I would suggest that we'll do a proper BOM (&mouser cart) and document the wiring well, and that will be good enough.

Groupbuy's for the cems (EU and US separate?) and maybe ship all the hardware (metal enclosure-panel and wood sides) from US to EU as a single shipment and sort it out from there (if someone accepts to be "EU HUB" -person). Keyboard is only 60e (+shipping) here in EU, so that should be separate for EU/US too. PCB's aren't that expensive to ship, so whatever.

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(Behringer gives the same sound for 300usd so...let's be realistic at the same time, even though this sdiy is a passion, hobby, "must-build-them-all" -madness :-)

That is a good idea about having an EU shipping hub, as it seems there are a lot of EU people on this forum. The sheet metal and ends are a bit bulky too, although lightweight (though for international, volume is probably more important than weight due to air travel). Is there anyone on here who would be interested in handling this job?

Updated kit interest list:

synthtek
aabccc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhoh
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban

Csaban, no plans for additional enclosures, but open source is definitely possible.

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[!\[\]\(4337545ceebd903ff68f13b227059d4c_img.jpg\) quote](#) [!\[\]\(0c228f6fc26575f11e33b0f00e942e33_img.jpg\) ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

One final issue I've been putting off dealing with is the pitch bend and mod assembly. For the prototype I ended up using units from a Yammy DX-7 because they were easy and cheap to obtain from Ebay. I'd LOVE to be able to spec some type of generic OEM unit, but I've had ZERO luck finding such a thing. I even made a thread about it a while back and nobody had many ideas. So, I'm just asking again if anyone here knows of such a thing.

I'm 100% down to design my own mechanics and make the whole assembly, BUT nobody seems to sell 90degree throw pots, which I believe is about the range you need. For the pitch bend, one could get away with just using a limited range of a standard 300 degree pot, but for the mod, you need the full throw of the wiper, so the short-throw pot is indeed necessary.

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Jannel
Wiggling with Experience

 Posted: Mon Jan 07, 2019 12:10 pm Post subject:

 quote  ignore

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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devinw1 wrote:

One final issue I've been putting off dealing with is the pitch bend and mod assembly...

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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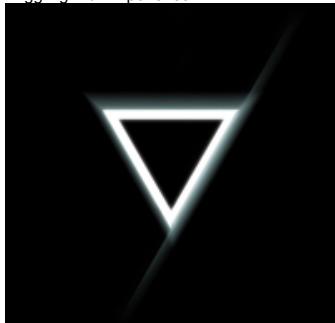
Grooverman
Learning to Wiggle



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Boogie



Joined: 10 Nov 2016
Last Visit: 20 Apr 2019



 Posts: 489
Location: Belgium

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devinw1
Veteran Wiggler

Posted: Mon, Jan 07, 2018 1:16 pm Post subject:

59 quote ignore

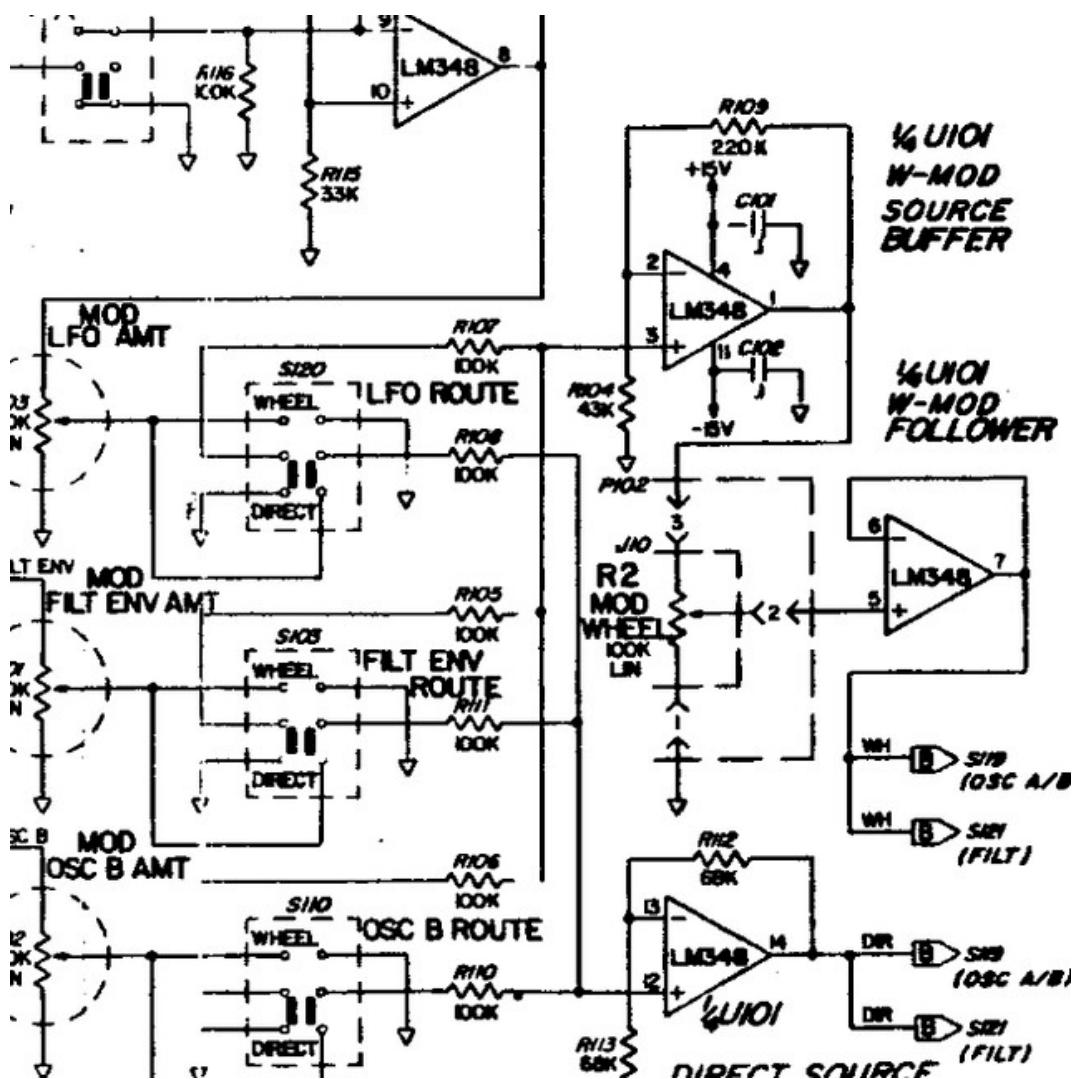
Grooverman wrote:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

That is sweet, of course it has the same issue if I were to build my own (they are using a standard pot and limitiing rotation).

After lookingat the schematic, i think I could insert 2 resistors on the Modulation follower op amp (U101) to change the gain from 1 to (300/90=3.33), and this would work, but would require a change on the board :(.



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Posted: Mon Jan 07, 2019 1:22 pm Post subject:

[quote](#) [ignore](#)

devinw1

Quote:

to change the gain from 1 to (300/90=3.33)

if that's all you would need, then changing the 43k resistor to **edited** 12.9k or 13k **end edit** will do the job without modifying the layout

If you need some offset to be added or subtracted, that can be done by adding 1 extra resistor on the negative input of U101 to the positive supply for negative offset or to the negative supply for positive offset.

added of course you have to make sure not to saturate the opamp.

If so, you indead have to use the follower as an amplifier.



Joined: 10 Nov 2016
Last Visit: 20 Apr 2019



Posts: 489
Location: Belgium

"Digital generated 'analog', is missing its analog soul and therefore isn't analog any more."

Jupiter 8 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=209322>

Minipops 7 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=199360>

ClapTrap clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=202248>
www.nabla-instruments.com

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Mon Jan 07, 2019 1:32 pm Post subject:

Boogie wrote:

devinw1

Quote:

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If you need some offset to be added or subtracted, that can be done by adding 1 extra resistor on the negative input of U101 to the positive supply for negative offset or to the negative supply for positive offset.

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Nice! I didn't even think to just change that one. Thanks!

I will get working on a new design for a pitch/mod wheel assembly for the kit.

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Mon Jan 07, 2019 3:59 pm Post subject:

Also, a pic from the Alpha prototype build from last night. All power supply/voltage selector/lighted power switch/fuse wiring done. Yes I'm slow, but I like my wiring all tidy and heat shrunk:



[Back to top](#) **devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Tue Jan 08, 2019 12:27 am Post subject:

Finished the wiring on the alpha unit tonight and put it together with the bare cherry end cheeks to test the MIDI out jack (it works!). I didn't put any knobs on except the grey one you see... this is one I'm thinking about using for mine. What do you think? Either all grey, or all black except a grey one for master volume and tune?

Anyhow, I'm so happy how it looks and came together. Honestly this is the coolest looking thing I've built in my 12 years doing mechanical engineering. Maybe it's just because I love keyboards so much. I dunno. It's also the first time I've had the PRO2021 plugged into a real keyboard amp and my god it sounds so good and fat that I almost cried. I really just wanted to play it all night, lol, but alas I have to take it apart as I'm taking the 5 proto sheet metal tops to the laser etcher to get the missing text fixed.

Finally, astute viewers might notice that there are 2 jacks labeled "CV Out", and one of them is really CV In. Poop. Another little glitch with the first round of sheet metal. I'm going to just put a little black label with the "CV In" over this with the correct font and I think nobody will be the wiser, and fix it on the next round of course.

OK, pics:





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[Posted: Tue Jan 08, 2019 3:50 am](#) [Post subject:](#)

[quote](#) [ignore](#)

aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019

Posts: 275
Location: Sweden

devinw1 wrote:

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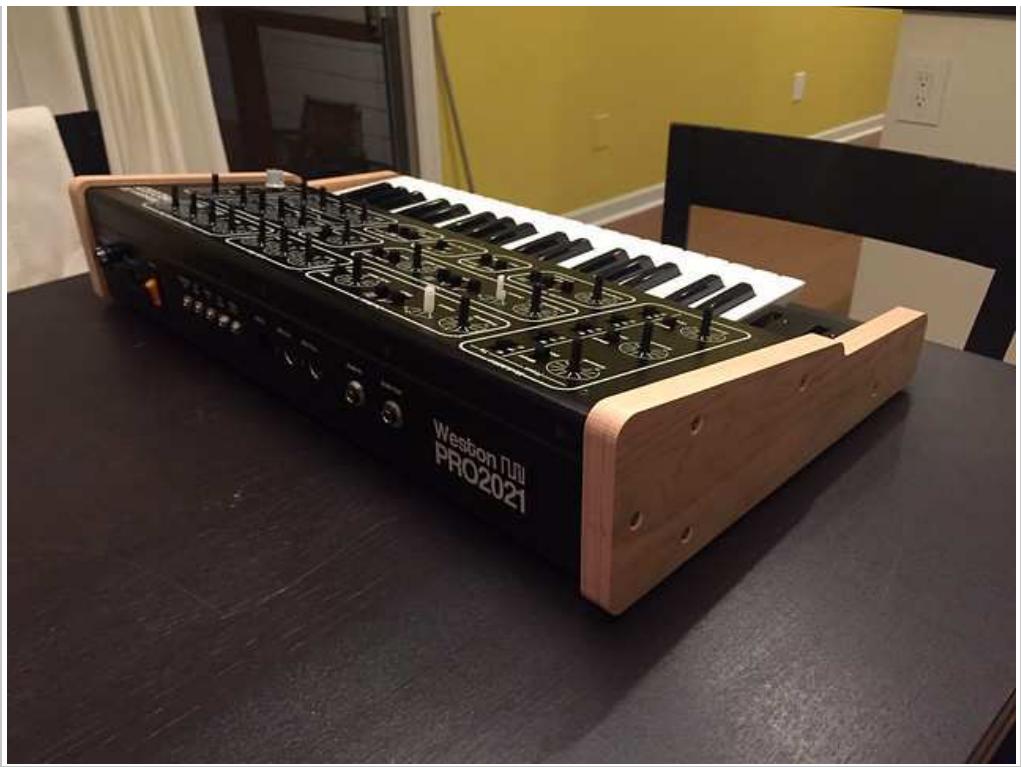
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PRO2021 plugged into a real keyboard amp and my god it sounds so good and fat that I almost cried. I really just wanted to play it all night, lol, but alas I have to take it apart as I'm taking the 5 proto sheet metal tops to the laser etcher to get the missing text fixed.

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OK, pics:





I can understand you are proud, just wow! Looks very professional, super nice job, now I really really must have one



Oh, would it be possible to add midi thru to it?

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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[Post](#) Posted: Tue Jan 08, 2019 5:26 am Post subject:

[quote](#) [ignore](#)

devinw1: CONGRAZ, it's a beauty!

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[profile](#) [pm](#) [email](#)

[Post](#) Posted: Tue Jan 08, 2019 11:09 am Post subject:

[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

aabbcc wrote:

I can understand you are proud, just wow! Looks very professional, super nice job, now I really really must have one



Oh, would it be possible to add midi thru to it?

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[Post](#) Posted: Tue Jan 08, 2019 12:01 pm Post subject:

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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[Post](#) Posted: Tue Jan 08, 2019 12:23 pm Post subject:

[quote](#) [ignore](#)

kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

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[profile](#) [pm](#) [email](#)

Posted: Tue Jan 08, 2019 7:27 pm Post subject:

[quote](#) [ignore](#)

tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

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[profile](#) [pm](#) [email](#)

Posted: Tue Jan 08, 2019 9:34 pm Post subject:

[quote](#) [ignore](#)

synthetek
Wiggling with Experience



Joined: 05 Jun 2015
Last Visit: 20 Apr 2019

Posts: 393
Location: Orange County, California

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[profile](#) [pm](#) [email](#) [www](#)

Posted: Tue Jan 08, 2019 9:46 pm Post subject:

[quote](#) [ignore](#)

makhho
Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019

Posts: 124

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Posted: Wed Jan 09, 2019 11:50 am Post subject:

[quote](#) [ignore](#)

devinw1
Veteran Wiggler



synthetek wrote:

Modular addict just started selling a pro-one style knob with set screw

Nice! Only 89-99 cents too!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[quote](#) [ignore](#)

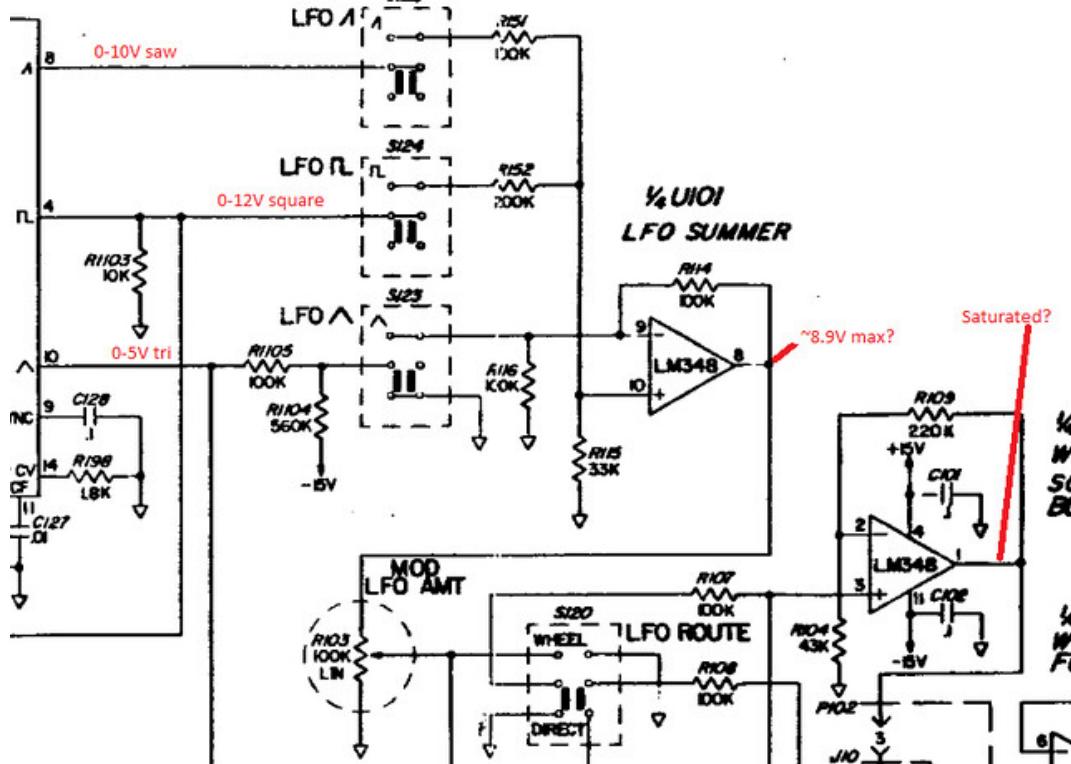
devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Wed Jan 09, 2019 11:57 am Post subject:

Quick help here from the electronics gurus would be helpful: I'm looking at pitch bend pot possibilities and when I get to running the numbers, it looks like the modulation source buffer (U101) should be totally saturated in the original design? The gain should be $1 + (220k/43k) = 6.1$, and I calculate the LFO input side (the output of the LFO summer) would be about 8.9V... Something doesn't add up. Can someone check my maths?



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devinw1
Veteran Wiggler



Posted: Wed Jan 09, 2019 9:08 pm Post subject:

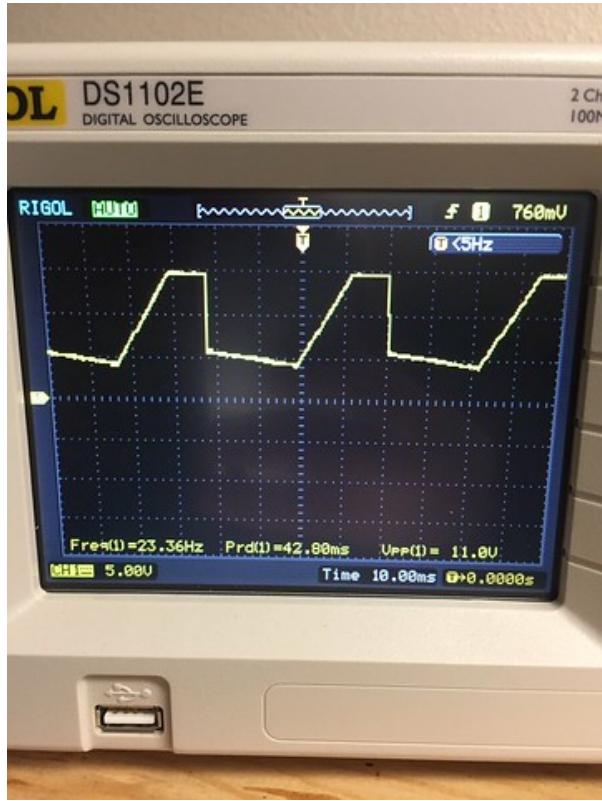
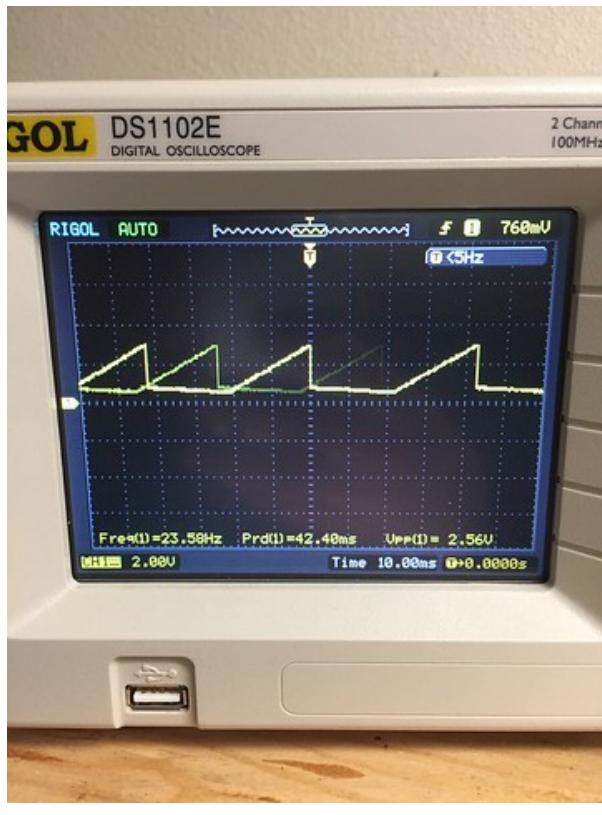
I figured it out. I had neglected to factor in the passive mixer ($3 \times 100k$) for the other 2 modulation sources. I measured with the o-scope, and the output of the LFO summer was 9.0V peak just like I thought. Then out of the mixer you get about 3V or so as one would expect.

The interesting thing is that the modulation buffer is indeed still set up to be able to rail. You can see all 3 waveforms turned on the LFO and the first pic is the output of the modulation buffer with the LFO->mod knob about half way, and the 2nd is full way. It does saturate the op amp a bit.

Anyway, now I can continue with the new mod/pitch wheel. 😊

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



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makhho
Common Wiggler

Posted: Wed Jan 09, 2019 10:08 pm Post subject:

[quote](#) [ignore](#)





Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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OIP
Common Wiggler

Posted: Wed Jan 09, 2019 10:46 pm Post subject:

[quote](#) [ignore](#)

Joined: 07 Oct 2015
Last Visit: 20 Apr 2019



Posts: 90

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devinw1
Veteran Wiggler



Posted: Thu Jan 10, 2019 11:14 am Post subject:

[quote](#) [ignore](#)

Thanks makhhho and OIP! It's been fun, and way more work than I had anticipated (ain't that always the case!?). Feels good to be in the home stretch though!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Troubleshooter
Wiggling with Experience



Posted: Thu Jan 10, 2019 5:37 pm Post subject:

[quote](#) [ignore](#)

Great work! Count me in for sure!

These fully playable instruments are the kind of projects I would like to see more.

I came across a keybed question in the first pages.

Europeans can easily buy there Fatars @ Newgroove Italy. That is where I bought mine for my Model D replica.

Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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devinw1
Veteran Wiggler

Posted: Thu Jan 10, 2019 5:41 pm Post subject:

[quote](#) [ignore](#)

Troubleshooter wrote:

Great work! Count me in for sure!

These fully playable instruments are the kind of projects I would like to see more.



I came across a keybed question in the first pages.
Europeans can easily buy there Fatars @ Newgroove Italy. That is where I bought mine for my Model D replica.

Thanks! And yes Newgroove seems to be a good option and I will be recommending them in the build document. Also, I have spoken with Lars, the owner of TechMechs vintage synth and he is more than willing to sell boards with ribbon cable to anyone here in the DIY community. So, we seem to be out of the woods regarding the notoriously difficult-to-work-with Fatar! 🎉

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Updated kit interest list:

synthtek
aabbcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter

Also I just bought 1 each of the 14mm and 18mm "Jove" style knobs from Modular addict to test out (whilst stocking up on some Alfa chips since I gotta pay shipping anyway 🎉). 🎉

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[quote](#) [ignore](#)

aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019

Posts: 275
Location: Sweden

devinw1 wrote:

Troubleshooter wrote:

Great work! Count me in for sure!
These fully playable instruments are the kind of projects I would like to see more.

I came across a keybed question in the first pages.
Europeans can easily buy there Fatars @ Newgroove Italy. That is where I bought mine for my Model D replica.

Thanks! And yes Newgroove seems to be a good option and I will be recommending them in the build document. Also, I have spoken with Lars, the owner of TechMechs vintage synth and he is more than willing to sell boards with ribbon cable to anyone here in the DIY community. So, we seem to be out of the woods regarding the notoriously difficult-to-work-with Fatar! 🎉

Updated kit interest list:

synthtek
aabbcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault
MrRoper

csaban
Troubleshooter

Also I just bought 1 each of the 14mm and 18mm "Jove" style knobs from Modular addict to test out (whilst stocking up on some Alfa chips since I gotta pay shipping anyway  ).

Could you post a list of what CEM chips and how many are needed?

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

aabbcc wrote:

devinw1 wrote:

Troubleshooter wrote:

Great work! Count me in for sure!

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Updated kit interest list:

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aabbcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter

Also I just bought 1 each of the 14mm and 18mm "Jove" style knobs from Modular addict to test out (whilst stocking up on some Alfa chips since I gotta pay shipping anyway  ).

Could you post a list of what CEM chips and how many are needed?

Sure!

3x CEM3340 re-pop / AS3340 (1 for each VCO, 1 for LFO)

1x AS3320 VCF

2x AS3310 Envelope

Builders will also need 2 CA3280 OTAs, but I'd recommend contacting Alfa for the new AS3280 as it might be easier to procure. There are, however a few legit Ebay sellers selling good new old stock ones for reasonable prices.

All the other ICs are easily procurable from Mouser.



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tempco01

Learning to Wiggle

Joined: 29 Jan 2015
Last Visit: 19 Apr 2019



Posts: 11
Location: Midlands, UK

□ Posted: Sun Jan 13, 2019 6:20 am Post subject:

- A) Are you seriously interested in purchasing a DIY kit for this synth
- B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?
- C) Any other questions/concerns?[/quote]

- A) Yes (subject to price of course)
- B) No thanks, I have the crimping tools already.
- C) Excellent Project!

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[quote](#) [ignore](#)

devinw1

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Mon Jan 14, 2019 12:01 am Post subject:

Thanks tempco01!

Updated kit interest list:

synthtek
aabbc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhh
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter
tempco01

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[quote](#) [ignore](#)

devinw1

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Also updates: I got the pitch/mod assembly design done this weekend. Getting quotes for the bracket and wheels. I have some good connects for cheap Cnc Metal work but if the aluminum knobs are too speedy, I'll just do 3D printing for those probably.

This week I'll have I'll make some quick fixes to the sheet metal prints and send them for quote for higher numbers so I can start to get the kit cost dialed in for y'all to ponder.

The only remaining sticking point is I'm still having trouble getting reasonable pricing for the wood ends. I'll continue to seek out options.

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[quote](#) [ignore](#)

kragg

Wiggling with Experience

□ Posted: Mon Jan 14, 2019 1:25 am Post subject:

devinw1 wrote:

The only remaining sticking point is I'm still having trouble getting reasonable pricing for the wood ends. I'll continue to seek out options.

If this is an option, I'd rather go for a woodless kit, as I can make them myself (and wood ends weight much more than chips and



resistors, so it means increased shipping costs).

Also, do you plan to include the knobs in the kit ? I think i would rather prefer to get a "bare" kit (without knobs and wood ends), if possible, for the same reason.

<http://kragg.fr/>

Joined: 15 Dec 2011

Last Visit: 18 Apr 2019



Posts: 404

Location: Nemo Point

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Jannel

Wiggling with Experience

Joined: 19 Oct 2015

Last Visit: 20 Apr 2019



Posts: 257

Posted: Mon Jan 14, 2019 3:35 am Post subject:

kragg wrote:

If this is an option, i'd rather go for a woodless kit, as i can make them myself (and wood ends weight much more than chips and resistors, so it means increased shipping costs).
Also, do you plan to include the knobs in the kit ? I think i would rather prefer to get a "bare" kit (without knobs and wood ends), if possible, for the same reason.

I 100% agree with this!

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tjs

Learning to Wiggle



Joined: 30 May 2009

Last Visit: 19 Apr 2019



Posts: 49

Location: Berlin

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synthetek

Wiggling with Experience



Joined: 05 Jun 2015

Last Visit: 20 Apr 2019



Posted: Mon Jan 14, 2019 4:33 am Post subject:

I would be ok without the wood ends if a file was available with a template that I could cut myself or take to a local place with a cnc router.

<https://www.instagram.com/synthetek/>

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aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

Posted: Mon Jan 14, 2019 4:46 am Post subject:



kragg wrote:

devinw1 wrote:

The only remaining sticking point is I'm still having trouble gettin reasonable pricing for the wood ends. I'll continue to seek out options.

If this is an option, i'd rather go for a woodless kit, as i can make them myself (and wood ends weight much more than chips and resistors, so it means increased shipping costs).

Also, do you plan to include the knobs in the kit ? I think i would rather prefer to get a "bare" kit (without knobs and wood ends), if possible, for the same reason.

synthetek wrote:

I would be ok without the wood ends if a file was available with a template that I could cut myself or take to a local place with a cnc router.

THIS! I reckon we are a bunch that are ordering from the EU so it would be great if this was an option 😊

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djs
Super Deluxe Wiggler

Posted: Mon Jan 14, 2019 8:43 am Post subject:



Count me in for a kit!

I'd be willing to do the molex wiring connections myself.

"Noise is what the Earth is made of" - David Bowie

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makhho
Common Wiggler

Posted: Mon Jan 14, 2019 11:04 am Post subject:



Secondd'

Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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devinw1
Veteran Wiggler

Posted: Mon Jan 14, 2019 11:39 am Post subject:



kragg wrote:

devinw1 wrote:

The only remaining sticking point is I'm still having trouble gettin reasonable pricing for the wood ends. I'll continue to seek out options.

If this is an option, i'd rather go for a woodless kit, as i can make them myself (and wood ends weight much more than chips and resistors, so it means increased shipping costs).



Also, do you plan to include the knobs in the kit ? I think i would rather prefer to get a "bare" kit (without knobs and wood ends), if possible, for the same reason.

I planned on not including knobs, so everyone can "trick them out" to their liking 😊.

I am definitely OK with shipping kits without the wood, and I can provide both a STEP 3D file or a DXF for the part so people can make them.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Updated kit interest list:

synthtek
aabbc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter
tempco01
djs
tjs

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Mon Jan 14, 2019 12:24 pm Post subject:

If you need a keybed in the US, you can grab a used Novation Remote 37SL controller. You see used ones and dead ones show up on eBay all the time for well under \$100 USD.

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devinw1
Veteran Wiggler



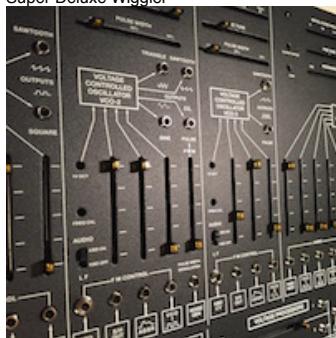
Posted: Mon Jan 14, 2019 1:36 pm Post subject:

Oh, nice grantb5. Always good to know where all those harvestable Fatar boards are out lurking!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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LED-man
Super Deluxe Wiggler



Joined: 08 Aug 2012
Last Visit: 19 Apr 2019



Posts: 1366
Location: Wolfsburg Germany

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makhho
Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909
Super Deluxe Wiggler

Posted: Tue Jan 15, 2019 4:32 am Post subject:

hi,
i offer a groupbuy for the CEM3340(DIP), which is used in the Kijimi and DDRM,
few friends asked me to sell the AS3310(DIP), AS3320(DIP) and AS3280 (SMT).
I spoke with my german dealer, who organise the AS3280(SMT) too.

feel free to contact me if you want a kit, for now i don't have exact prices.
one CEM3340 costs 9,21GBP (ca.10.50€)
one 3310 costs around 4,85€
one 3320 5.50€

#####

TTSH Support Page and other DIY Projects:
<https://www.DSL-man.de>

Posted: Tue Jan 15, 2019 11:09 am Post subject:

LED-man wrote:

hi,
i offer a groupbuy for the CEM3340(DIP), which is used in the Kijimi and DDRM,
...

Interested.

Posted: Tue Jan 15, 2019 11:55 am Post subject:

On the topic of IC's, If you live inthe US, Modular Addict seems to have good pricing on the Alfa clones:

AS3340: \$7.70
AS3320: \$7.70
AS3310: \$7.70

If you want the CEM version, Thonk has them as well. I think that's where I got them for my proto build.

Posted: Tue Jan 15, 2019 12:02 pm Post subject:

I've got a bunch of the CEM3340s if anyone needs them in the US.



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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makhho
Common Wiggle



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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Posted: Tue Jan 15, 2019 12:04 pm Post subject:

Altitude909 wrote:

I've got a bunch of the CEM3340s if anyone needs them in the US.

In chicago -- will reach out when needed!

Joined: 19 Aug 2015
Last Visit: 19 Apr 2019



Posts: 30
Location: Germany

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Posted: Tue Jan 15, 2019 1:49 pm Post subject:

I'm interested in a kit as well. This just looks too good not to build!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



Got cha added!

Updated kit interest list:

synthtek

aabbcc

Altitude909

Purveyor2

Sunshine Jones

kragg (desktop)

makhho

groove

Janne1

Grooverman

FactoryDefault

MrRoper

csaban

Troubleshooter

tempco01

djs

tjs

YannickD

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synthpriest

Common Wiggler

Joined: 24 Feb 2016

Last Visit: 03 Apr 2019



Posts: 130

Location: inside the machine

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Many compliments for your hard work. Is there a desktop version in sight?

grantbs

Common Wiggler

Joined: 12 Oct 2010

Last Visit: 20 Apr 2019



Posts: 69

kragg wrote:

- Will it feature the very same **sequencer** (2 patterns, 40 notes each) ? I like this sequencer a lot for quick and dirty sketches, basslines, complex arpeggios, etc.
Could we imagine to be able to export/re-import the sequences somewhere, in some way (using Midi, maybe) ?
- Will the LFO and sequencer **sync** to audio in trigger (this feature is a-ma-zing to play everything in sync with other gear) ?

The two sequences are 256 steps, non-volatile.

They can be loaded/saved to MIDI via Sys Ex commands. Can be loaded/saved while the sequencer is running.

The sequencer can be synced to MIDI.

LFO2 is controllable via MIDI.

It's all in the TurboCPU documentation.

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jim-analog

Learning to Wiggle

Joined: 28 Dec 2018

Last Visit: 18 Apr 2019

Posts: 5

Location: Bucks County, PA. USA

Greetings,

Fantastic work devinw1! I'm seriously impressed with what you've accomplished!

I've been searching for new keybeds for 2 old Pro1s. Obviously, no luck with Fatar or anywhere else). I just followed the info you posted for TechMechs, but it seems the cost per unit is \$199 each to USA. Unless there is a secret code to use, that seems pretty high for a \$60/OEM available price in Italy.

First, could you please clarify if that is indeed the cost for anyone here in the US? Next, I'd warmly request if at all possible, if you're going to be ordering a quantity of keybeds to support your new Pro1 venture, can you order extras for those of us looking to repair old SCI versions? Thanks much for your time, best of luck with your new unit and very sorry to add to your "to do" list.

Regards, Jim

devinw1 wrote:

Thanks! And yes Newgroove seems to be a good option and I will be recommending them in the build document. Also, I have spoken with Lars, the owner of TechMechs vintage synth and he is more than willing to sell boards with ribbon cable to anyone here in the DIY community. So, we seem to be out of the woods regarding the notoriously difficult-to-work-with Fatar!



[Back to top](#)

jim-analog

Learning to Wiggle

Joined: 28 Dec 2018

Greetings,

Last Visit: 18 Apr 2019

Posts: 5

Location: Bucks County, PA, USA

devinw1,

If you ever decide to offer a desktop or rack mount version, please keep us all posted. I'd really like to have a more compact P1 that I could add a bunch of CV I/O and do other mods to. The SCI versions have gotten far too valuable to alter. So, I'd be in for a desk top unit for sure if you go that route in the future. Perhaps others would as well?

Regards, Jim

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jbdiver

Wiggling with Experience



Joined: 31 Aug 2010

Last Visit: 19 Apr 2019



Posts: 267

Location: Minneapolis, USA

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Please add me to the kit list: jbdiver

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grantb5

Common Wiggler



Joined: 12 Oct 2010

Last Visit: 20 Apr 19

Posts: 69

jim-analog wrote:

I've been searching for new keybeds for 2 old Pro1s. Obviously, no luck with Fatar or anywhere else). I just followed the info you posted for TechMechs, but it seems the cost per unit is \$199 each to USA. Unless there is a secret code to use, that seems pretty high for a \$60/OEM available price in Italy.

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

First off, thanks grantb5 for answering a bunch of the latest Qs!

As for the keybeds, the price from TechMechs is actually 120 USD. That's for a keybed with ribbon as you aren't buying the little adapter PCB for the original Pro-One as my board just has the appropriate ribbon connector right on it. Shipping is 30 USD in the US since he's in the Netherlands. As grantb5 mentioned, ANY vendor is a godsend as it's literally impossible to buy low qty boards from Fatar directly. If I were building one of these, I'd see how much the Italian vendor charges for shipping and then buy whichever one was cheaper between them and TechMechs. Or scavenge one from some of the options listed in this thread.

As for rackmount, as I've said before, it's certainly possible but not currently planned. A project like this is a ton of work and I can only handle 1 project thread at a time as I work a full time day job .

Updated kit interest list:

synthtek

aabbcc

Altitude909

Purveyor2

Sunshine Jones

kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter
tempco01
djs
tjs
YannickD
jbdiver

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

[D](#) Posted: Wed Jan 16, 2019 1:16 am Post subject:

- A) Are you seriously interested in purchasing a DIY kit for this synth
B) If yes to (A), would you require all the board-to-chassis wiring harnesses using Molex SL connectors be pre-made?
C) Any other questions/concerns?

- A) Yes (depending on price)
B) Maybe, but not essential
C) What a fantastic project. Looks and sounds great!

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Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

[Back to top](#)

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

[D](#) Posted: Wed Jan 16, 2019 11:43 am Post subject:

Is the GATE LED part of the project? I'm not seeing it on the front panel.

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devinw1
Veteran Wiggler

[D](#) Posted: Wed Jan 16, 2019 12:56 pm Post subject:

grantb5 wrote:

Is the GATE LED part of the project? I'm not seeing it on the front panel.

Yessir. It is under the "Mode" section like the original. I also added a LED for the LFO rate, and just put the buffer and connector pin on the "A" PCB last night so that is all sorted.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Updated kit interest list:

synthtek
aabbcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhhho
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter
tempco01
djs
tjs
YannickD
jbdiver
sparky

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[profile](#) [pm](#) [email](#)

Posted: Wed Jan 16, 2019 12:59 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

Posted: Wed Jan 16, 2019 1:44 pm Post subject:

[quote](#) [ignore](#)



Joined: 24 Aug 2011

Last Visit: 20 Apr 2019



Posts: 2969

Location: Meesheegan

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aabbcc

Wiggling with Experience

Joined: 02 Feb 2018

Last Visit: 20 Apr 2019



Posts: 275

Location: Sweden

Posted: Fri Jan 18, 2019 5:26 am Post subject:

devinw1 wrote:

aabbcc wrote:

devinw1 wrote:

Troubleshooter wrote:

Great work! Count me in for sure!

These fully playable instruments are the kind of projects I would like to see more.

I came across a keybed question in the first pages.
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aabbcc

Altitude909

Purveyor2

Sunshine Jones

kragg (desktop)

makhho

groove

Janne1

Grooverman

FactoryDefault

MrRoper

csaban

Troubleshooter

Also I just bought 1 each of the 14mm and 18mm "Jove" style knobs from Modular addict to test out (whilst stocking up on some Alfa chips since I gotta pay shipping anyway

).

Could you post a list of what CEM chips and how many are needed?

Sure!

3x CEM3340 re-pop / AS3340 (1 for each VCO, 1 for LFO)

1x AS3320 VCF

2x AS3310 Envelope

Builders will also need 2 CA3280 OTAs, but I'd recommend contacting Alfa for the new AS3280 as it might be easier to procure. There are, however a few legit Ebay sellers selling good new old stock ones for reasonable

prices.



All the other ICs are easily procurable from Mouser.

Thanks mate! I don't feel like hunting and gambling on the 3280s and the AS3280 only seem to be available in SOIC16 package?

Would this soic->pdip adapter physically fit on the pcb around all other components near the 3280?

Capture.PNG	
Description:	
Filename:	Capture.PNG
Filesize:	1.16 MB
Downloaded:	12 Time(s)

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Fri Jan 18, 2019 12:21 pm Post subject:



aabbcc wrote:

Would this soic->pdip adapter physically fit on the pcb around all other components near the 3280?

Oh, dang I didn't realize the AS3280 was only coming in SOIC16. That adapter looks like it will work on Board B, but I think it might hit something on Board A. I don't have the CAD in front of me, just eyeballing. However, something like this:

<https://www.amazon.com/Proto-Advantage-SOIC-16-DIP-16-Adapter-pitch/dp/B00JU3FLAC>

Looks like it would do better without that "diving board" sticking out the side.

That all being said, if we all agree on a reasonable SOIC to DIP adapter, it's not too late for me to jigger things on the PCB to make sure it fits before I order a run for kits.

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Fri Jan 18, 2019 12:42 pm Post subject:



They have a website too and they will do assembly of IC on adapter board but I've never priced it out.

<http://www.proto-advantage.com/store/>

You might want to place some beta units in the wild before finalizing a larger production run. Just a thought. It's not a race. 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Fri Jan 18, 2019 1:23 pm Post subject:



grantb5 wrote:

They have a website too and they will do assembly of IC on adapter board but I've never priced it out.

<http://www.proto-advantage.com/store/>

You might want to place some beta units in the wild before finalizing a larger production run. Just a thought. It's not a race.



Oh sweet.

And, honestly, this whole project being a DIY and pretty niche thing I don't think there will ever be "production" runs of anything in the sense that the term is normally thought of. I expect maybe 20 people tops will ever build one of these, and would be seriously surprised if it went passed that. That is unless I grossly misjudge the size of this community. 😊

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synthetek
Wiggling with Experience



Joined: 05 Jun 2015
Last Visit: 20 Apr 2019



Posts: 393
Location: Orange County, California

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Posted: Fri Jan 18, 2019 7:25 pm Post subject:

devinw1 wrote:

I expect maybe 20 people tops will ever build one of these, and would be seriously surprised if it went passed that. That is unless I grossly misjudge the size of this community.

I don't know, the Syncussion was pretty popular there were 2 different kits and a few runs of them, I built 4 myself. RE303, Jasper, Gilbert all sold out and did multiple runs. These types of projects seem to be pretty popular.

<https://www.instagram.com/synthetek/>

Last edited by synthetek on Sat Jan 19, 2019 12:14 am; edited 1 time in total



devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

synthetek wrote:

I don't know, the Syncussion was pretty popular there were 2 different kits and a few runs of them, I built 4 myself. RE303, Jasper, Gilbert all sold out and did multiple runs these types of projects seem to be pretty popular.

Well, that would be pretty neat! We shall see I suppose! It will be very exciting for me to see the first couple of people build one, that much I know!

A little update: I got the 2 Modular Addict Jove knobs today and it looks like the larger one (18mm) is going to be PERFECT. It's just long enough that it looks like it will hover maybe 1mm or less above the sheet metal. And of course it looks a lot like a SCI knob. Winning. Thanks for the heads up on that. Also, another member is looking into bulk knob options that may very well be even cheaper than the Jobe knob. More on that to come. For now, I've ordered a set of them for prototype so I can polish it off.

Still waiting for the local laser shop to finish adding the missing text from the proto top chassis pieces. They say no later than next friday.

Other than that I'm just waiting on parts for the pitch/mod assemblies and pricing for the wood ends to finalize initial kit pricing.

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kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



devinw1 wrote:

I expect maybe 20 people tops will ever build one of these, and would be seriously surprised if it went passed that. That is unless I grossly misjudge the size of this community.

I guess it depends on the final price of the kit.

Also, once the price is known, we could spread the word and post the information on other forums to get a wider user base.

<http://kragg.fr/>

Posts: 404
Location: Nemo Point

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Cablebasher
Wiggling with Experience

Joined: 03 Aug 2013
Last Visit: 26 Mar 2019



Posts: 388
Location: England, UK.

□ Posted: Sat Jan 19, 2019 1:57 pm Post subject:

Been following this for a while and although I promised no more synths...

I would like a set also.

Price dependant.

I fear shipping that case from US To EU could be expensive, especially after duty etc.

I don't need wood ends as I can make my own.

I would buy a cable harness if offered but if not can crimp my own.

Looks like a great little project for a classic synth.

Keep up the good work!

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aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

□ Posted: Sat Jan 19, 2019 2:17 pm Post subject:

devinw1 wrote:

aabbcc wrote:

Would this soic->dip adapter physically fit on the pcb around all other components near the 3280?

Oh, dang I didn't realize the AS3280 was only coming in SOIC16. That adapter looks like it will work on Board B, but I think it might hit something on Board A. I don't have the CAD in front of me, just eyeballing. However, something like this:

https://www.amazon.com/Proto-Advantage-SOIC-16-DIP-16-Adapter-pitch/dp_B00JU3FLAC

Looks like it would do better without that "diving board" sticking out the side.

That all being said, if we all agree on a reasonable SOIC to DIP adapter, it's not too late for me to jigger things on the PCB to make sure it fits before I order a run for kits.

My suggestion is (if you have the time and want to) make an adapter and publish the Gerber, that way everyone could very cheaply just order them from jlcpcb or something

Or just use an available Gerber file and make it around that chosen one 😊

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devinw1
Veteran Wiggler



□ Posted: Sat Jan 19, 2019 9:05 pm Post subject:

aabbcc wrote:

devinw1 wrote:

aabbcc wrote:

Would this soic->dip adapter physically fit on the pcb around all other components near the 3280?

Oh, dang I didn't realize the AS3280 was only coming in SOIC16. That adapter looks like it will work on Board B, but I think it might hit something on Board A. I don't have the CAD in front of me, just

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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https://www.amazon.com/Proto-Advantage-SOIC-16-DIP-16-Adapter-pitch/dp_B00JU3FLAC

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My suggestion is (if you have the time and want to) make an adapter and publish the Gerber, that way everyone could very cheaply just order them from jlpcb or something

Or just use an available Gerber file and make it around that chosen one 😊

Yeah, I can totally do that. Should be pretty easy!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Jan 19, 2019 9:08 pm Post subject:

Cablebasher wrote:

Been following this for a while and although I promised no more synths...

I would like a set also.

Price dependant.

I fear shipping that case from US To EU could be expensive, especially after duty etc.

I don't need wood ends as I can make my own.

I would buy a cable harness if offered but if not can crimp my own.

Looks like a great little project for a classic synth.

Keep up the good work!

Yeah, shipping might be tricky for sure. The bottom and top case halves do sort of nest, so hopefully I can get it into a reasonable size box. Packaging is on my list of s**t to figure out indeed.

Question about the EU: When it comes time to collect for kits, am I required to charge VAT? How's that all work? 🤔

Updated kit interest list:

synthtek
aabbc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhh
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter
tempco01
djs
tjs
YannickD
jbdiver
sparky

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Boogie
 Wiggling with Experience

 Joined: 10 Nov 2016
 Last Visit: 20 Apr 2019

 Posts: 489
 Location: Belgium
devinw1**Quote:**

Question about the EU: When it comes time to collect for kits, am I required to charge VAT? How's that all work?

As US and EU have a complete different taxing system,
no, you don't add VAT.

The **shipping company** (like DHL, FedEx,...), if doing their job right,
will add import tax plus VAT,

and prepay these to the tax department of the country of import.

The destinee will be charged with these amounts on top of your price.

Be very carefull by describing your goods. Customs might check the content.

For customs declarations, you may use the following number for **HS Tariff Number:9207 9090**

Please the following description: **Musical instruments; parts and accessories of such articles.**

Pls double check everything yourself as **this post is informative only.**

Import costs are 3.7 % and can be found here:<http://madb.europa.eu/madb/euTariffs.htm?productCode=92079090&country=US>

VAT will be added at moment of import. For Belgium that would be 21%.

Thus, if a Belgian customer would import to Belgium, the units will cost some **24.7% extra on top** of your sales price.

For reference, I've added the tables with Tarif codes and VAT percentages below.

You might have someone doing a group buy in a country with the lowest or low VAT, since once imported and tax and VAT are payed, there's free travel of goods throughout Europe.

Though one should consider if it's worth redistributing having to add extra transport costs. It might end up more expensive, but that exercise is for you to make. 😊

□ Posted: Sun Jan 20, 2019 4:26 am Post subject:



TRADE

Market Access Database

European Commission > Trade > Market Access database > EU Tariffs

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[Services for SME](#)

Import into the EU

[EU Tariffs](#)

[Other Resources](#)



During summer 2018 it was conducted a survey to improve the understanding of rules of origin.

[Read complete survey results](#)

EU Tariffs

This section provides information on tariffs and other import measures applied to a given product imported into the EU.

Country:

United States of America

Product code (6 to 10 digits):

92079090

[Find my product code](#)

[Search](#)

Product 92079090

Musical instruments; parts and accessories of such articles

92 00 000000

Musical instruments, the sound of which is produced, or must be amplified, electrically
(for example, organs, guitars, accordions)

92 07 000000

Keyboard instruments, other than accordions

92 07 100000

Other

92 07 900000

Guitars

92 07 901000

Other

92 07 909000

EU Import duties

Origin	Measure Type	Tariff	Conditions	Footnote	EU Law
Any Country	Third country duty	3.70%			R9822610
Any Country	Suspension - goods for certain categories of ships, boats and other vessels and for drilling or production platforms	0%	Show	EU003 TM510	R8726583

Land	Hoog tarief
Belgie	21
Bulgarije	20
Cyprus	19
Denemarken	25
Duitsland	19
Estland	20
Finland	24
Frankrijk	20
Griekenland	24
Groot-Brittannie	20
Hongarije	27
Ierland	23
Italie	22
Kroatie	25
Letland	21
Litouwen	21
Luxemburg	17
Malta	18
NEDERLAND	21
Oostenrijk	20
Polen	23
Portugal	23
Roemenie	19
Slovenie	22
Slowakije	20
Spanje	21
Tsjechie	21
Zweden	25

"Digital generated 'analog', is missing its analog soul and therefore isn't analog any more."

Jupiter 8 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=209322>

Minipops 7 clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=199360>

ClapTrap clone: <https://www.muffwiggler.com/forum/viewtopic.php?t=202248>

www.nabla-instruments.com

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[!\[\]\(e921c990b9f5f06c856e9d5d7f06f32c_img.jpg\) profile](#) [!\[\]\(45b9e22e138a668a393b711f5618d359_img.jpg\) pm](#)

[!\[\]\(4b09627c6aee76709902ed296c8ddffd_img.jpg\) quote](#) [!\[\]\(e0d590db2585380dc3d9f1363be6e37f_img.jpg\) ignore](#)

devinw1

Veteran Wiggler



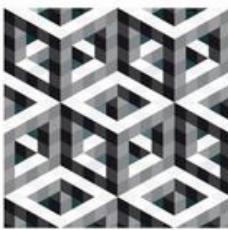
Posted: Sun Jan 20, 2019 8:21 pm Post subject:

Thanks for that info Boogie! That is very helpful. Dang, those %s are high! Sorry to my EU friends! I am trying to do the best I can to make the kit price affordable so hopefully the VAT+kit will not be unacceptable, but we shall see what people think.

Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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maximee
Learning to Wiggle



Joined: 17 Dec 2016
Last Visit: 12 Apr 2019

Posts: 38
Location: Germany

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Sunshine Jones
Common Wiggler



[Post](#) [Posted: Mon Jan 21, 2019 2:30 am](#) Post subject:

devinw1 wrote:

And, honestly, this whole project being a DIY and pretty niche thing I don't think there will ever be "production" runs of anything in the sense that the term is normally thought of. I expect maybe 20 people tops will ever build one of these, and would be seriously surprised if it went passed that. That is unless I grossly misjudge the size of this community.

I duno about that. I'm pretty excited about this project, and have a handful of excited friends too. One of which can't even look in this thread he's so anxious and stupidly excited about it.

You're doing a great thing. We are thrilled, and grateful.

Joined: 02 Dec 2015
Last Visit: 20 Apr 2019

Posts: 155
Location: San Francisco

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makhho
Common Wiggler



[Post](#) [Posted: Mon Jan 21, 2019 1:59 pm](#) Post subject:

Thrilled indeed -- I've let some Chicago friends know about the project too.

Joined: 05 Feb 2018
Last Visit: 20 Apr 2019

Posts: 124

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kyle
Learning to Wiggle

Joined: 26 Jul 2013
Last Visit: 14 Apr 2019

Posts: 3

[Post](#) [Posted: Tue Jan 22, 2019 7:05 am](#) Post subject:

Fantastic looking project. Please add me to the list:

- A) Yes, partial or complete kit
- B) Yes, then I won't need to buy a crimper 😊

Thanks!

[Back to top](#) **devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

 Posted: Tue Jan 22, 2019 11:51 am Post subject:

OK, interest list updated below. Thanks for all the comments everyone!

Regarding the CA3280/AS3280 discussion: My friend Altitude909 had a great idea in that I just put both a footprint for a DIP16 and a SOIC16 on the board, that way people can use NOS CA3280s or the AS3280 SMD part without any fussy adapters, so I will do this and we should be right as rain!

Also, it looks like it will make a lot of sense, price wise, for me to include all the pots with the kit, rather than make everyone purchase them. I hope that is OK for everyone? Again, this will be a better deal for you guys. The pots would be in the footprint of Alpha 11mm RV110 style pots.

Updated kit interest list:

synthtek
aabbcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhh
groove
Janne1
Grooverman
FactoryDefault
MrRoper
csaban
Troubleshooter
tempco01
djs
tjs
YannickD
jbdiver
sparky
Cablebasher
kyle
maximee

[Back to top](#) **aabbcc**
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019

Posts: 275
Location: Sweden Posted: Tue Jan 22, 2019 12:03 pm Post subject:

devinw1 wrote:

OK, interest list updated below. Thanks for all the comments everyone!

Regarding the CA3280/AS3280 discussion: My friend Altitude909 had a great idea in that I just put both a footprint for a DIP16 and a SOIC16 on the board, that way people can use NOS CA3280s or the AS3280 SMD part without any fussy adapters, so I will do this and we should be right as rain!

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aabbcc
Altitude909
Purveyor2
Sunshine Jones
kragg (desktop)
makhh
groove
Janne1
Grooverman
FactoryDefault
MrRoper

csaban
Troubleshooter
tempco01
djs
tjs
YannickD
jbdiver
sparky
Cablebasher
kyle
maximee

it seems every great diy projects I've come across altitude has always contributed somehow with something really good, gold star for altitude!

Oh and I'm totally fine with the pots included in ze kit!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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-PLEASE SEE ORIGINAL POST (PAGE 1) FOR COST/ORDER INFO-

Last edited by devinw1 on Wed Feb 06, 2019 11:35 am; edited 4 times in total

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

devinw1 wrote:

-Music Technologies Group TurboCPU (w/ MIDI): <http://www.musictechnologiesgroup.com/>

This one seems to be out of stock at the moment.

When you get the shipping prices sorted out for EU I can choose the option. Either full kit or without wood sides.



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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Jannel wrote:

devinw1 wrote:

-Music Technologies Group TurboCPU (w/ MIDI): <http://www.musictechnologiesgroup.com/>

This one seems to be out of stock at the moment.

When you get the shipping prices sorted out for EU I can choose the option. Either full kit or without wood sides.



I misspoke and have corrected my post. My design uses the standard TurboCPU w/o his MIDI board (I have offloaded all the MIDI electronics onto the Pro-2021 "A" PCB). MTG sells the TurboCPU through their Ebay and have one here:

<https://www.ebay.com/itm/Sequential-Circuits-Pro-One-TurboCPU-replaces -8021-adds-features-NEW-By-MTG/233088999767?hash=item36452fe157:g;3hYA AOSwQPtawTBu:rk:2:pf:1&frceupt=true>



I'm talking to them now to make sure they will have a bunch in stock and can continue making them.

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tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Ha. Damn. I don't remember finding that when searching. Welp, regardless I have a huge bag of NOS ones I did not pay much for.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019

OK, so, pricing. We have it. Let me just first say that I have spent a LOT of time trying to make this affordable for everyone. Some of the pieces that make this up, like the folded sheet metal, just don't get really cheap until you start talking about setting up a line for them and buy 100s, but more likely 1000s. We aren't at those volumes, and never will be, but I have done my best to make them affordable. OK, that all being said, here is what we are looking at:

Oh yeah, also I haven't quoted shipping yet, but hope to work on that soon. I will likely use USPS as they have had the best rates for me in the past, even for international.

Full Kit: 599USD

Full Kit minus wood end cheeks: 529USD

Full Kit minus pitch/mod wheel assemblies: 529USD

Posts: 589
Location: Portland, OR

Full Kit minus wood ends and pitch/mod assemblies: 459USD

As a reminder,

FULL KIT INCLUDES:

- Formed Aluminum chassis bottom (black anodize with laser etch graphics)
- Formed Aluminum chassis top (black anodize with laser etch graphics)
- Bare PCBs (1x "A" Board, 1x "B" Board, 1x PSU Board, 2x VCO Module Board)
- All pots (11mm) for build (100k Linear and 100k Audio)
- Machined aluminum custom P2021 pitch bend and modulation wheel assemblies.
- CNC Machined cherry wood left and right end cheeks (unfinished for your choice of finish)
- 5x 2N4250 Transistors
- All required mounting hardware (rubber feet, standoffs, black SS flat head screws, Socket head screws for ends, sheet metal U nuts, etc..)

Mouser Carts:

A+B+VCOs: <https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=4e24 64264c>

PSU+Misc: <https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=767d 3073f4>

Your estimated total build cost = 599USD + Mouser Carts(267USD)+TurboCPU(100USD)+Keybed(68USD)+CEM Chips (15USD)
= 1047USD

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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where do i pay

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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I forgot to ask, what is standard procedure on something like this? I would like to have people who buy the first round of kits pay something in earnest so that I don't end up bag holding a whole ton of parts that don't get sold. On the other hand, I don't have any interest in making people think they are locked into a contract or anything!

Would everyone be OK to secure a kit order by paypal-ing an amount of say 200\$ as a deposit, and the rest would be payed right as I am boxing it up to ship?

Altitude909
Super Deluxe Wiggler

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devinw1 wrote:

I forgot to ask, what is standard procedure on something like this? I would like to have people who buy the first round of kits pay something in earnest so that I don't end up bag holding a whole ton of parts that don't get sold. On the other hand, I don't have any interest in making people think they are locked into a contract or anything!



Would everyone be OK to secure a kit order by paypal-ing an amount of say 200\$ as a deposit, and the rest would be payed right as I am boxing it up to ship?

Get half or all of it up front, rest due when it ships. That's how I run stuff like this and it works well, you can do what you need to do and not rely on other ppl after its done. Talk is cheap 😊, dont count on ppls interest to gauge a big order

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Posted: Mon Jan 28, 2019 1:24 pm](#) Post subject:

Altitude909 wrote:

Get half or all of it up front, rest due when it ships. That's how I run stuff like this and it works well, you can do what you need to do and not rely on other ppl after its done. Talk is cheap 😊, dont count on ppls interest to gauge a big order

Perfect, that is exactly what I was thinking!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

[Posted: Mon Jan 28, 2019 3:17 pm](#) Post subject:

devinw1 wrote:

Perfect, that is exactly what I was thinking!

Half price at pre-order state is totally fine! Full kit without wood sides for me. Where do I pay?

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Posted: Mon Jan 28, 2019 3:30 pm](#) Post subject:

Jannel wrote:

devinw1 wrote:

Perfect, that is exactly what I was thinking!

Half price at pre-order state is totally fine! Full kit without wood sides for me. Where do I pay?

I was just going to wait until I do a couple more things, mostly sourcing packaging so I can get shipping quotes but at that point, people can just send a paypal to me, and I'll provide the address.

Timeframe wise, we will be pushed out probably to mid March for sending these out, because some of the parts that will need to be made coincide with the Chinese Lunar New Year, which started 3 days ago and shuts the whole dang country down for a good chunk of February!

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Mon Jan 28, 2019 3:58 pm Post subject:

[quote](#) [ignore](#)

Party animals over there. 😊

So the "Curtis" chips, recommended source? I didn't see them in the carts. Could be blind though.

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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djs
Super Deluxe Wiggler

Joined: 01 Sep 2010
Last Visit: 20 Apr 2019



Posts: 1029
Location: South Beloit, IL

Posted: Mon Jan 28, 2019 4:57 pm Post subject:

For those of us who are waiting on tax returns, etc... how long will the ordering be open?

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"Noise is what the Earth is made of" - David Bowie

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devinw1
Veteran Wiggler

Posted: Mon Jan 28, 2019 5:10 pm Post subject:

djs wrote:

For those of us who are waiting on tax returns, etc... how long will the ordering be open?

Second- I only had a cursory look at the mouser carts, but it looks like relatively "normal" parts- is this correct? Meaning, for those of us who stock a lot of standard parts (resistors, tl072s, 1n4148 diodes, etc) , we wouldn't need to buy much?



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

those of us who stock a lot of standard parts (resistors, tl072s, 1n4148 diodes, etc) , we wouldn't need to buy much?

If I leave the first round ordering open for all of February, would that be good? I don't have a sense for what is commonplace around here for this type of thing, but I am willing to accommodate my best to make everyone happy!

For parts, yes, I would recommend anyone with a stash to just cross-check off the mouser cart and start deleting stuff you don't need. There are a couple of less-common chips on there like the DA converter (it's also the spendiest IC at \$21), but also some white bread stuff like TL081s , LM348s, and 1N914 and 1N4148s. For caps, I would recommend using the rectangular film caps on the list, unless you know what you have is a similar dimension, just to make sure it fits on the board and doesn't stick up too high or something. 

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[!\[\]\(3470656b30b6b9ec4b12aca9c89b8502_img.jpg\) profile](#) [!\[\]\(a76428ab40aa0d9aaf430d62585f134b_img.jpg\) pm](#) [!\[\]\(0601057f552cf944442363bfac87b93b_img.jpg\) email](#)

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

[Posted: Tue Jan 29, 2019 4:26 pm](#) Post subject:

 [quote](#)  [ignore](#)

devinw1 wrote:

WHAT YOU BUY SEPARATELY:

-3X CEM3320/AS3320 VCO, 2X AS3310 ADSR, 1X AS3340 VCF

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[!\[\]\(a78984c50683e8b5d397bd863bd567b8_img.jpg\) profile](#) [!\[\]\(79115bd6378b31f4559a36686208b941_img.jpg\) pm](#) [!\[\]\(d5148d0a0d1314d4ef5c775280e4ff1c_img.jpg\) email](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Doh! Thanks, and fixed! 

[!\[\]\(ce88790706dfc79e5543e1b1439399a8_img.jpg\) profile](#) [!\[\]\(44cb32f18aae253b22906b609e6605ba_img.jpg\) pm](#) [!\[\]\(c60f0bdb4f59e9a484fe2cc8564e91a3_img.jpg\) email](#)

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

[Posted: Tue Jan 29, 2019 4:44 pm](#) Post subject:

 [quote](#)  [ignore](#)

devinw1 wrote:

Jannel wrote:

devinw1 wrote:

WHAT YOU BUY SEPARATELY:

-3X CEM3320/AS3320 VCO, 2X AS3310 ADSR, 1X AS3340 VCF

devinw1, you might want to edit that VCO 3320 :-D obviously a typo, 3340 VCO...

Doh! Thanks, and fixed! 

Now it's: "3X CEM3340/AS3350" AS3350?? ;-)

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devinw1
Veteran Wiggler

Posted: Tue Jan 29, 2019 4:47 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Jannel wrote:

devinw1 wrote:

Jannel wrote:

devinw1 wrote:

WHAT YOU BUY SEPARATELY:

-3X CEM3320/AS3320 VCO, 2X AS3310 ADSR, 1X AS3340 VCF

devinw1, you might want to edit that VCO 3320 :-D obviously a typo, 3340 VCO...

Doh! Thanks, and fixed!

Now it's: "3X CEM3340/AS3350" AS3350?? ;-)

Oh wow. Time for a

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devinw1
Veteran Wiggler

Posted: Wed Jan 30, 2019 12:04 am Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Finally got the prototype panels back from the laser guy, and now everyone is happy and we have the missing modulation text added! I've also sanded and put a coat of Tung Oil and 2 coats of carnuba/citrus wax on the ends and I think they really look sharp. I also gave it a final tune using the tuning app in Logic Pro and it's sounding top notch (I'll include my tuning procedure in the build doc, because for love of god the tuning procedure in the original SCI documentation is the most convoluted thing I've ever seen, and really is a good way to be led astray IMO .

So now the ONLY thing left is the pitch/mod wheels, and those parts SHOULD be here tomorrow. For now some pics:





I took her downstairs to jam a bit on the Rhodes electric piano with it. A nice combo, sound-wise and visually if you ask me!:



And just to prove all the LEDs work.... Of course the LFO I happen to catch while off, but trust me, it works. The power light and LFO light are upgrades from the original Pro-One which only had a gate light 😊:



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Cablebasher
Wiggling with Experience

Joined: 03 Aug 2013
Last Visit: 26 Mar 2019

Posted: Wed Jan 30, 2019 6:43 am Post subject:

[quote](#) [ignore](#)

Looks amazing.

And looks like a simple build as it's all chip based.



Posts: 388

Location: England, UK.

I don't think I'd be as interested if it was just a module or desktop but the fact that this is a chance to build a full keyboard monosynth is very cool.

And not something you see much (ever) in the SDIY world?

Woo hoo!

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[quote](#) [ignore](#)

kragg

Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404

Location: Nemo Point

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[posted: Wed Jan 30, 2019 7:53 am](#) Post subject:

devinw1
Veteran Wiggler

[posted: Wed Jan 30, 2019 11:53 am](#) Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Cablebasher wrote:

Looks amazing.

And looks like a simple build as it's all chip based.

I don't think I'd be as interested if it was just a module or desktop but the fact that this is a chance to build a full keyboard monosynth is very cool.

And not something you see much (ever) in the SDIY world?

Woo hoo!

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Yes, the build is not so hard. There is a bit of time in making all the cables that go from the board to the jacks, but this is just time, not difficult.

The only sort of special electronic step for the build is each VCO needs a set of 6 resistors matched to each other to .01% (so the osc will remain in tune when switching octaves with the switch). I just bought a bag of 30 0.1% and binned them out with my multimeter with cheapie Amazon Kelvin clamps and it worked fine. Other than that, there's no component matching (transistors, etc.). Just plug and chug. 😊

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[quote](#) [ignore](#)

grantb5
Common Wiggler

[posted: Wed Jan 30, 2019 12:41 pm](#) Post subject:

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

devinw1 wrote:

The only sort of special electronic step for the build is each VCO needs a set of 6 resistors matched to each other to .01% (so the osc will remain in tune when switching octaves with the switch). I just bought a bag of 30 0.1% and binned them out with my multimeter with cheapie Amazon Kelvin clamps and it worked fine. Other than that, there's no component matching (transistors, etc.). Just plug and chug. 😊

Never heard of those clamps before. Just bought some. 😊

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Sparky

Common Wiggler

Posted: Wed Jan 30, 2019 1:08 pm Post subject:

[quote](#) [edit](#) [ignore](#)

Joined: 02 Sep 2014

Last Visit: 20 Apr 2019



Posts: 158

Location: California, USA

grantb5 wrote:

devinw1 wrote:

The only sort of special electronic step for the build is each VCO needs a set of 6 resistors matched to each other to .01% (so the osc will remain in tune when switching octaves with the switch). I just bought a bag of 30 0.1% and binned them out with my multimeter with cheapie Amazon Kelvin clamps and it worked fine. Other than that, there's no component matching (transistors, etc..). Just plug and chug. 😊

Never heard of those clamps before. Just bought some. 😊

Me too!

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[profile](#) [pm](#) [email](#)

Sparky

Common Wiggler

Joined: 02 Sep 2014

Last Visit: 20 Apr 2019



Posts: 158

Location: California, USA

Posted: Wed Jan 30, 2019 1:11 pm Post subject: Looking good

[quote](#) [edit](#) [ignore](#)

Those latest pictures are great.

I'm procrastinating a little, but I think I have myself convinced to build. Getting the keybed and the TurboCPU are a bit of a concern. I have an old X-Station 49 that I might consider "cutting down". I saw a thread that mentions you can do this, but "some traces have to be cut" is the only info I found.

Any news on the contact from the TurboCPU guy? Still looks like they are out of stock.

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grantb5

Common Wiggler

Joined: 12 Oct 2010

Last Visit: 20 Apr 2019



Posts: 69

Posted: Wed Jan 30, 2019 1:23 pm Post subject: Re: Looking good

[quote](#) [ignore](#)

Sparky wrote:

Any news on the contact from the TurboCPU guy? Still looks like they are out of stock.

They will be available. No worries there.

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

Posted: Wed Jan 30, 2019 1:37 pm Post subject: Re: Looking good

[quote](#) [ignore](#)

Sparky wrote:

I have an old X-Station 49 that I might consider "cutting down". I saw a thread that mentions you can do this, but "some traces have to be cut" is the only info I found.

You can cut down a 49 key fatar bed, I have done it, BUT it won't work with this synth. You have to cut some traces and run a wire from one trace back to the ribbon connector, but the problem is the diode matrix arrangement is different than what the Pro-One CPU expects on the 49 key (cut to 37) vs the actual 37 key.

Do not worry though, you can certainly buy a new bed from Getagrove.it and TechMechs Vintage Synth has assured me he can supply them as well. 😊

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Altitude909

Super Deluxe Wiggler

Posted: Wed Jan 30, 2019 2:49 pm Post subject:

[quote](#) [ignore](#)

If you are still finalizing the PCB, add a SMD resistor footprint between those 0.01% resistors.. Much cheaper and available than TH ones and no hand matching needed



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

[profile](#) [pm](#)

[Post](#) [subject](#)

[quote](#) [ignore](#)

If you are still finalizing the PCB, add a SMD resistor footprint between those 0.01% resistors.. Much cheaper and available than TH ones and no hand matching needed

What you mean it's easy to get .01% 100k in SMD? I'm looking on Mouser and don't see that.?

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[profile](#) [pm](#)

Sunshine Jones
Common Wiggler



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019



Posts: 155
Location: San Francisco

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[profile](#) [pm](#) [email](#) [www](#)

[quote](#) [ignore](#)

This is so thrilling, and I'm so impressed.

But, I have a lame question and observation:

The side panels with the curve in them really kind of bum me out.

They take much of the "pro one" away from how it looks.

Have you messed around with this using a straight line for the panels?
Can it be self contained without side panels?

It seems so trivial, but it's real for me, and I thought I'd ask about it.

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[grantb5 wrote:](#)

Yeago has some 0.1% parts in 0603. I noticed in one of the filters that 0.01% was an options but didn't go down that rabbit hole. If you google this is should give you a starting point: RT0603BRC103K6L

Haha, first one I found is \$11. P0603Z3901LBW

[quote](#) [ignore](#)

That's the problem. They charge a ton. You can get .01% in TH but they are like \$4 a resistor. Whereas I have twice now bought \$10 worth of .1% and gotten the required 2 sets of 6. Then you keep the others for projects. I bet there's an easy way to statistically figure out how many .1% you need to buy to get 2 groups of 6 that are .01% within each other, assuming the .1% is a Gaussian distribution... but I suck at statistics, so I just bought 30. 😊

I suppose if people need/want, for an extra amount, I can just buy a big roll and bin them up for people.

jbdriver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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[D Posted: Wed Jan 30, 2019 7:36 pm Post subject:](#)

[quote](#) [ignore](#)

The wheels are placed lower than the main control surface on the clone, and straight side panels would probably look a little odd in this configuration. It seems like the main control surface is tilted up a little bit in the clone as well (could be the camera angle fooling me). Honestly I think this new version with the curved side panels is a design improvement. I can appreciate the desire to keep it looking vintage though.

[D Posted: Wed Jan 30, 2019 10:14 pm Post subject:](#)

[quote](#) [ignore](#)

[devinw1 wrote:](#)

[Altitude909 wrote:](#)

If you are still finalizing the PCB, add a SMD resistor footprint between those 0.01% resistors.. Much cheaper and available than TH ones and no hand matching needed

What you mean it's easy to get .01% 100k in SMD? I'm looking on Mouser and don't see that.?



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler

[D Posted: Thu Jan 31, 2019 12:32 am Post subject:](#)

[quote](#) [ignore](#)

[Altitude909 wrote:](#)

[devinw1 wrote:](#)

[Altitude909 wrote:](#)

If you are still finalizing the PCB, add a SMD resistor footprint between those 0.01% resistors.. Much cheaper and available than TH ones and no hand matching needed

What you mean it's easy to get .01% 100k in SMD? I'm looking on Mouser and don't see that.?



Ok, not nearly as plentiful as I thought but they are out there:
<https://www.newark.com/multicomp/mctf0805tty1003/res-thin-film-100k-0-01-0-0625w/dp/41P0399>

Oh nice. That's not so bad too. Costs about the same as doing what I did. I'm still working on the final board tweaks so I think adding a 2012 SMD footprint in parallel with each of the 12 .01" TH resistors should probably not be a problem!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

Posted: Thu Jan 31, 2019 12:43 am Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Sunshine Jones wrote:
This is so thrilling, and I'm so impressed.
But, I have a lame question and observation:
The side panels with the curve in them really kind of bum me out.
They take much of the "pro one" away from how it looks.
Have you messed around with this using a straight line for the panels?
Can it be self contained without side panels?
It seems so trivial, but it's real for me, and I thought I'd ask about it.

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devinw1
Veteran Wiggler

Posted: Thu Jan 31, 2019 12:57 am Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909
Super Deluxe Wigglie



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

Posted: Thu Jan 31, 2019 7:36 am Post subject:

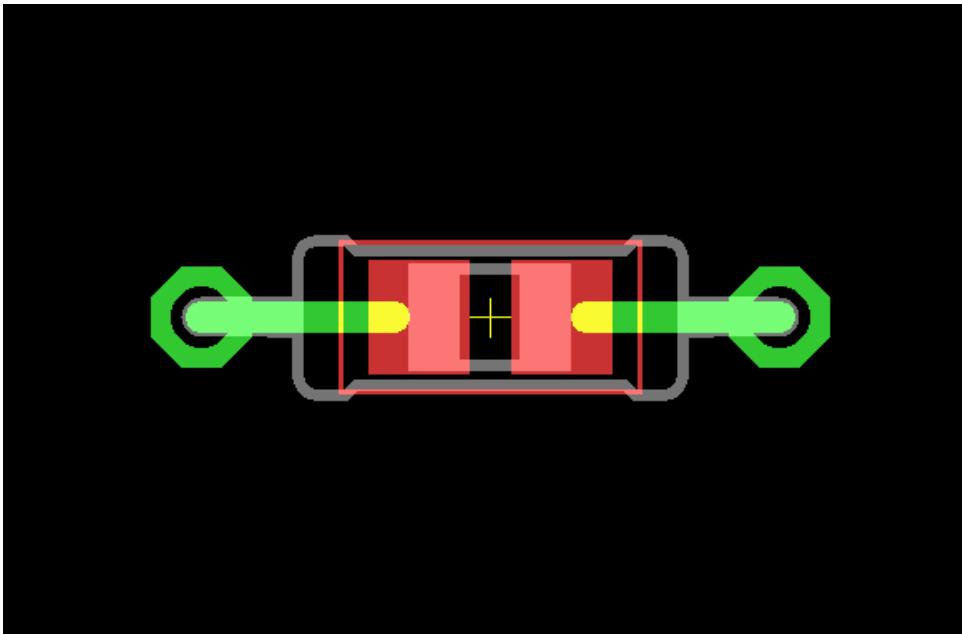
[quote](#) [ignore](#)

devinw1 wrote:

[..]

Oh nice. That's not so bad too. Costs about the same as doing what I did. I'm still working on the final board tweaks so I think adding a 2012 SMD footprint in parallel with each of the 12 .01" TH resistors should probably not be a problem!

I've done it like this:



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grantb5
Common Wigglie

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



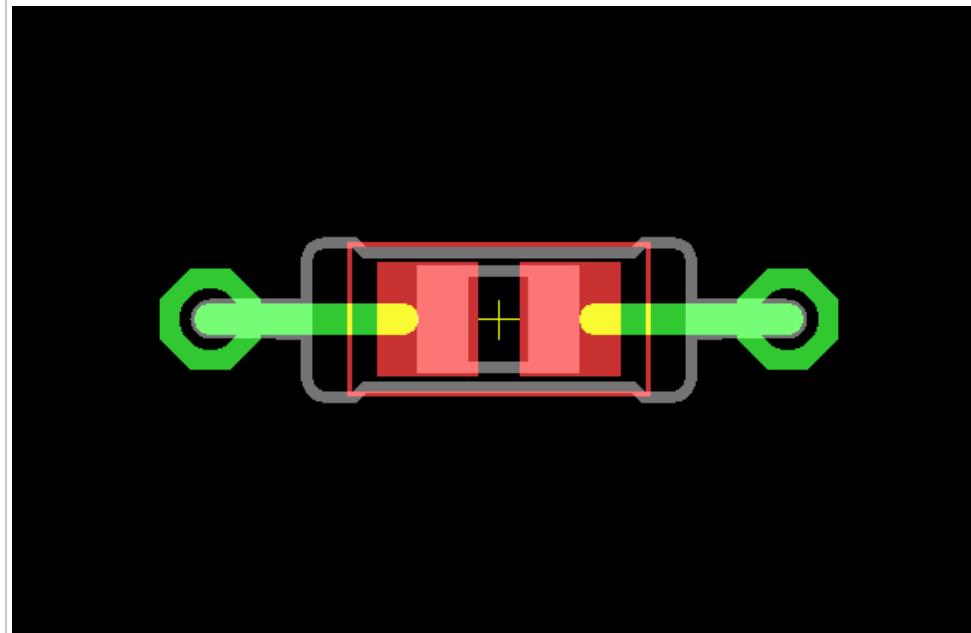
Posts: 69

Posted: Thu Jan 31, 2019 9:15 am Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

I've done it like this:



What size parts are those?

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

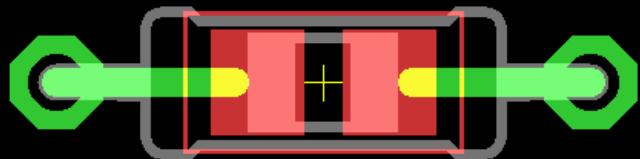


Posts: 2969
Location: Meesheegan

grantb5 wrote:

Altitude909 wrote:

I've done it like this:



What size parts are those?

0805 but 0603 will fit fine also

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devinw1
Veteran Wiggle



Posted: Thu Jan 31, 2019 11:19 am Post subject:

[quote](#) [ignore](#)

Aha, smart! I will do this, no problem. Thanks for the idea!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

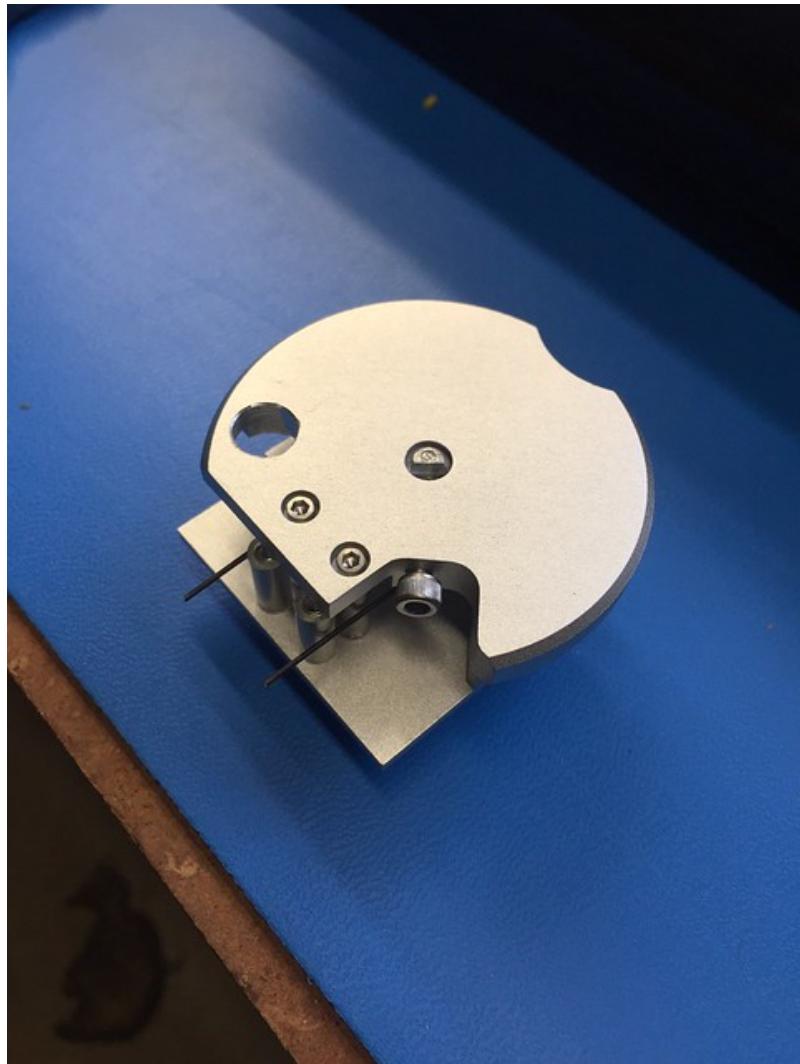


Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Fri Feb 01, 2019 9:00 pm Post subject:

[quote](#) [ignore](#)

Got the pitch and mod wheels built. Aside from one little issue that required drilling an extra hole that you'll never see (and will be corrected for future builds), they work great! I'm glad I went with the clear anodize. It's just a little "pop" right by the key area. So now the prototype unit is 100% complete!





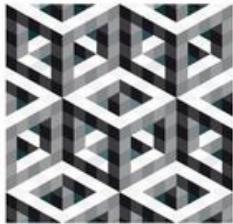
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Posted: Sat Feb 02, 2019 4:39 am Post subject:

[quote](#) [ignore](#)

The mod and pitch wheels are looking super solid!



Joined: 17 Dec 2016

Last Visit: 12 Apr 2019



Posts: 38

Location: Germany

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[profile](#) [pm](#)

Posted: Sat Feb 02, 2019 5:03 am Post subject:

[quote](#) [ignore](#)

That last picture looks wonderful indeed !

<http://kragg.fr/>



Joined: 15 Dec 2011

Last Visit: 18 Apr 2019



Posts: 404

Location: Nemo Point

[Back to top](#) [profile](#) [pm](#) [email](#)**tobb**

Veteran Wiggler

Joined: 26 Nov 2011
Last Visit: 19 Apr 2019

Posts: 714

Posted: Sat Feb 02, 2019 5:45 am Post subject:

[quote](#) [ignore](#)

wow,nice those wheels!

[Back to top](#) [profile](#) [pm](#) [email](#)**Altitude909**

Super Deluxe Wiggler

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019Posts: 2969
Location: Meesheegan[Back to top](#) [profile](#) [pm](#) [email](#)**devinw1**
Veteran WigglerJoined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Feb 02, 2019 11:42 am Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

Those wheels are machined?

Yes!

[Back to top](#) **FactoryDefault**

Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

[Back to top](#) **devinw1**

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

 FactoryDefault wrote:**devinw1 wrote:**

Your estimated total build cost = 599USD + Mouser Carts(267USD)+TurboCPU(100USD)+Keybed(68USD)+CEM Chips (15USD) = 1047USD

"Honey. What happened to the tax refund?"

[Back to top](#) **devinw1**

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

All joking aside, I'm not sure if I have scared everyone away with the pricing? But, as I said, I really did my best on that and am not pocketing near enough to cover the work I put in.. it's a labor of love. But, if people cannot afford it I do understand.

If everyone wouldn't mind taking a second and let me know by posting that you are for sure planning on putting a deposit down for a kit, that would be helpful. If there are 1 or 2, I won't be able to even justify ordering the materials. I really need to get to about the 10 kits mark for it to make sense.

And I do plan on figuring out shipping and calculating those costs soon too.

[Back to top](#) **Grooverman**
Learning to WiggleJoined: 16 Jul 2013
Last Visit: 20 Apr 2019

Posts: 22

[Post](#): Sat Feb 02, 2019 2:15 pm Post subject:

I'm still in for one kit!

For me the original Pro One is sort of a cheap plastic toysynt...this looks to be more of a Panzer Pro!

[Back to top](#) **devinw1**
Veteran Wigglie[Post](#): Sat Feb 02, 2019 2:33 pm Post subject: **Grooverman** wrote:

I'm still in for one kit!

For me the original Pro One is sort of a cheap plastic toysynt...this looks to be more of a Panzer Pro!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR[Back to top](#) **Altitude909**
Super Deluxe Wigglie[Post](#): Sat Feb 02, 2019 2:34 pm Post subject: **devinw1** wrote:

All joking aside, I'm not sure if I have scared everyone away with the pricing? But, as I said, I really did my best on that and am not pocketing near enough to cover the work I put in.. it's a labor of love. But, if people cannot afford it I do understand.

If everyone wouldn't mind taking a second and let me know by posting that you are for sure planning on putting a deposit down for a kit, that would be helpful. If there are 1 or 2, I won't be able to even justify ordering the materials. I really need to get to about the 10 kits mark for it to make sense.

And I do plan on figuring out shipping and calculating those costs soon too.

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019Posts: 2969
Location: Meesheegan[Back to top](#) **FactoryDefault**
Common Wigglie[Post](#): Sat Feb 02, 2019 3:05 pm Post subject: **devinw1** wrote:

All joking aside, I'm not sure if I have scared everyone away with the pricing?

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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[profile](#) [pm](#)

JAO
Common Wiggler



Joined: 06 Jan 2017
Last Visit: 20 Apr 2019



Posts: 199
Location: Ireland

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[profile](#) [pm](#) [email](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

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[profile](#) [pm](#)

kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019

[profile](#) [pm](#)

[quote](#) [ignore](#)

devinw1 wrote:

All joking aside, I'm not sure if I have scared everyone away with the pricing? [...] If everyone wouldn't mind taking a second and let me know by posting that you are for sure planning on putting a deposit down for a kit, that would be helpful. [...]

And I do plan on figuring out shipping and calculating those costs soon too.

I am still unsure : it might depend a lot on the shipping costs and VAT... (which may exceed what i can afford due to the weight). The synth looks wonderful, with the metal case and the nice keyboard, but it adds a lot of size and weight, so this was one of the reasons why i was interested into a desktop, keyboardless version.

I will be able to give you a firm answer once i know the shipping costs and VAT (and if a desktop version could be planned).



Posts: 404
Location: Nemo Point

<http://kragg.fr/>

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Jannel
Wiggling with Experience

Posted: Sun Feb 03, 2019 5:25 am Post subject:

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

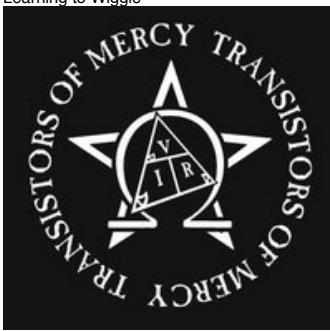


Posts: 257

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tjs
Learning to Wiggle

Posted: Sun Feb 03, 2019 7:07 am Post subject:



Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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djs
Super Deluxe Wiggle

Posted: Sun Feb 03, 2019 9:17 am Post subject:

Joined: 01 Sep 2010
Last Visit: 20 Apr 2019



Posts: 1029
Location: South Beloit, IL

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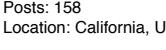
"Noise is what the Earth is made of" - David Bowie

Sparky
Common Wiggle

Posted: Sun Feb 03, 2019 10:35 am Post subject:

Joined: 02 Sep 2014

Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

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devinw1
Veteran Wiggle

Posted: Sun Feb 03, 2019 2:48 pm Post subject:

tjs wrote:

I'm still looking for a way to finance this. Did you already decide which way to go? Deposit and rest of payment when the parts are ready to ship, or full payment in advance? And do you have any idea when you will know the shipping costs to



Europe (full set that is)?

Yes, it will be deposit, let's say an even 300USD, and then you pay the rest+shipping when I have it boxed up and ready to go! I'll post shipping estimates today.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sun Feb 03, 2019 2:58 pm Post subject:

OK, shipping estimates. I will put them on the first page of the thread too. The box will be 28" x 18" x 6" and weigh about 15lbs for the full kit.

Some country estimates (USPS Priority 6-11 day delivery):

UK: 105USD Shipping. On receipt, buyer will pay Import (3.7%) + VAT (20%)

Sweden: 90USD shipping. On receipt, buyer will pay Import (3.7%) + VAT (25%)

Germany: 90USD Shipping. On receipt, buyer will pay Import (3.7%) + VAT (19%)

United States (USPS Priority Mail):

Furthest From Me (Florida): 60USD Shipping.

Close To Me (California): 40USD Shipping

I can and will of course calculate shipping for your specific country as well.

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jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019

Posts: 250
Location: Canada

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Posted: Sun Feb 03, 2019 3:05 pm Post subject:

Definitely interested in a kit! Just gotta figure out a way to get some funds - this recent 208r build chewed up all my DIY cash

Joined: 19 Aug 2015
Last Visit: 19 Apr 2019

Posts: 30
Location: Germany

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Posted: Sun Feb 03, 2019 7:04 pm Post subject:

I'm still in.

jbdiver

Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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tjs
Learning to Wiggle



Joined: 30 May 2009
Last Visit: 19 Apr 2019



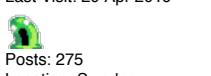
Posts: 49
Location: Berlin

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[profile](#) [pm](#) [email](#)

aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

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[profile](#) [pm](#) [email](#)

Cablebasher
Wiggling with Experience

Joined: 03 Aug 2013
Last Visit: 26 Mar 2019



Posts: 388
Location: England, UK.

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[profile](#) [pm](#)

Troubleshooter
Wiggling with Experience

Posted: Mon Feb 04, 2019 12:03 am Post subject:

[quote](#) [ignore](#)

Yep, still on the list.

Posted: Mon Feb 04, 2019 2:38 am Post subject:

[quote](#) [ignore](#)

Ok, shipping to Germany seems reasonable. Still in. Full kit with end cheeks and modulation/pitch assembly.

Posted: Mon Feb 04, 2019 3:06 am Post subject:

[quote](#) [ignore](#)

Ouff just crunched the numbers...

Total for everything including shipping, taxes, vat etc to Sweden: 1691 USD / 1478 EUR.

will have to wait for now next week I'll get my notice on the tax returns and it should play in my favour, but still, bae won't be happy...

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Posted: Mon Feb 04, 2019 3:07 am Post subject:

[quote](#) [ignore](#)

Still up for full kit to Uk.

Do we Pm you for your PayPal address for sending the deposit?

[profile](#) [pm](#)

Posted: Mon Feb 04, 2019 4:12 am Post subject:

[quote](#) [ignore](#)

Still in for a full kit.



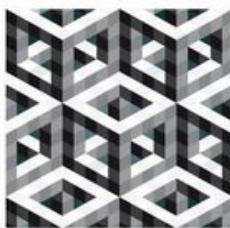
Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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maximee
Learning to Wiggle



Joined: 17 Dec 2016
Last Visit: 12 Apr 2019



Posts: 38
Location: Germany

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

maximee wrote:

It's all coming together nicely!
I'm still thinking vintage Pro-One vs your clone, but I'm leaning towards the 2021. If it feels as solid as it looks it's a no brainer.

Is there any wobble when you lean/press on the front panel? The sheet metal looks quite sturdy so it appears it should hold up pretty nicely.

Another question for us EU builders: do you see a possibility to include the turboCPU in the kit as an option? Not trying to save money, for me the major pain would be having to drive down to the customs office twice. It's always a major hassle and I assume it's like that for most of us.
As a side effect, we would save on packaging and shipping which I'd be happy to share with you as handling fees.

Maybe you could consider it, it would make things easier for us. If not, it's not a deal breaker for me though.

Oh and one more thing. Would you be willing to share DXF/DWG files for the side panels if we opt to make them ourselves?

Congrats on this brilliant kit, it all turned out fantastic!

Awesome, and thanks!

To answer your questions

- 1) Yes, the metal is quite sturdy. It is .075" thick 5052 Aluminum. There is also a CNC machined brace right in the middle that ties the top sheet metal to the bottom.
- 2) I would really prefer to have the builders source everything themselves to not complicate my life, but I suppose for EU buyers, I could just add the Turbo CPU + US Shipping (shouldn't be much) to me onto your totals and then package it together.
- 3) Yes I will provide these drawings for anyone wishing to make their own ends.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Mon Feb 04, 2019 11:56 am Post subject:

[quote](#) [ignore](#)

So, since we seem to be ticking nicely to the 10 person level, I will go ahead and open up for kit order deposits. As I said, there is still a bit of a wait (1-2 more weeks) to reengage with some of my suppliers due to Chinese New Year, but after that things should move pretty quick. I think I can start sending out kits in mid March.

The deposit amount will be for 300USD regardless of what kit level you want, paypal'd to westonde(AT)gmail(DOT)com (not typing email directly to hopefully save myself from potential lurking spambots...)

In the paypal message field, please put your email address and what level of kit you are ordering (Full, minus wood ends, minus pitch/mod wheel assemblies, or minus wood ands and minus pitch/mod wheel). I will write back a confirmation email. 😊

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019


Posts: 2969
Location: Meesheegan

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[Post](#) Posted: Mon Feb 04, 2019 12:42 pm Post subject:

[quote](#) [ignore](#)

woot. done

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Post](#) Posted: Mon Feb 04, 2019 1:14 pm Post subject:

[quote](#) [ignore](#)

I'm going to have to think of something extra to throw in your box, Altitude, for being the very first buyer! 🎉

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[profile](#) [pm](#) [email](#)

FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

[Posted: Mon Feb 04, 2019 3:07 pm Post subject:](#)

Kind of a funny coincidence i thought I'd share; I posted about this project on my FB and an old friend who I had no idea had



synths says "oh I have a vintage Pro-One"! So, I just met up with him and borrowed it, as I've actually never actually even played an old Pro-One. Well, aside from the fact that the original has about half the keys dead, they sound basically identical! So, job well done I suppose 🎉 . I just went ahead and hooked his up with the CV/Gate out of the Pro2021 so I could A/B them. I will hopefully get time to make a video of this in the next couple of days.

Anyway, The only (slight) difference I can detect is in the filter. His with the original CEM filter chip does not seem to cut off quite as low, and it is generally a little less responsive to the envelopes (to my ear) than the Alfa chip. It's subtle though, but I dare say the Alfa is better. It also could be there is something wrong with his filter too as it is very old, but tough to say. Both have basically the same behavior with resonance to me though. The volume knob, not using a Log pot like mine is pretty ridiculous. It's like full volume at 1/4 of a turn. Definitely an upgrade with the Pro2021 there.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Oh, and finally, without sounding too rude and no disrespect SCI, the vintage Pro-One really feels like a big cheap piece of plastic!! 🤦

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Grooverman
Learning to Wiggle

Joined: 16 Jul 2013
Last Visit: 20 Apr 2019



Posts: 22

devinw1 wrote:

Oh, and finally, without sounding too rude and no disrespect SCI, the vintage Pro-One really feels like a big cheap piece of plastic!! 🤦

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tjs
Learning to Wiggle

Posted: Tue Feb 05, 2019 3:52 am Post subject:

Deposit sent. (too(dot)biased...)



Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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Sparky
Common Wiggler

Posted: Tue Feb 05, 2019 9:48 am Post subject:

Deposit sent 🚒 😊

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

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devinw1
Veteran Wiggler

Posted: Tue Feb 05, 2019 11:18 am Post subject:

tjs wrote:



Deposit sent. (too(dot)biased...)

Got it, thanks! Email sent! 😊

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

Posted: Tue Feb 05, 2019 11:18 am Post subject:



Sparky wrote:

Deposit sent 🍻 😊

Got it, thanks! Email sent! 🎉

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

Posted: Tue Feb 05, 2019 11:20 am Post subject:



Grooverman wrote:

devinw1 wrote:

Oh, and finally, without sounding too rude and no disrespect SCI, the vintage Pro-One really feels like a big cheap piece of plastic!! 🤦

Told You so! 🎶

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

You weren't kiddin! The keybed is really really bad. Much worse quality than my vintage Odyssey for sure.

But, I told my friend I will install the TechMechs Fatar upgrade into his synth and tune it up/clean it as a thanks for borrowing it.

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hox3d
Common Wiggler

Posted: Tue Feb 05, 2019 11:24 am Post subject:

Is there a video of around?

Or sound snippets? Can't remember I've seen some.

EDIT: just to know: would you be selling PCBs only? Question might have been answered already, but this thread goes soooooo fast.

Matte-fueled habits



Joined: 02 Feb 2018
Last Visit: 19 Apr 2019

Last edited by hox3d on Tue Feb 05, 2019 11:30 am; edited 1 time in total

 Posts: 82
Location: Grenoble, Alps

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019

       Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[!\[\]\(4140c8ccc159fb98d632e8ffc6fb4584_img.jpg\)](#) [quote](#) [!\[\]\(59b894e68667e01e6edbce9fe7e9c4e5_img.jpg\)](#) [ignore](#)

hox3d wrote:

Is there a video of around?

Or sound snippets? Can't remember I've seen some.

EDIT: just to know: would you be selling PCBs only? Question might have been answered already, but this thread goes soooooo fast.

No video yet, though I would like to make one! Here is a brief sound clip:

<https://soundcloud.com/saywaht/pro2021-samples-2>

As for just PCBs, I hadn't thought about it, mainly since they are not for any specific rack format, etc... and are oddly shaped so I don't know how useful that would be for anyone without my enclosure, but we could talk about it I suppose!

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hox3d

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Common Wiggler



Joined: 02 Feb 2018

Last Visit: 19 Apr 2019



Posts: 82

Location: Grenoble, Alps

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I was just thinking about doing a super thin tabletop unit.

Yeah, that would be very elegant. But it's just an idea, if you got time I'd be curious to see a render without the keyboard!

Matte-fueled habits

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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□ Posted: Tue Feb 05, 2019 1:00 pm Post subject:

[quote](#) [ignore](#)

hox3d wrote:

I was just thinking about doing a super thin tabletop unit.

Yeah, that would be very elegant. But it's just an idea, if you got time I'd be curious to see a render without the keyboard!

If I get a chance, I will. Keep in mind, the only way to get it super thin would be to ditch the onboard PSU/transformer and power it with a "brick" though. Sort of a classic tradeoff.

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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□ Posted: Wed Feb 06, 2019 12:05 pm Post subject:

[quote](#) [ignore](#)



Hey ya'll, I updated the first page with the ordering info and deleted the duplicate within the thread. You also might notice I renamed "Full Kit" to "Main Kit". This was simply to reduce any confusion, as there was a possibility that "Full" might be construed as you get EVERYTHING, but you actually do have to buy the Mouser carts, etc... 😊. I wish I could sell you guys a turn key setup for 600\$, but then you'd have to call me Uli Behringer 🤪. Anyway, "Main Kit" is now what I will refer to as the old "Full Kit" (as in the one that has no "delete" options such as no wood panels, etc..).

Anwyay, about your business and big thanks to those who have sent deposits so far! 🎉🎉🎉

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Sparky

Common Wiggler

Joined: 02 Sep 2014

Last Visit: 20 Apr 2019



Posts: 158

Location: California, USA

□ Posted: Wed Feb 06, 2019 12:26 pm Post subject:

That's a good move. It could have been confusing!

Onto Tayda... as it was mentioned a while back in the thread.

I order quite frequently from Tayda, Always pleased with them. I've been looking through the mouser carts to see if some of the more pricey items are available there. Of course, the headers/connectors are not, but a lot of other items are (film caps etc).

I see that Tayda have some slide switches too. I wonder if any of them work, since mouser are a bit pricey.

For example: <https://www.taydaelectronics.com/slide-switch-2p2t-solder-lug-5-5a-250vac.html>
(Of course, now they are out of stock!)

Anyway, when we get close, I think I might work up a Tayda cart to see if it is indeed much of a savings over mouser for those parts.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Sparky wrote:

That's a good move. It could have been confusing!

Onto Tayda... as it was mentioned a while back in the thread.

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For example: <https://www.taydaelectronics.com/slide-switch-2p2t-solder-lug-5-5a-250vac.html>
(Of course, now they are out of stock!)

Anyway, when we get close, I think I might work up a Tayda cart to see if it is indeed much of a savings over mouser for those parts.

That would be awesome! Mouser is not necessarily the cheapest, just convenient.

Re: the slide switches: Be careful those ones are solder lug. Those wouldn't work, you need PCB mount. Those big lugs won't fit through the holes on the PCB. Also, need to see if the actuator height is the same as the ones I picked.

That being said, there may very well be cheaper options. Just check out the dimensioned drawing for the C&K one I chose and note the similarities.

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

Posts: 2969
Location: Meesheegan

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devinw1 wrote:

.. That being said, there may very well be cheaper options....

just my \$0.02: If you're going to spend \$1000+ on a kit and spend the time to build it, splurge the extra buck for the nice switches

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

Altitude909 wrote:

devinw1 wrote:

.. That being said, there may very well be cheaper options....

just my \$0.02: If you're going to spend \$1000+ on a kit and spend the time to build it, splurge the extra buck for the nice switches

Yeah, that is certainly a valid point.

[Back to top](#) **devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Wed Feb 06, 2019 3:51 pm Post subject:

[quote](#) [ignore](#)**Altitude909** wrote:**devinw1** wrote:

..
That being said, there may very well be cheaper options....

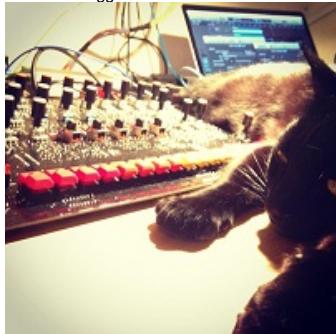
just my \$0.02: If you're going to spend \$1000+ on a kit and spend the time to build it, splurge the extra buck for the nice switches

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Can't say I disagree with you on that one haha!

Plus, the ones I used, there's like thousands in stock at Mouser. One of the many variables you gotta juggle when putting something like this together. Sucks to get to show time and find you spec'd something that there's only 2 of left in stock and has a

50 week lead time.

 **FactoryDefault**
Common Wiggler

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

□ Posted: Wed Feb 06, 2019 4:11 pm Post subject:

[quote](#) [ignore](#)**Sparky** wrote:**Altitude909** wrote:**devinw1** wrote:

..
That being said, there may very well be cheaper options....

just my \$0.02: If you're going to spend \$1000+ on a kit and spend the time to build it, splurge the extra buck for the nice switches

Yeah, that is certainly a valid point.

[Back to top](#) **devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Wed Feb 06, 2019 5:42 pm Post subject:

[quote](#) [ignore](#)**FactoryDefault** wrote:**Sparky** wrote:**Altitude909** wrote:**devinw1** wrote:

..
That being said, there may very well be cheaper options....

just my \$0.02: If you're going to spend \$1000+ on a kit and spend the time to build it, splurge the extra buck for the nice switches

Yeah, that is certainly a valid point.

As someone who has used plenty of gear with intermittent slide switches, that would be the last item I would want

to save money on.



The old Pro-One I just borrowed has 4-5 of them that work horribly. One has basically packed up entirely as open circuit. Granted it's old, but interestingly all of the original slide switches on my MK1 Arp Odyssey work great. 🤯

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Thu Feb 07, 2019 8:28 pm Post subject:

I sure did do that deposit thing.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Fri Feb 08, 2019 11:18 am Post subject:

grantb5 wrote:

I sure did do that deposit thing.



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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

Posted: Fri Feb 08, 2019 12:05 pm Post subject:

@devinw1 How is that A/B video test with the old ProOne coming along? 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Fri Feb 08, 2019 12:44 pm Post subject:

Sparky wrote:

@devinw1 How is that A/B video test with the old ProOne coming along? 😊

Well, I ended up doing a quick tune-up on my friend's Pro-One because so many pots were dirty and switches were non-contacting. I finished last night and it's 100% now so I'll try and do something this weekend.

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aabbcc
Wiggling with Experience

Posted: Fri Feb 08, 2019 3:45 pm Post subject:

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

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tempco01
Learning to Wiggle

Joined: 29 Jan 2015
Last Visit: 19 Apr 2019



Posts: 11
Location: Midlands, UK

Ok so I've got a set of all the rare IC's needed, ordered before I knew the final price of this project and am realizing I ain't going to afford the kit!!

3x CA3340 (legit ones from Dslman) and the rest are Alfa chips, pm me if interested

[profile](#) [pm](#) [email](#)

[Post](#) Posted: Sat Feb 09, 2019 6:27 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

hox3d wrote:

Is there a video of around?

Or sound snippets? Can't remember I've seen some.

EDIT: just to know: would you be selling PCBs only? Question might have been answered already, but this thread goes soooooo fast.

No video yet, though I would like to make one! Here is a brief sound clip:

<https://soundcloud.com/saywaht/pro2021-samples-2>

As for just PCBs, I hadn't thought about it, mainly since they are not for any specific rack format, etc... and are oddly shaped so I don't know how useful that would be for anyone without my enclosure, but we could talk about it I suppose!

I would also be interested in just buying the PCB's, If its something you're prepared to offer. 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Whipped out a quick comparison video! Yeah, my playing sucks. I'm a drummer, cut me some slack 😊
[video]<https://www.youtube.com/watch?v=i0gcPrDeJhQ&feature=youtu.be>

<https://www.youtube.com/watch?v=i0gcPrDeJhQ&feature=youtu.be>

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[profile](#) [pm](#) [email](#)

[Post](#) Posted: Sat Feb 09, 2019 7:33 pm Post subject:

[quote](#) [edit](#) [ignore](#)

That's awesome. Sounds great. Also, this video make the real ProOne look like a DIY one!

Thanks for posting this.

[profile](#) [pm](#) [email](#)

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

[Back to top](#)

devinw1
Veteran Wiggler

Posted: Sat Feb 09, 2019 10:48 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Back to top](#)

Sparky wrote:



That's awesome. Sounds great. Also, this video make the real ProOne look like a DIY one!

Thanks for posting this.

Haha! Not an problem!



Also can anyone tell me how to make video embedding work on here? Putting the YouTube link between the [video] tags does not seem to work

[profile](#) [pm](#) [email](#)

jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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Posted: Sat Feb 09, 2019 11:00 pm Post subject:

[quote](#) [ignore](#)

I couldn't hear a difference between the real thing and the clone, and the clone actually looks better. Well done! I'm psyched about this project now.

[profile](#) [pm](#) [email](#)

diophantine
Super Deluxe Wiggler



Joined: 10 Jan 2011
Last Visit: 20 Apr 2019



Posts: 2053
Location: San Diego, CA, USA

Posted: Sat Feb 09, 2019 11:21 pm Post subject:

[quote](#) [ignore](#)

This project looks awesome & I've been watching the thread on and off.

I have a Pro-One but honestly this looks like it would be a lot more reliable than mine, not to mention a lot of fun to build!

A few questions/things to confirm:

This is all through-hole, except for a few things that have alternate footprints for SMD chips, correct?

What's the deadline for the deposit? Looks like end of February?

What's the anticipated date for the final payment?

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tobb
Veteran Wiggler

Posted: Sun Feb 10, 2019 5:50 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

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devinw1
 Veteran Wiggler

 Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR

Thanks!

- 1) Yes it's all through hole except for the option to use the AS3280 OTA instead of CA3280, and the 2 groups of 6 0.01% matched resistors have both through hole and SMD option.
- 2) I had suggested end of February and didn't really get any feedback either way, but I'm totally fine with that. I can pull it in earlier by a week too if people want. The sooner we cut it off, the sooner I order the first batch of materials! 😊
- 3) I hope to get out the first batch of kits mid to late March, so when that happens, the final payment+shipping will be made and off they go! 😊

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devinw1
 Veteran Wiggler

 Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR
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Sparky
 Common Wiggler

 Joined: 02 Sep 2014
 Last Visit: 20 Apr 2019

 Posts: 158
 Location: California, USA
[Back to top](#)

djs
 Super Deluxe Wiggler

 Joined: 01 Sep 2010
 Last Visit: 20 Apr 2019

 Posts: 1029
 Location: South Beloit, IL
[Back to top](#)

devinw1
diophantine wrote:

This project looks awesome & I've been watching the thread on and off.

I have a Pro-One but honestly this looks like it would be a lot more reliable than mine, not to mention a lot of fun to build!

A few questions/things to confirm:

This is all through-hole, except for a few things that have alternate footprints for SMD chips, correct?

What's the deadline for the deposit? Looks like end of February?

What's the anticipated date for the final payment?

Posted: Sun Feb 10, 2019 8:19 pm Post subject:

Thanks for all the positive comments from everyone else btw! 🎉

Posted: Mon Feb 11, 2019 12:26 am Post subject:

Sooner the better for me. 😊

Posted: Mon Feb 11, 2019 7:47 am Post subject:

Unfortunately unexpected medical bills are killing my ability to buy in to this :(Will be watching though, as it's an awesome project.

"Noise is what the Earth is made of" - David Bowie

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[quote](#) [ignore](#)

Sorry to hear, djs and hope everything is OK with you!

I'm betting at some point I'll end up doing a 2nd run though!

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Back to top](#)

[quote](#) [ignore](#)

[quote](#) [ignore](#)

BTW, tentative order window for this run is Sunday 02/24! 

groove
Common Wiggler



Posts: 213
Location: NY

[quote](#) [ignore](#)

devinw1 wrote:

BTW, tentative order window for this run is Sunday 02/24! 

sent a deposit this morning. Thanks for all of the work you put into this. I really love that it is a complete keyboard!

pete

<http://loudshow.tumblr.com>

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[quote](#) [ignore](#)

diophantine
Super Deluxe Wiggler



Joined: 10 Jan 2011
Last Visit: 20 Apr 2019

[quote](#) [ignore](#)

devinw1 - Thanks for your previous answers to my questions! Sadly I won't be able to join in on this run... but hopefully it does well and there will be a second run!



Posts: 2053
Location: San Diego, CA, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019

Posts: 311
Location: Belgium

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devinw1
Veteran Wiggler

Troubleshooter wrote:

Just arrived back from a long ski holliday.
Deposit sent.



Received and confirmation sent!



Hope you had a good time on the slopes!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Posted: Tue Feb 19, 2019 11:18 am Post subject:

[quote](#) [ignore](#)

Super boring post alert:

Just got my order of 100 custom torsion springs for the pitch bender assemblies. I looked very hard and it seems stock ones always have a way higher coils-to-diameter ratio than I would like, so I went custom. The prototype unit used a scavenged spring from a Yammy DX-7 unit, and this spring is almost a copy of it. This vendor had very reasonable pricing, but I did have to buy 100, but I'll be set for a while.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



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[quote](#) [ignore](#)

tobb
Veteran Wiggler



Joined: 26 Nov 2011
Last Visit: 19 Apr 2019



Posts: 714

devinw1 wrote:

but I did have to buy 100, but I'll be set for a while.

Put them over your toes and you can jump around

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devinw1
Veteran Wiggler

Posted: Tue Feb 19, 2019 1:12 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sunshine Jones
Common Wiggler



Joined: 02 Dec 2015
Last Visit: 20 Apr 2019

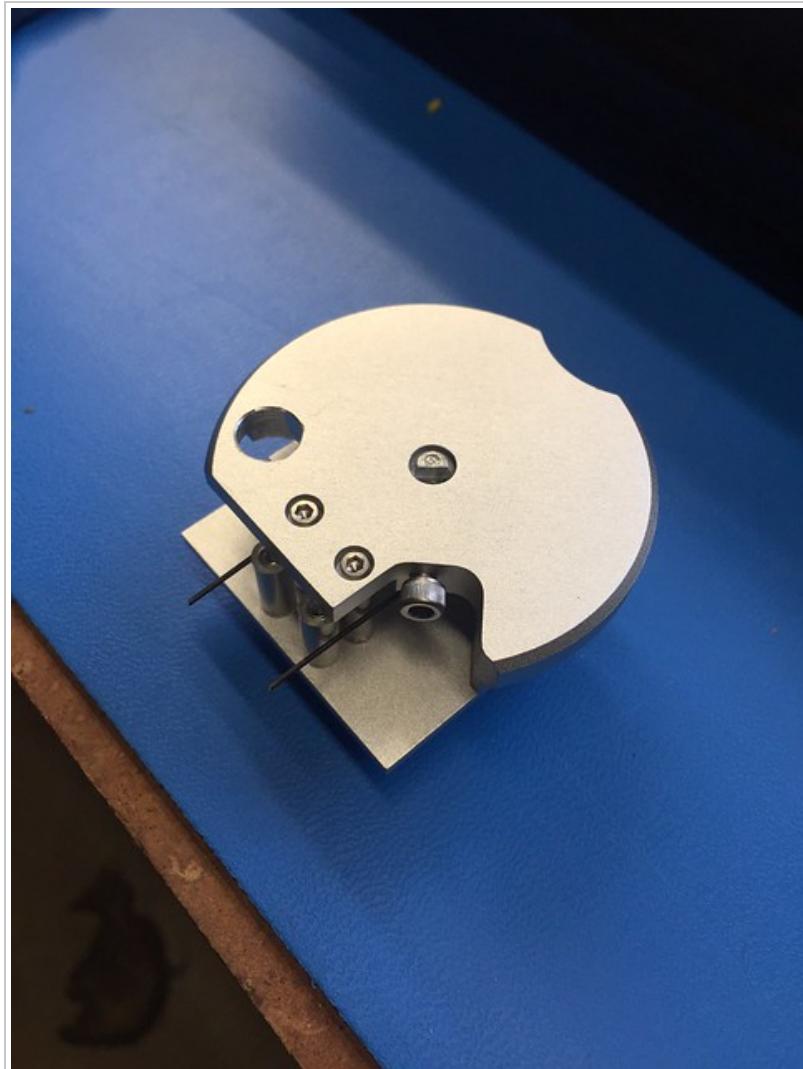


Posts: 155
Location: San Francisco

Posted: Tue Feb 19, 2019 4:21 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:



THIS is absolutely gorgeous.

I'm still scrambling and hustling up some bookings to be able to feel like I can afford this. I'm trying to aim for the deadline. toes crossed.

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[!\[\]\(ee28bce606e2d37171120e83682c1db9_img.jpg\) profile](#) [!\[\]\(15ae13bff6bb8baa2a0cd12872980d9a_img.jpg\) pm](#) [!\[\]\(6c03ddaadf42cbf2e428a2d25f9b33c3_img.jpg\) email](#) [!\[\]\(3b92de8edba2877c926b63dc3b8931b0_img.jpg\) www](#)

devinw1
Veteran Wiggler



Posted: Tue Feb 19, 2019 5:06 pm Post subject:

[!\[\]\(755e44246b0990e78b26fd36f13642ec_img.jpg\) quote](#) [!\[\]\(6734033257ba639629f75ca5c572986e_img.jpg\) ignore](#)

[quote="Sunshine Jones"]

devinw1 wrote:

THIS is absolutely gorgeous.

I'm still scrambling and hustling up some bookings to be able to feel like I can afford this. I'm trying to aim for the deadline. toes crossed.

Right on, and thanks! I'm gonna be busy building a whole bunch of those assemblies haha!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[!\[\]\(33b7a4cdea3bc59f457258ceac181432_img.jpg\) profile](#) [!\[\]\(cfe06c376e0d856e252a2afbebf73333_img.jpg\) pm](#) [!\[\]\(c630adb51c78cb47b13ade5a9cb0d82e_img.jpg\) email](#)

Troubleshooter
Wiggling with Experience



Posted: Wed Feb 20, 2019 3:43 am Post subject:

[!\[\]\(580f3dd70507d021fd1b527edc91c390_img.jpg\) quote](#) [!\[\]\(f4a18884d2c0453e15f82e4f04420573_img.jpg\) ignore](#)

Hi devinw1,

Can you confirm the FATAR 37TP/9S and cable set MBP25 E FATAR PD3 found on newgroove.it are compatible with the synth?

Kind Regards,

Gerd

Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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Jannel
Wiggling with Experience

Posted: Wed Feb 20, 2019 8:40 am Post subject:

[quote](#) [ignore](#)

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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[profile](#) [pm](#) [email](#)

grantb5
Common Wiggler

Posted: Wed Feb 20, 2019 12:23 pm Post subject:

[quote](#) [ignore](#)

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Troubleshooter wrote:

Hi devinw1,

Can you confirm the FATAR 37TP/9S and cable set MBP25 E FATAR PD3 found on newgroove.it are compatible with the synth?

Kind Regards,

Gerd

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For those not in the EU, just keep a lookout for a scrap Novation Remote 37 SL or a Studiologic CMK or TMK 37/137.

[profile](#) [pm](#)

devinw1
Veteran Wiggler

Posted: Wed Feb 20, 2019 12:48 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Troubleshooter wrote:

Hi devinw1,

Can you confirm the FATAR 37TP/9S and cable set MBP25 E FATAR PD3 found on newgroove.it are compatible with the synth?

Kind Regards,

Gerd

Yes, that's what you want!

For those who are handy and maybe want to save a buck, all the cable is a standard 20 conductor ribbon with a Tyco microMatch connector on either side. Although, at \$9.99 it's probably worth just buying.

For those buying keybeds from TechMechs vintage synth, the cable will come with it.

Last edited by devinw1 on Wed Feb 20, 2019 12:51 pm; edited 1 time in total

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devinw1
Veteran Wiggler

Posted: Wed Feb 20, 2019 12:48 pm Post subject:

[quote](#) [ignore](#)



Jannel wrote:

Deposit sent!

Thank you! Received!

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019

Posts: 250
Location: Canada

Posted: Wed Feb 20, 2019 1:23 pm Post subject:

Deposit sent!

Also: I just ordered one of the Fatar keybeds from newgroove. Shipped out to Canada, it was \$90USD total.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Feb 20, 2019 1:40 pm Post subject:

jonny_w wrote:

Deposit sent!

Also: I just ordered one of the Fatar keybeds from newgroove. Shipped out to Canada, it was \$90USD total.

Locked and loaded! Thanks!

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

Posts: 2969
Location: Meesheegan

Posted: Wed Feb 20, 2019 3:27 pm Post subject:

..

[Back to top](#)

jonny_w

Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

Posted: Wed Feb 20, 2019 3:58 pm Post subject:

[quote](#) [ignore](#)

How hard will it be to interface the Fatar 37 keybed with this project?

<https://www.newgroove.it/vendita/fatar-37tp9s-tastiera-3-ottave/>

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Feb 20, 2019 3:59 pm Post subject:

[quote](#) [ignore](#)

jonny_w wrote:

How hard will it be to interface the Fatar 37 keybed with this project?

<https://www.newgroove.it/vendita/fatar-37tp9s-tastiera-3-ottave/>

Heh. Did you read the above posts? It's exactly the one that I used for the proto.

You just need the ribbon cable (which Newgroove also sells).

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[profile](#) [pm](#) [email](#)

jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



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Posted: Wed Feb 20, 2019 4:12 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

jonny_w wrote:

How hard will it be to interface the Fatar 37 keybed with this project?

<https://www.newgroove.it/vendita/fatar-37tp9s-tastiera-3-ottave/>

Heh. Did you read the above posts? It's exactly the one that I used for the proto.

You just need the ribbon cable (which Newgroove also sells).

I meant to ask if I needed a special ribbon cable to interface it with the project - I need coffee.

[profile](#) [pm](#) [email](#)

jonny_w
Common Wiggler

[quote](#) [ignore](#)



EDIT: check MY post below for correct link, posted Fri Feb 22, 2019 9:10 am

Last edited by jonny_w on Fri Feb 22, 2019 11:13 am; edited 2 times in total

Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

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[profile](#) [pm](#) [email](#)

Posted: Wed Feb 20, 2019 4:17 pm Post subject:

[quote](#) [ignore](#)

edited

Johnny_w provides link for correct KB cable below.

Last edited by devinw1 on Fri Feb 22, 2019 1:58 pm; edited 1 time in total



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

Posted: Thu Feb 21, 2019 12:38 am Post subject:

[quote](#) [ignore](#)

SEMI URGENT NOTICE FOR BUILDERS:

I have been running through testing the final rev boards and have been having a bit of difficulty with the Alfa AS3340 VCOs as opposed to the Curtis Reproductions (CEM3340 REv Gs). I found this accidentally because I had some laying around and put them into the new boards for testing and the only way I can describe it is that the waveform pulse width sounds a bit strange and slightly jumpy. I swapped the CEMs back in and poof it works just like they did in the proto, so clearly something is different about the Alfa chips. I found something indicating other issues here:

<https://electricdruid.net/product/as3340-vco/>

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

"There seem to be some subtle differences between the Alfa chips and CEM originals, particularly with respect to pulse width. We've had one or two reports of difficulties replacing dead/missing CEM3340s with AS3340s. For this reason, if you're repairing a vintage synth, we recommend using CEM3340 Rev.Gs rather than replacing with Alfa AS3340s."

Interesting...

Anyway, at this point, I am going to change the BOM documentation to only call for using the CEM repros for this build, as we are way too late in the game to re-engineer the board for the Alfas (if this is even possible). I'm sorry if anyone already bought the Alfas!

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

□ Posted: Thu Feb 21, 2019 2:00 am Post subject:

[quote](#) [ignore](#)

Kassutronics AS3340 VCO thread here at muffs has some discussion about PW effecting vco tuning. If I remember correctly as3340 needs a 10M res between pins 4&5...at least for that specific circuitry. Might be worth a try maybe?

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

□ Posted: Thu Feb 21, 2019 9:38 am Post subject:

[quote](#) [ignore](#)

Jannel wrote:

Kassutronics AS3340 VCO thread here at muffs has some discussion about PW effecting vco tuning. If I remember correctly as3340 needs a 10M res between pins 4&5...at least for that specific circuitry. Might be worth a try maybe?

If the pins are next to each other, you can just slap a SMD resistor there

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

aabbcc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

□ Posted: Thu Feb 21, 2019 1:57 pm Post subject:

[quote](#) [ignore](#)

I still got a kit of the IC's I won't be needing since I can't afford the build:

3x CEM3340 Rev.G (reproduction)
2x AS3310
1x AS3320

2x AS3280 (soic8)

Located in Sweden but will post anywhere.

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Posted: Thu Feb 21, 2019 2:23 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

aabbcc, your post has reminded me that perhaps I wasn't clear, but this build only needs 1 CA3280 or AS3280 now. The final boards use the CA3280/AS3280 for the VCA but the glide has been switched to a LM13700 which works perfectly the same and is on the master Mouser BOM.

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Posted: Thu Feb 21, 2019 8:26 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Well, some interesting findings this evening:

- 1) I don't know if it's my batch of AS3240s, but mine suck. Both sound really weird and sort of distorted like a kazoo. One is worse than the other. Swap in a CEM3340 to either channel and boom, perfect clean wave forms.
- 2) I tried the larger (51k recommended) load resistor for the AS3240s and it didn't change anything. At this point I'm not going to worry about AS3240s. The CEMs work great, nuff said. I'm over it.
- 3) (and this is the big one) The PWM knob affecting pitch has become a bit of a red herring because it only does this on the new board. I can take the VCOs completely off both the original "B" board and the new "B" board and monitor the CV summing pin of the VCO and move the PWM pot and on the original board, no change. On the new board, the voltage swings about +/-5mV. This manifests itself as an audible pitch shift.

Now the burning question is WTF could i have changed on the new B board that would cause this. I literally hardly even budged everything. Here is what is different:

- Add 6 SMD resistor pads underneath the .01% summing resistors. On one of them I could not fit the pad because of other traces so I had to run a trace a little bit away to fit this. But, I even went so far as to cut this trace and drill the via (since I am using TH resistors on this build), and still the same issue.
 - Add SMD footprint for AS3280 in parallel to original CA3280 footprint.
 - Change the filter CV summing op amp from TL082 to TL081.
- That's it! AFAIK they should be the same boards. I'm a bit at a loss.

Keep in mind I'm powering both boards of the same PSU for all these tests also.

At this point if I can't figure this out, I'm going to have to just roll back to the prototype "B" board design for the kits and everyone will have to just use TH resistors for the .01% summing resistors. But, I'll look at it a little bit more. Input from you electrical gurus would be appreciated!

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YannickD
Learning to Wiggle

Joined: 19 Aug 2015
Last Visit: 19 Apr 2019



Posts: 30
Location: Germany

[Back to top](#)

[Post](#) Posted: Fri Feb 22, 2019 6:14 am Post subject:

[quote](#) [ignore](#)

Just sent the deposit your way. Hope the PWM drift can be fixed.

jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

[Back to top](#)

[Post](#) Posted: Fri Feb 22, 2019 11:10 am Post subject:

[quote](#) [ignore](#)

PSA: Alessandro @ Newgroove has been kind enough to tell me the cable I linked to before is ***incorrect***

THIS is the correct one.

<https://www.newgroove.it/vendita/doepfer-cable-set-per-mke-per-tastier e-a-23-ottave/>

Big thanks to Alessandro for catching this.

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Fri Feb 22, 2019 11:22 am Post subject:

[quote](#) [ignore](#)

RE: the PWM crosstalk issue. I worked on it more last night and found it seems to be more THIS instance of the new board, not the board itself. I did a lot of probing and found that the feedback resistor for PWM summer 1 (R170 on the original schematic) was ohming out at 80k even though it is 100k. I took the resistor off and soldered on a new one and it ohmed at 95k, and then I re-did my test of measuring the summing node of each osc while turning the PWM knob. Now the the sum only changed by +/- 1mV instead of 5-6mV... So something is definitely wonky there. I don't know what, but something is. Something very simple though. Since the summing Op amp and the VCOs are pulled out, it simply means there is some alternative path between pins 8 and 9 of the op amp socket that is about 3Meg Ohms while it should be dead open. I will investigate some more. It's really very simple circuitry, so I think I'll be able to figure this out.

Last edited by devinw1 on Fri Feb 22, 2019 11:52 am; edited 1 time in total

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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[Post](#) Posted: Fri Feb 22, 2019 11:24 am Post subject:

[quote](#) [ignore](#)

YannickD wrote:

Just sent the deposit your way. Hope the PWM drift can be fixed.

Got it, thanks!! I will send a confirmation email.

And fear not, we will get through this. There is a reason I am doing a verification build myself with the final PCBs... I want to prove I can build exactly what I'm sending you guys 😊. Part of engineering. Test and verify! 😊

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Troubleshooter

Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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Very much appreciated, keep on the good work!

jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

Just sent the deposit your way. Hope the PWM drift can be fixed.

[quote](#) [ignore](#)

devinw1 wrote:

YannickD wrote:

Just sent the deposit your way. Hope the PWM drift can be fixed.

Got it, thanks!! I will send a confirmation email.

And fear not, we will get through this. There is a reason I am doing a verification build myself with the final PCBs... I want to prove I can build exactly what I'm sending you guys 😊. Part of engineering. Test and verify! 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

jonny_w wrote:

devinw1 wrote:

Just sent the deposit your way. Hope the PWM drift can be fixed.

[quote](#) [ignore](#)

Got it, thanks!! I will send a confirmation email.

And fear not, we will get through this. There is a reason I am doing a verification build myself with the final PCBs... I want to prove I can build exactly what I'm sending you guys 😊. Part of engineering. Test and verify! 😊

We definitely appreciate the verification 😊 By the way, can you edit out the first link I posted, in your quote? It's not the correct ribbon cable. I posted the correct one above.

Done.

What the heck is the difference between the 2 btw?

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jonny_w
Common Wiggler

Joined: 07 Oct 2014
Last Visit: 20 Apr 2019

Posts: 250
Location: Canada

D Posted: Fri Feb 22, 2019 3:46 pm Post subject:

devinw1 wrote:**jonny_w wrote:****devinw1 wrote:****YannickD wrote:**

Just sent the deposit your way. Hope the PWM drift can be fixed.

Got it, thanks!! I will send a confirmation email.

And fear not, we will get through this. There is a reason I am doing a verification build myself with the final PCBs... I want to prove I can build exactly what I'm sending you guys 😊. Part of engineering. Test and verify! 🤗

We definitely appreciate the verification 🤗 By the way, can you edit out the first link I posted, in your quote? It's not the correct ribbon cable. I posted the correct one above.

Done.

What the heck is the difference between the 2 btw?

Unsure, but Alessandro @ Newgroove emailed me when I placed my order to say that the ribbon cable I bought before was the wrong one for the Fatar 37 keybed. The new link I provided was the one he directed me to get 😊

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devinw1
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR
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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019


Posts: 257

D Posted: Fri Feb 22, 2019 3:47 pm Post subject:
devinw1 wrote:

Unsure, but Alessandro @ Newgroove emailed me when I placed my order to say that the ribbon cable I bought before was the wrong one for the Fatar 37 keybed. The new link I provided was the one he directed me to get 😊

Fair enough! Thanks for getting that squared away! 🤗

Also, everyone should remember that even commercial products have their design flaws and fixes. Nobody's perfect, so let's work together if problems arise. That way the whole sdiy community wins. 🤝

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Jannel wrote:

devinw1 wrote:

And fear not, we will get through this. There is a reason I am doing a verification build myself with the final PCBs... I want to prove I can build exactly what I'm sending you guys 😊. Part of engineering. Test and verify!



Also, everyone should remember that even commercial products have their design flaws and fixes. Nobody's perfect, so let's work together if problems arise. That way the whole sdiy community wins.



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Thanks, I really appreciate that a lot. My own personal neuroses cause me to build up little issues into big ones in my head and I tend to freak out 😷, so this type of attitude does help a lot (both from the standpoint of getting the issues worked out, and my own mental health) haha! 😊

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Fri Feb 22, 2019 8:54 pm Post subject:

[quote](#) [ignore](#)

I figured out the problem with the new board, but it's quite baffling HOW it is occurring. There is a node by R170 that goes a little bit on a trace, pops to the other side for about 1/2" and then comes back and terminates at the connector to the VCO board which is disconnected. I unsoldered the only components to that node (R170, the LM348, and a blocking Cap) and measure the resistance between that node and ground, and to -5V and get about 8-10 MΩ to both...! On a brand new unpopulated board I get "OL" as in open connection reading, as it SHOULD be. So, now I have to figure out how on earth there is happening, but it seems I should have had the bad luck to pick a defective board to build with (although JLCPCB said they did full electric flying probe tests).

Here's the other kicker...I ordered 5 of these PCBs (minimum), but they sent me 6, and the 6th one (this one) has some sloppy misapplied silk screen. I wonder if they just threw that one in and it never got tested... So weird. I wouldn't have even used it but I didn't notice the silk screen was hosed until I had put like 20 components on the top side already.



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Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019

Posts: 311
Location: Belgium

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Posted: Sat Feb 23, 2019 7:10 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

I figured out the problem with the new board, but it's quite baffling HOW it is occurring. There is a node by R170 that goes a little bit on a trace, pops to the other side for about 1/2" and then comes back and terminates at the connector to the VCO board which is disconnected. I unsoldered the only components to that node (R170, the LM348, and a blocking Cap) and measure the resistance between that node and ground, and to -5V and get about 8-10 MΩ to both...! On a brand new unpopulated board I get "OL" as in open connection reading, as it SHOULD be. So, now I have to figure out how on earth there is happening, but it seems I should have had the bad luck to pick a defective board to build with (although JLCPCB said they did full electric flying probe tests).

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Could some flux residue under a ic socket for example cause a tiny bit of conduction? What cleaning process you use?

devinw1
Veteran Wiggler

Posted: Sat Feb 23, 2019 5:38 pm Post subject:

[quote](#) [ignore](#)

OK, I fixed it. It seems this particular board, the manufacturer put the fill zone closer to the pins for the VCO connector by a little bit than all the other boards. I eventually had to dig all the copper from around 3 of the pins with a xacto knife, clean everything, then solder a few jumper wires to where they should go. It ain't pretty, but it works. After all that, it's fine. No PWM/pitch cross talk whatsoever, just like my prototype. And, all the other functions of both boards work. Thanks goodness!

I think I'm going to pull the trace/pad-to-fill distance on the top side out by maybe 30-40% or so for the final boards just to buy



extra tolerance on something like this happening again. Other that, we should be right as rain.

BTW, Troubleshooter, I thought the same thing as you and started this troubleshooting exercise by removing that DIP socket entirely (this as many of you probably know, is a massive pain in the ass). 😊 My cleaning process is to do all passives and then submerge completely in hot water and brush for a while. Then I blow off with compressed air and dry completely and put all the pots and switches on. The boards are always quite clean this way, though I haven't found a great way to easily clean the flux on the pot and switch pins. It's kind of just hand detail work. If someone knows a good method, let me know!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

Posts: 2969
Location: Meesheegan

□ Posted: Sat Feb 23, 2019 8:28 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

... though I haven't found a great way to easily clean the flux on the pot and switch pins. It's kind of just hand detail work. If someone knows a good method, let me know!

Yeah, dont clean it. It's called no clean for a reason. You can spot clean the organic stuff with warm water and a tooth brush but its almost too much work for little more to gain than aesthetics

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devinw1
Veteran Wiggler



□ Posted: Sun Feb 24, 2019 11:50 pm Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

devinw1 wrote:
... though I haven't found a great way to easily clean the flux on the pot and switch pins. It's kind of just hand detail work. If someone knows a good method, let me know!

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Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

□ Posted: Mon Feb 25, 2019 2:12 am Post subject:

[quote](#) [ignore](#)

Deadline gone? Are we rolling into production stage now?





Posts: 257

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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aabccc
Wiggling with Experience

Joined: 02 Feb 2018
Last Visit: 20 Apr 2019



Posts: 275
Location: Sweden

devinw1 wrote:

Altitude909 wrote:

devinw1 wrote:

..., though I haven't found a great way to easily clean the flux on the pot and switch pins. It's kind of just hand detail work. If someone knows a good method, let me know!

Yeah, dont clean it. It's called no clean for a reason. You can spot clean the organic stuff with warm water and a tooth brush but its almost too much work for little more to gain than aesthetics

Fair enough. It's just super clean boards are soooo appealing haha!

Thats what kester 331 is for 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

aabbcc wrote:

devinw1 wrote:

Altitude909 wrote:

devinw1 wrote:

... though I haven't found a great way to easily clean the flux on the pot and switch pins. It's kind of just hand detail work. If someone knows a good method, let me know!

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Fair enough. It's just super clean boards are soooo appealing haha!

Thats what kester 331 is for 😊

That's what I'm using! PN 24-6040-6403 😊

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[quote](#) [ignore](#)

Altitude909

Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[quote](#) [ignore](#)

Troubleshooter

Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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devinw1

Veteran Wiggler



Posted: Wed Feb 27, 2019 1:49 pm Post subject:

[quote](#) [ignore](#)

Troubleshooter wrote:

I was wondering what kind or style of build documentation we could expect for this project. I really liked how DinSync did it on the Gilbert synth. It was a real joy. Hint!... 😊

Well, it won't be anything fancy and web based, but hopefully it will be enough to get it done!

I'm making it on my mac with Keynote, because that's easy for me. I'm taking lots of pictures. 😊

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Posted: Wed Feb 27, 2019 1:52 pm Post subject:

[quote](#) [ignore](#)

BTW, to everyone who ordered, I have everything on order for the kits now. Everything is on track, Right now, the pots are the long pole for order time. They will ship to me March 14th. Everything else will be to me before then. There will be some work for me to build all the pitch/mod assemblies and such, but we definitely should be on track to get all the kits out by the end of March.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

Posted: Wed Feb 27, 2019 3:27 pm Post subject:

[quote](#) [edit](#) [ignore](#)

devinw1 wrote:

BTW, to everyone who ordered, I have everything on order for the kits now. Everything is on track, Right now, the pots are the long pole for order time. They will ship to me March 14th. Everything else will be to me before then. There will be some work for me to build all the pitch/mod assemblies and such, but we definitely should be on track to get all the kits out by the end of March. 😊



Thanks for the update!

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

Posted: Fri Mar 01, 2019 2:35 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

Troubleshooter wrote:

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I'm making it on my mac with Keynote, because that's easy for me. I'm taking lots of pictures.

Pics are pretty much all that is needed. Deckard's Dream doesn't have anything else than pics (and very very vital build group in FB) and it's been around over one year already.

So all I'm saying is correct bom, silkscreen on pcb's, schematics and pictures of the mechanical side of the build and it's all good! Don't loose sleep over fancy build guides.

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Posted: Fri Mar 01, 2019 11:23 am Post subject:

[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Jannel wrote:

devinw1 wrote:

Troubleshooter wrote:

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So all I'm saying is correct bom, silkscreen on pcb's, schematics and pictures of the mechanical side of the build and it's all good! Don't loose sleep over fancy build guides.

Cool cool. Thanks, and yeah I find when I build something the best thing is to just print the Excel sheet BOM and scratch off EACH part in red pen as I stuff it. I measure each first resistor out of the batch in a bag to make sure Mouser didn't put the wrong

part in, and go! Works for me!

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Posted: Fri Mar 01, 2019 1:20 pm Post subject:

[quote](#) [ignore](#)

Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019

Posts: 311
Location: Belgium

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[profile](#) [pm](#) [email](#)

Posted: Fri Mar 01, 2019 1:45 pm Post subject:

[quote](#) [ignore](#)

devinw1
Veteran Wiggler

Troubleshooter wrote:

Has anyone contacted the MTI guy about availability of the turbo cpu? Cant seem to find one on his ebay page.



From what I gather from Grant, he is waiting on fully populated units from the PCB fab in china (he used to hand stuff them all).

I'll let him chime in on the ETA.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

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Posted: Sun Mar 03, 2019 1:42 pm Post subject: Spreadsheet of the full BOM?

@devinw1 do you have a spreadsheet BOM of the full component list at this point?

I know the mouser BOM's etc are in the first post, but I'd like to be able to check off parts I order or have in stock, then use it for the build, too.

Just wondered if you already had something?

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky wrote:

@devinw1 do you have a spreadsheet BOM of the full component list at this point?

I know the mouser BOM's etc are in the first post, but I'd like to be able to check off parts I order or have in stock, then use it for the build, too.

Just wondered if you already had something?

Check out the combo BOM here:

<https://github.com/devinw1/PRO2021>

It doesn't have MPNs but it has descriptions. I'm working on cleaning up the BOMs now and will have it all uploaded next week.

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[quote](#) [edit](#) [ignore](#)

Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

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Posted: Sun Mar 03, 2019 2:07 pm Post subject:

That'll get me started. Thanks!

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[quote](#) [edit](#) [ignore](#)

devinw1
Veteran Wiggler

Posted: Tue Mar 05, 2019 12:04 pm Post subject:

Sparky wrote:

That'll get me started. Thanks!

Check it out now. I uploaded the complete BOMs with Mouser PNs.

<https://github.com/devinw1/PRO2021>



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggle



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggle

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019


Posts: 158
Location: California, USA

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Altitude909
Super Deluxe Wiggle

Posted: Tue Mar 05, 2019 2:12 pm Post subject:

[quote](#) [ignore](#)

500 knobs are here tomorrow

Posted: Tue Mar 05, 2019 4:00 pm Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

500 knobs are here tomorrow



Posted: Tue Mar 05, 2019 4:27 pm Post subject:

[quote](#) [edit](#) [ignore](#)

Altitude909 wrote:

500 knobs are here tomorrow

Are you going to sell us knobs to the early builders?

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Posted: Tue Mar 05, 2019 4:33 pm Post subject:

[quote](#) [ignore](#)



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Hell yes i will

Sparky wrote:

Altitude909 wrote:

500 knobs are here tomorrow

Are you going to sell us knobs to the early builders?

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA



Posted: Tue Mar 05, 2019 4:35 pm Post subject:

[quote](#)

[edit](#)

[ignore](#)

Altitude909 wrote:

Sparky wrote:

Altitude909 wrote:

500 knobs are here tomorrow

Are you going to sell us knobs to the early builders?

Hell yes i will

Fantastic!



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groove
Common Wiggler

Joined: 19 Jul 2013
Last Visit: 18 Apr 2019



Posts: 213
Location: NY



Posted: Tue Mar 05, 2019 6:17 pm Post subject: Shared Mouser Cart

[quote](#)

[ignore](#)

devinw1 wrote:

I uploaded the complete BOMs with Mouser Pns.

<https://github.com/devinw1/PRO2021>

I imported both BOMs into one shared project in Mouser. Obviously use at your own risk - I did no verification other than the import.

EDIT: link removed, I am updating the cart per recommended replacement connectors. I will post a link again when it is ready.

<http://loudshow.tumblr.com>

Last edited by groove on Wed Mar 06, 2019 8:31 pm; edited 1 time in total



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devinw1
Veteran Wiggler



Posted: Tue Mar 05, 2019 6:56 pm Post subject: Re: Shared Mouser Cart

[quote](#)

[ignore](#)

groove wrote:

devinw1 wrote:

I uploaded the complete BOMs with Mouser Pns.

<https://github.com/devinw1/PRO2021>



I imported both BOMs into one shared project in Mouser. Obviously use at your own risk - I did no verification other than the import.

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=eaed_16c2f

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

A quick edit that I've discussed with Janne about: The 4 connectors for attaching the VCO boards to the main B board I found out can only go 1 orientation, so I changed to a different (and actually cheaper) connector. I haven't updated the BOM yet because I haven't tested them yet but I'm 99.9% they will be fine. Anyway, if you want to get a jump on it, the part numbers are 2 each of:

538-90147-1106
538-90147-1108
538-90120-0128
538-90120-0126

These would replace the 4 Molex "KK" series Board-to-boards on the bom.

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YannickD
Learning to Wiggle

Joined: 19 Aug 2015
Last Visit: 19 Apr 2019

Posts: 30
Location: Germany

Altitude909 wrote:

Sparky wrote:

Altitude909 wrote:

500 knobs are here tomorrow

Are you going to sell us knobs to the early builders?

Hell yes i will

Would it by chance be possible for you to ship the knobs to Devin after I bought them from you? For people overseas like me it would be very convenient to get everything in one package.

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

YannickD wrote:

Altitude909 wrote:

Sparky wrote:

Altitude909 wrote:

500 knobs are here tomorrow

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Hell yes i will

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YES PLEASE! 

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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 [quote](#)  [ignore](#)

Sure, makes its easier for me too

tjs

Learning to Wiggle



Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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Well, this is a good idea. I endorse this!

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devinw1

Veteran Wiggler

    [profile](#) [pm](#) [email](#)

 [quote](#)  [ignore](#)

Cool, Thanks for getting this going Altitude909! 

Also, a quick update for Turbo CPU. I have talked to Grant at MTG and he has gotten the first shipment of assembled units from the PCB house and is checking them out now but everything looks OK so far. He should have them back in stock soon and in line



with my ship schedule assuming no disasters so we are looking good!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

Posted: Wed Mar 06, 2019 5:41 pm Post subject:



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groove
Common Wiggle

Posted: Wed Mar 06, 2019 10:56 pm Post subject: Re: Shared Mouser Cart

Joined: 19 Jul 2013
Last Visit: 18 Apr 2019



Posts: 213
Location: NY

devinw1 wrote:

A quick edit that I've discussed with Janne about: The 4 connectors for attaching the VCO boards to the main B board I found out can only go 1 orientation, so I changed to a different (and actually cheaper) connector. I haven't updated the BOM yet because I haven't tested them yet but I'm 99.9% they will be fine. Anyway, if you want to get a jump on it, the part numbers are 2 each of:

538-90147-1106
538-90147-1108
538-90120-0128
538-90120-0126

These would replace the 4 Molex "KK" series Board-to-boards on the bom.

I couldn't figure out how to swap the parts in the existing project, so I created a new one with the updated parts:

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=ad79_cc1a44

<http://loudshow.tumblr.com>

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Sparky

Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

Posted: Thu Mar 07, 2019 10:55 am Post subject: Re: Shared Mouser Cart

[quote](#) [edit](#) [ignore](#)

devinw1 wrote:

groove wrote:

devinw1 wrote:

I uploaded the complete BOMs with Mouser PNs.

<https://github.com/devinw1/PRO2021>

I imported both BOMs into one shared project in Mouser. Obviously use at your own risk - I did no verification other than the import.

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=eaed_16c2f7

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538-90147-1106
538-90147-1108
538-90120-0128
538-90120-0126

These would replace the 4 Molex "KK" series Board-to-boards on the bom.

I use these a lot. But I get them from Tayda. I believe these are pretty much the same:

e..g Equivalent of 538-90147-1106 at mouser for \$1.96 is this for \$0.07:

<https://www.taydaelectronics.com/6-pin-2-54mm-single-row-female-pin-header.html>

For the male side, cut down to size from this strip:

<https://www.taydaelectronics.com/40-pin-2-54-mm-single-row-pin-header-strip.html>

Edit: I will say I do like the latching molex connectors used elsewhere!

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Thu Mar 07, 2019 1:12 pm Post subject: Re: Shared Mouser Cart

[quote](#) [ignore](#)

Sparky wrote:

devinw1 wrote:

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devinw1 wrote:

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<https://github.com/devinw1/PRO2021>

I imported both BOMs into one shared project in Mouser. Obviously use at your own risk
- I did no verification other than the import.

A quick edit that I've discussed with Janne about: The 4 connectors for attaching the VCO boards to the main B board I found out can only go 1 orientation, so I changed to a different (and actually cheaper) connector. I haven't updated the BOM yet because I haven't tested them yet but I'm 99.9% they will be fine. Anyway, if you want to get a jump on it, the part numbers are 2 each of:

538-90147-1106
538-90147-1108
538-90120-0128
538-90120-0126

These would replace the 4 Molex "KK" series Board-to-boards on the bom.

I use these a lot. But I get them from Tayda. I believe these are pretty much the same:

e..g Equivalent of 538-90147-1106 at mouser for \$1.96 is this for \$0.07:

<https://www.taydaelectronics.com/6-pin-2-54mm-single-row-female-pin-header.html>

For the male side, cut down to size from this strip:

<https://www.taydaelectronics.com/40-pin-2-54-mm-single-row-pin-header-strip.html>

Edit: I will say I do like the latching molex connectors used elsewhere!

Yep, those will do!

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Troubleshooter

Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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FYI :

I ordered my CA3280 from this man: <http://synton.nl/spareparts/>

He told me he has a few hundred in stock.

Lets hope they are the real deal.

Joined: 01 Oct 2015

Last Visit: 19 Apr 2019



Posts: 311

Location: Belgium

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Troubleshooter wrote:

FYI :

I ordered my CA3280 from this man: <http://synton.nl/spareparts/>

He told me he has a few hundred in stock.

Lets hope they are the real deal.

Oh really?! If those are real, I'm gonna pick up a pile at that price!

BTW I tested the AS3280 SMD chip on my verification build and so far as I can tell it works fine for the VCA.

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Sun Mar 10, 2019 12:38 am Post subject:

[quote](#) [ignore](#)

OK, so about the **MTG TurboCPU**, I have the list of brave and excited Round One buyers (myself being one of them). No rush to purchase, but here are the prices and you can message me here for the PayPal link. I'm not on Muff's religiously so please be patient. I have decent stock and am adding more as time allows. All CPUs are tested in a Pro One before shipping.

All shipping is USPS Priority Mail Small Flat Rate Box. All prices in USD.

For USA domestic, including those international buyers who want me to ship to Devin:

\$99 USD (CPU) plus \$7.90 (USPS) = \$106.90 USD

For international, me to you:

\$99 USD (CPU) plus \$36.70 (USPS) = \$135.70 USD

All CPU's are v1.40 and have been for the last few years. You don't need to reflash anything. The CPU is designed to fit into a standard **dual wiping** 28-pin DIP socket like this:

<https://www.mouser.com/ProductDetail/649-DILB28P223TLF>

I don't recommend you use a machine socket unless you check the fit first. Do not use old NOS sockets on anything, ever.

Current manual (matches v1.40 firmware):

http://www.musictechnologiesgroup.com/files/ProOneTurboCPU_User_v141.pdf

GB

[Update(s): In light of the schematics appearing]

For the **TurboCPU**, Pins 15, 16 and 17 are no-connects. The Turbo has its own oscillator and reset so the 470uH, 1uf and 1N914 aren't necessary. You can keep them though, in the event you want to drop the original 8021 in.

Also, the TurboCPU will ignore D103. The alternate arp mode is selected using a power-on default.

Last edited by grantb5 on Mon Mar 25, 2019 1:14 pm; edited 4 times in total

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[quote](#) [ignore](#)

jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

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Posted: Sun Mar 10, 2019 2:25 pm Post subject:

Devin are you okay with us having the knobs + cpu shipped to you, so they can be included in the kit shipment?

[quote](#) [ignore](#)

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

jonny_w wrote:

Devin are you okay with us having the knobs + cpu shipped to you, so they can be included in the kit shipment?

We should wait for the official word, but my understanding was that this is OK for international buyers (only).

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Cablebasher
Wiggling with Experience

Joined: 03 Aug 2013
Last Visit: 26 Mar 2019



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Grooverman
Learning to Wiggle

Joined: 16 Jul 2013
Last Visit: 20 Apr 2019



Posted: Mon Mar 11, 2019 3:40 am Post subject:

I would also like the CPU and knobs shipped together with the PCBs if this is not too much hassle.

It would save a lot on shipping and duty to Europe (I am UK based)

Cheers.

Posted: Mon Mar 11, 2019 6:04 am Post subject:

Cablebasher wrote:

I would also like the CPU and knobs shipped together with the PCBs if this is not too much hassle.

It would save a lot on shipping and duty to Europe (I am UK based)

Cheers.

Me too!

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tjs
Learning to Wiggle



Posted: Mon Mar 11, 2019 7:10 am Post subject:

Grooverman wrote:

Cablebasher wrote:

I would also like the CPU and knobs shipped together with the PCBs if this is not too much hassle.

It would save a lot on shipping and duty to Europe (I am UK based)

Cheers.

Me too!

Joined: 30 May 2009
Last Visit: 19 Apr 2019



Me too too!

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Altitude909
Super Deluxe Wigglie

Posted: Mon Mar 11, 2019 8:30 am Post subject:

Ok, so here is the story for the Knobs. They are made for standard 15mm pot shafts, the pots here are 25 and have a really long D portion. You will need to snip off ~5mm to get them to sit right. Its not something you need to be accurate about, they just need to be cut down so the knob stops on the round part of the shaft.

That being said, full sets are \$15 plus shipping (USA \$5, rest of the world \$15, I can send parts to Devin to include with kits for international ppl, etc). IDK how many ppl ordered but I have 500 of these which means there are 14 sets available.

Order Here: <https://michigansynthworks.com/p/pro2021-knob-set>

If you would like the parts to go with your kit, make sure to pick "local pickup" as the shipping option. Otherwise, 1st class for US



orders, international 1st class for non-US orders...

Last edited by Altitude909 on Mon Mar 11, 2019 11:38 am; edited 1 time in total

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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[quote](#) [ignore](#)

Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler

[Post](#) [Subject](#)

grantb5 wrote:



jonny_w wrote:

Devin are you okay with us having the knobs + cpu shipped to you, so they can be included in the kit shipment?

We should wait for the official word, but my understanding was that this is OK for international buyers (only).

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

I was initially hoping to just bundle the turbo CPUs for international folks, but since it sounds like I'll be doing knobs for some people as well, I suppose I'll offer it for everyone at this round.

For those who want this bundle, please pay the appropriate party (Grant at MTG for the TurboCPU, and Altitude909 for the knobs) and let each of them know your name and username on here. Then Grant and Altitude will send me the sum of the orders and I'll make sure they get in the right box. 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

□ Posted: Mon Mar 11, 2019 10:09 am Post subject:

grantb5 wrote:

I don't recommend you use a machine socket unless you check the fit first. Do not use old NOS sockets on anything, ever.
GB

I already have the appropriate (3M) dual wiping socket on the main Mouser cart and BOM. 🤓

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019

Posts: 69

□ Posted: Mon Mar 11, 2019 10:16 am Post subject:

Ordered! Please send mine to devin!

□ Posted: Mon Mar 11, 2019 11:25 am Post subject:

Altitude909 wrote:

That being said, full sets are \$15 plus shipping (USA \$4, rest of the world \$15, ...)

When you say \$4, you mean \$9 right? Or not to order from that page? 🤔

□ Posted: Mon Mar 11, 2019 11:34 am Post subject:

grantb5 wrote:

Altitude909 wrote:

That being said, full sets are \$15 plus shipping (USA \$4, rest of the world \$15, ...)



When you say \$4, you mean \$9 right? Or not to order from that page?

ok, fixed. \$5 for US shipping. I had the wrong weight in there

Last edited by Altitude909 on Mon Mar 11, 2019 12:08 pm; edited 1 time in total

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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tjs
Learning to Wiggle



Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

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kyle
Learning to Wiggle

Joined: 26 Jul 2013
Last Visit: 14 Apr 2019



Posts: 3

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jonny_w
Common Wiggler

devinw1 wrote:

That being said, full sets are \$15 plus shipping (USA \$5, rest of the world \$15, I can send parts to Devin to include with kits for international ppl, etc).

Done! Please send to Devin (order #1193). Thank you!



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

grantb5 wrote:

jonny_w wrote:

Devin are you okay with us having the knobs + cpu shipped to you, so they can be included in the kit shipment?

We should wait for the official word, but my understanding was that this is OK for international buyers (only).

I was initially hoping to just bundle the turbo CPUs for international folks, but since it sounds like I'll be doing knobs for some people as well, I suppose I'll offer it for everyone at this round.

For those who want this bundle, please pay the appropriate party (Grant at MTG for the TurboCPU, and Altitude909 for the knobs) and let each of them know your name and username on here. Then Grant and Altitude will send me the sum of the orders and I'll make sure they get in the right box. 😊

You sir, are a saint! 😊

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jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

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[profile](#) [pm](#) [email](#)

[Posted: Mon Mar 11, 2019 4:28 pm](#) Post subject:

[quote](#) [ignore](#)

Knobs ordered, please include with my kit. I really appreciate you taking care of the knobs for us 😊

Order no.: 1196

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

jonny_w wrote:

devinw1 wrote:

grantb5 wrote:

jonny_w wrote:

Devin are you okay with us having the knobs + cpu shipped to you, so they can be included in the kit shipment?

We should wait for the official word, but my understanding was that this is OK for international buyers (only).

I was initially hoping to just bundle the turbo CPUs for international folks, but since it sounds like I'll be doing knobs for some people as well, I suppose I'll offer it for everyone at this round.

For those who want this bundle, please pay the appropriate party (Grant at MTG for the TurboCPU,

and Altitude909 for the knobs) and let each of them know your name and username on here. Then Grant and Altitude will send me the sum of the orders and I'll make sure they get in the right box.



You sir, are a saint! 😊

I try! 😊 🍻 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Tue Mar 12, 2019 10:31 am Post subject:

[quote](#) [ignore](#)

Update for today (good and bad):

Good: Wood ends showed up and look good.

Good: Pitch bend parts will be here tomorrow and I'm almost done pre-building the pot assemblies.

Bad: Sheet metal shop had some issue and is running late. It will be another week before it ships. Hang tight, soldiers!



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Wed Mar 13, 2019 10:20 am Post subject:

[quote](#) [ignore](#)

Here's where I'm at so far with the bundling. Grant has already mailed me the 7 Turbos on the list.

Muffs Handle	Knobs?	TurboCPU?	Location
Altitude909			
FactoryDefault			
Grooverman	Yes	Yes	Sweden
tjs	Yes	Yes	Germany
Sparky	Yes	Yes	
jbdiver			
kyle	Yes	Yes	Canada
GrantB5			
Cablebasher	Yes		UK
groove			
Troubleshooter		Yes	
Janne1	Yes	Yes	Finland
jonny_w	Yes	Yes	Canada
YannickD			

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Cablebasher
Wiggling with Experience

Joined: 03 Aug 2013
Last Visit: 26 Mar 2019



Posts: 388

Location: England, UK.

Posted: Wed Mar 13, 2019 10:56 am Post subject:

[quote](#) [ignore](#)

I would also like the CPU send with my package

I have just PMed grant for a paypal link

I hope I'm not too late

Cheers.

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devinw1
Veteran Wiggler



Posted: Wed Mar 13, 2019 11:18 am Post subject:

[quote](#) [ignore](#)

Cablebasher wrote:

I would also like the CPU send with my package
I have just PMed grant for a paypal link
I hope I'm not too late
Cheers.

No sir. Not too late at all.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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As I said in the previous update, we are running a little late due to the sheet metal fab.

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Wed Mar 13, 2019 11:28 am Post subject:

[quote](#) [ignore](#)

FactoryDefault has a CPU en route to him in the USA. So you can put a NO for bundling a CPU to him.

Sparky had me send you a CPU but he looks to be in the USA. (?)

I don't need any bundles, so NO, NO and USA

TroubleShooter is in Belgium I believe.

I have PM'd Cablebasher.

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

Posted: Wed Mar 13, 2019 11:51 am Post subject:

[quote](#) [edit](#) [ignore](#)

grantb5 wrote:

Sparky had me send you a CPU but he looks to be in the USA. (?)

Yeah, Devin said it was OK for all (not just intl.) so I figured it would work out (no CA tax!) Thanks!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Wed Mar 13, 2019 11:54 am Post subject:

[quote](#) [ignore](#)

Updated table below. Thanks for the info grant!

Muffs Handle	Knobs?	TurboCPU?	Location
Altitude909	NO		USA
FactoryDefault		NO	USA
Grooverman	Yes	Yes	Sweden
tjs	Yes	Yes	Germany
Sparky	Yes	Yes	USA
jbdiver			USA
kyle	Yes	Yes	Canada
GrantB5	NO	NO	USA
Cablebasher	Yes		UK
groove			USA
Troubleshter		Yes	Belgium
Janne1	Yes	Yes	Finland
jonny_w	Yes	Yes	Canada
YannickD			Germany

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Wed Mar 13, 2019 1:07 pm Post subject:

[quote](#) [ignore](#)

Sparky wrote:

grantb5 wrote:

Sparky had me send you a CPU but he looks to be in the USA. (?)

Yeah, Devin said it was OK for all (not just intl.) so I figured it would work out (no CA tax!) Thanks!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Wed Mar 13, 2019 1:45 pm Post subject:

[quote](#) [ignore](#)

Cool, yeah, US or not doesn't really matter for me. I'm just putting it in the box! Just don't want to add anything that will significantly increase weight or volume for shipping (TurboCPU and knobs do not).

Here's the updated list for bundles. Come ship time, any items that don't say Yes or NO will assumed to be a NO and you will just get the kit as is without the knobs or TurboCPU.

Muffs Handle	Knobs?	TurboCPU?	Location
Altitude909	NO		USA
FactoryDefault		NO	USA
Grooverman	Yes	Yes	Sweden
tjs	Yes	Yes	Germany
Sparky	Yes	Yes	USA
jbdiver			USA
kyle	Yes	Yes	Canada
GrantB5	NO	NO	USA
Cablebasher	Yes		UK
groove		NO	USA
Troubleshooter		Yes	Belgium
Janne1	Yes	Yes	Finland
jonny_w	Yes	Yes	Canada
YannickD			Germany

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Posted: Wed Mar 13, 2019 2:34 pm Post subject:

[quote](#) [ignore](#)

no on turbo for me.

jbdiver
Wiggling with Experience

Posted: Wed Mar 13, 2019 5:27 pm Post subject:

[quote](#) [ignore](#)



No & no for me.

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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FactoryDefault
Common Wiggler



□ Posted: Wed Mar 13, 2019 8:15 pm Post subject:

No knobs for me. Altitude is shipping them directly.

This seems like the hardest part of any project. All the work is really appreciated!

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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YannickD
Learning to Wiggle

Joined: 19 Aug 2015
Last Visit: 19 Apr 2019



Posts: 30
Location: Germany

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devinw1
Veteran Wiggler



□ Posted: Thu Mar 14, 2019 12:13 pm Post subject:

Cool, thanks everyone.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Muffs Handle	Knobs?	TurboCPU?	Location
Altitude909	NO	NO	USA
FactoryDefault	NO	NO	USA
Grooverman	Yes	Yes	Sweden
tjs	Yes	Yes	Germany
Sparky	Yes	Yes	USA
jbdiver	NO	NO	USA
kyle	Yes	Yes	Canada
GrantB5	NO	NO	USA
Cablebasher	Yes		UK
groove		NO	USA
Troubleshooter		Yes	Belgium
Janne1	Yes	Yes	Finland
jonny_w	Yes	Yes	Canada
YannickD	Yes	Yes	Germany

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devinw1
Veteran Wiggler

[Post](#) Posted: Thu Mar 14, 2019 12:14 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

[Post](#) Posted: Fri Mar 15, 2019 3:26 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

[Post](#) Posted: Mon Mar 18, 2019 10:21 am Post subject:

OK, here's where we are at with bundles. All I need to know is if groove and Troubleshooter are getting knobs from Altitude or not and I should be good. I already have most of the TurboCPUs from Grant at this point.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Muffs Handle	Knobs?	TurboCPU?	Location
Altitude909	NO	NO	USA
FactoryDefault	NO	NO	USA
Grooverman	Yes	Yes	Sweden
tjs	Yes	Yes	Germany
Sparky	Yes	Yes	USA
jbdiver	NO	NO	USA
kyle	Yes	Yes	Canada
GrantB5	NO	NO	USA
Cablebasher	Yes	Yes	UK
groove	?	NO	USA
Troubleshooter	?	Yes	Belgium
Janne1	Yes	Yes	Finland
jonny_w	Yes	Yes	Canada
YannickD	Yes	?	Germany

Other than that I'm still working with the sheet metal shop on some issues, so I think that arrival will be the long pole at this point. I should have the pots today, and prepared all the various hardware bags this weekend. I should hopefully be able to also finish assembling the pitch/mod assemblies this week if I can figure out WTF FedEx has done with my package of machined parts.



Last edited by devinw1 on Mon Mar 18, 2019 11:31 am; edited 1 time in total

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

devinw1 wrote:

OK, here's where we are at with bundles. All I need to know is if groove and Troubleshooter are getting knobs from Altitude or not and I should be good. I already have most of the TurboCPUs from Grant at this point.

[quote](#) [ignore](#)

Still waiting on YannickD as far as CPU is concerned.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Word. Previous table corrected!

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[quote](#) [ignore](#)

YannickD
Learning to Wiggle

Joined: 19 Aug 2015
Last Visit: 19 Apr 2019



Posts: 30
Location: Germany

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Sorry for the delay. Just sent Grant the money!

[profile](#) [pm](#) [email](#)

[quote](#) [ignore](#)

groove

[Posted: Tue Mar 19, 2019 9:57 am Post subject:](#)

[quote](#) [ignore](#)

Common Wiggler

Joined: 19 Jul 2013
Last Visit: 18 Apr 2019



Posts: 213
Location: NY

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Yes on knobs, please.

pete

<http://loudshow.tumblr.com>



[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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□ Posted: Tue Mar 19, 2019 10:31 am Post subject:

[quote](#) [ignore](#)

Thanks guys! Troubleshooter, are you going to want the knobs bundled purchased from Altitude?

Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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□ Posted: Wed Mar 20, 2019 5:59 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

Thanks guys! Troubleshooter, are you going to want the knobs bundled purchased from Altitude?

I get a "404 page not found" on the shop link so I guess they are sold out.

But never mind I was thinking about metal knobs anyway. A matter of personal taste.

Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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□ Posted: Wed Mar 20, 2019 7:26 am Post subject:

[quote](#) [ignore](#)

Troubleshooter wrote:

devinw1 wrote:

Thanks guys! Troubleshooter, are you going to want the knobs bundled purchased from Altitude?

I get a "404 page not found" on the shop link so I guess they are sold out.

But never mind I was thinking about metal knobs anyway. A matter of personal taste.

I changed websites and never updated that. There is one set left anyway so i didnt bother

devinw1
Veteran Wiggler

□ Posted: Wed Mar 20, 2019 10:34 am Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Alright, cool, looks like we are set then. Here's the final bundle table. If anyone sees an error let me know.

I've received 3 boxes of TurboCPUs from Grant and think there is 1 more single one coming. I also received a big box of knobs from Altitude, but haven't counted them yet 😊.

Muffs Handle	Knobs?	TurboCPU?	Location
Altitude909	NO	NO	USA
FactoryDefault	NO	NO	USA
Grooverman	Yes	Yes	Sweden
tjs	Yes	Yes	Germany
Sparky	Yes	Yes	USA
jbdiver	NO	NO	USA
kyle	Yes	Yes	Canada
GrantB5	NO	NO	USA
Cablebasher	Yes	Yes	UK
groove	Yes	NO	USA
Troubleshooter	No	Yes	Belgium
Janne1	Yes	Yes	Finland
jonny_w	Yes	Yes	Canada
YannickD	Yes	Yes	Germany

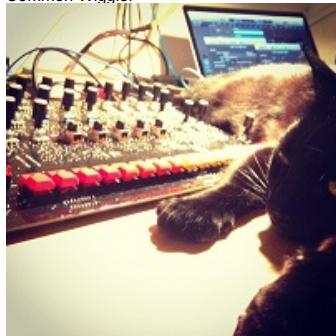
Beyond that, I received the pots yesterday and I've got almost everything bagged up and sorted. I have to finish building the pitch benders but that should happen today and tomorrow. After that, It's just waiting to get sheet metal and all this stuff can GO. 🎉

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[quote](#) [ignore](#)

FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

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[profile](#) [pm](#)

[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

FactoryDefault wrote:

Awesome.
Is the mouser BOM good to go now?

Yep should be good!

I fixed the fuse issue. I have put 2 each of the (5mm dia) 250mA and 125mA on the BOM. If you are gonna run 120VAC just delete the 125mA, and vice versa if you are on 240. You can put more on there as extras too, they are cheap. And hey, you might blow one or two getting started... I kid kid! 😄😄

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Wed Mar 20, 2019 11:40 am Post subject:



This one?

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=ad79_cc1a44

As seen in post #456:

https://www.muffwiggler.com/forum/viewtopic.php?t=209075&postdays=0&po_storder=asc&start=456

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

grantb5 wrote:

This one?

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=ad79_cc1a44

As seen in post #456:

https://www.muffwiggler.com/forum/viewtopic.php?t=209075&postdays=0&po_storder=asc&start=456

I think that might be out of date, as that was merged before I made changes to the fuse.. The official BOMs are here:

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=b0fd_6e2cef

https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=ac36_8eda5a

Someone is welcome to merge those. I don't see any more changes coming for now.

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Wed Mar 20, 2019 8:35 pm Post subject:



So as I go through this BOM stuff, should I pester you (Devin) here or elsewhere? First questions...

Are you using those gray flexible insulator thingies on the regulators or the paste stuff? Or is that our choice since I see both?

The rear panel 1/4" jacks I recognize from your earlier photos. These are for what then?

<https://www.mouser.com/ProductDetail/502-113BX>

None of these items are expensive, just curious.

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devinw1
Veteran Wiggler



Posted: Wed Mar 20, 2019 11:32 pm Post subject:



grantb5 wrote:

So as I go through this BOM stuff, should I pester you (Devin) here or elsewhere? First questions...

Are you using those gray flexible insulator thingies on the regulators or the paste stuff? Or is that our choice since I see both?

The rear panel 1/4" jacks I recognize from your earlier photos. These are for what then?

<https://www.mouser.com/ProductDetail/502-113BX>

None of these items are expensive, just curious.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Here is fine! 😊

For the negative regulators, I am using the mica insulators on the BOM (they are hard, not flexible) as electrical insulators. For all of the regulators, I like to use a thermal heat sink paste to help conduction to the heat sink. Any type will work or you could probably not use it at all. I just put that little tube stuff on there for convenience. The most important part is electrically insulating the negative regs from the heat sinks.

The 1/4" jacks are for audio in and audio out. The 1/8" (3.5mm) are for all the CV/gate ins and outs. You are perfectly welcome to drill out the back sheet metal and run 1/4" on all the CVs though if that suits your fancy. I just figured all the Eurorack guys love 1/8" for CV so I went with that.

The audio in jack is needs to be that particular type (a tip, ring, sleeve, and normally close tip switch), so not just any will do. The audio out doesn't but I've just chosen the same jack for both for simplicity.

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devinw1
Veteran Wiggler

Posted: Wed Mar 20, 2019 11:37 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

In other news, the bender factory is up and running! I'm tellin you guys these things are buuuutah! I thinking if there is any demand I will sell them separately for people wanting to build other custom keyboard instruments, upgrades etc.:)



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Jannel
Wiggling with Experience

Posted: Thu Mar 21, 2019 1:12 am Post subject:

[quote](#) [ignore](#)

[quote="devinw1"]... if there is any demand I will sell them separately for people wanting to build other custom keyboard instruments, upgrades etc.../quote]

If you have extras now, I would love to buy a extra set.

Last edited by Jannel on Thu Mar 21, 2019 3:17 am; edited 1 time in total



Posts: 257

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[profile](#) [pm](#) [email](#)

Grooverman

Joined: 16 Jul 2013
Last Visit: 20 Apr 2019



Posts: 22

devinw1 wrote:

In other news, the bender factory is up and running! I'm tellin you guys these things are buuuutah! I thinking if there is any demand I will sell them separately for people wanting to build other custom keyboard instruments, upgrades etc..:

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You can't show Pictures like that!!!! There might be children watching 😊

[profile](#) [pm](#)

groove
Common Wiggler

Joined: 19 Jul 2013
Last Visit: 18 Apr 2019



Posts: 213
Location: NY

devinw1 wrote:

In other news, the bender factory is up and running! I'm tellin you guys these things are buuuutah! I thinking if there is any demand I will sell them separately for people wanting to build other custom keyboard instruments, upgrades etc..:

THIS. I would definitely be interested in another set or two. Those are beautiful!

<http://loudshow.tumblr.com>

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devinw1
Veteran Wiggler

Cool, thanks guys! I will report back after I get all the kits back. I did buy extra machined parts. 😊



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Thu Mar 21, 2019 1:36 pm Post subject:

[quote](#) [ignore](#)

Wow on the benders! Yeah you could make a full time gig out of that. Quick, raise your prices! 😊

Thanks for the PS BOM info. I'll probably embarrass myself more later, but for now I've ordered that one. I ordered some other stuff that can only go ground so it will be a while before I get it. I will get the other BOM going here as time allows.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019

Posts: 250
Location: Canada

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Posted: Fri Mar 22, 2019 12:30 am Post subject:

[quote](#) [ignore](#)

For those that ordered the Fatar & ribbon cable from Newgroove - did anybody receive extra ribbon cables, or none at all? My box only contained the Fatar keybed.

Jannel
Wiggling with Experience

Posted: Fri Mar 22, 2019 2:56 am Post subject:

[quote](#) [ignore](#)

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

jonny_w wrote:

For those that ordered the Fatar & ribbon cable from Newgroove - did anybody receive extra ribbon cables, or none at all?
My box only contained the Fatar keybed.

I think the cable comes with the MKE kit they sell, not with keyboard. You can buy those micromatch cables from farnell etc cheaper.

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[quote](#) [ignore](#)

Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

Alessandro from newgroove told me he is waiting for the cable sets to be delivered from Doepfer. We just have to be patient.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



[profile](#) [pm](#) [email](#)

Minor update: I added a 270k resistor to the main BOM. The mouser car link on page 1 and the Github are updated.

Basically, there is a resistor for each VCO that sets the initial frequency. On the original Pro-One, VCO 1 has a 220k and VCO 2 has an 820k. After having built 2 units and crunching the numbers, I believe that Dave may have been off a little bit with the 220k. If you use a 270k on VCO 1, it is much closer to where it needs to be to calibrate both of them where they need to be (where C0 at octave 0 is C0). There appears to be enough latitude in the offset trimpot to accommodate the 220k (that's what I built my first prototype with), but the 270k will get ya much closer.

As you were!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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jonny_w
Common Wiggler



Joined: 07 Oct 2014
Last Visit: 20 Apr 2019

Posts: 250
Location: Canada

[Post](#) Posted: Fri Mar 22, 2019 10:50 am Post subject:

Troubleshooter wrote:

Jannel wrote:

jonny_w wrote:

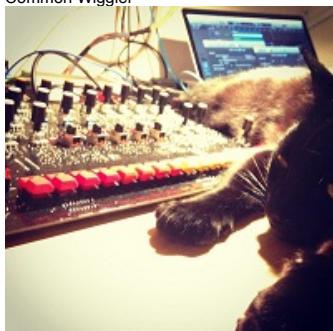
For those that ordered the Fatar & ribbon cable from Newgroove - did anybody receive extra ribbon cables, or none at all? My box only contained the Fatar keybed.

I think the cable comes with the MKE kit they sell, not with keyboard. You can buy those micromatch cables from farnell etc cheaper.

Alessandro from newgroove told me he is waiting for the cable sets to be delivered from Doepfer. We just have to be patient.

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

[Post](#) Posted: Fri Mar 22, 2019 10:52 am Post subject:

devinw1 wrote:

Yeah, I mean if anyone gets impatient, that should be a very easy cable to make. It's just a 20 pin ribbon cable with a micromatch on either end.

I'm glad you posted this. The pictures on the Newgroove show 16 pins. I was just about to order parts.

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devinw1
Veteran Wiggler



[Post](#) Posted: Fri Mar 22, 2019 11:17 am Post subject:

FactoryDefault wrote:

devinw1 wrote:

Yeah, I mean if anyone gets impatient, that should be a very easy cable to make. It's just a 20 pin ribbon cable with a micromatch on either end.

I'm glad you posted this. The pictures on the Newgroove show 16 pins. I was just about to order parts.

Oh weird! Yeah it's 20!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky

Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

Posted: Sat Mar 23, 2019 2:49 pm Post subject:

Github BOM here <https://github.com/devinw1/PRO2021> shows 3x 26.7K resistors.

Mouser BOM shows 2. I discovered this while checking my mouser delivery. I have a spare 27k floating about, maybe that'll do for PCB B, and keep the 2x 26.7k on the VCO?

Also, Mouser BOM has an LM13700 that isn't on the GitHub BOM.

..and those slider switches! wow, you could drive a tank over them. solid!

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Jannel

Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

Posted: Sat Mar 23, 2019 5:26 pm Post subject:

devinw1 wrote:

Oh weird! Yeah it's 20!

Fatar keys micromatch connectors:

2-3 octave has 20 pin

4-5 octave has 2x 16pin.

Doepfer website has nice matrix schematics for all of these.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Mar 23, 2019 7:40 pm Post subject:

Sparky wrote:

Github BOM here <https://github.com/devinw1/PRO2021> shows 3x 26.7K resistors.

Mouser BOM shows 2. I discovered this while checking my mouser delivery. I have a spare 27k floating about, maybe that'll do for PCB B, and keep the 2x 26.7k on the VCO?

Also, Mouser BOM has an LM13700 that isn't on the GitHub BOM.

..and those slider switches! wow, you could drive a tank over them. solid!

Ah crap! And YES 27k is great for the B PCB. I grouped them on purpose to save on line items but I guess I missed one. I'll fix that.

For the VCO cards, you MUST use the 26.7k so yes set them aside for that. Sorry about that!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Mar 23, 2019 7:42 pm Post subject:

BTW, schematics are live on the <https://github.com/devinw1/PRO2021> page if anyone wants to poke around.

I'll have to wait til Monday to fix the master BOM as the file is at work. Mouser cart is fixed tho.

I'm chugging along on the build documentation, maybe 70% done.

On the hardware end, I have everything ready to go for the kits, even boxes! ...except the sheet metal. I should hopefully know more this week. We are getting close!

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Sat Mar 23, 2019 10:46 pm Post subject:

[quote](#) [ignore](#)

Nice! I wasn't expecting to see schematics. I figured you'd just refer folks to the originals.

For the **TurboCPU**, Pins 15, 16 and 17 are no-connects. The Turbo has its own oscillator and reset so the 470uH, 1uf and 1N914 aren't necessary. You can keep them though, in the event you want to drop the original 8021 in.

Also, the TurboCPU will ignore D103. The alternate arp mode is selected using a power-on default.

Last edited by grantb5 on Mon Mar 25, 2019 1:13 pm; edited 1 time in total

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Mar 23, 2019 11:23 pm Post subject:

[quote](#) [ignore](#)

grantb5 wrote:

Nice! I wasn't expecting to see schematics. I figured you'd just refer folks to the originals.

For the **TurboCPU**, Pins 15, 16 and 17 are no-connects. The Turbo has its own oscillator and reset so the 470uH, 1uf and 1N914 aren't necessary. You can keep them though, in the event you want to drop the original 8021 in.

Thanks for that, did not realize this about the Turbo! Glad to know I've got the hooks in place for both but I'll add this to the build docs because I think basically everyone ever building this will be using the Turbo cpu vs original and can just omit those components!



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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sun Mar 24, 2019 11:16 pm Post subject:

[quote](#) [ignore](#)

First rev of the build documentation is now up at <https://github.com/devinw1/PRO2021>

Feel free to peruse it at your leisure!



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[profile](#) [pm](#) [email](#)

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

Posted: Mon Mar 25, 2019 1:43 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

First rev of the build documentation is now up at <https://github.com/devinw1/PRO2021>

Feel free to peruse it at your leisure!



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Excellent job on the build guide! More than enough for building it This is hopefully going to be my eastern project and if all goes well it's going to be shown at Helsinki Synthetic (along with my Deckard's Dream & Midiboard) this year!

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Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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[Post](#): Mon Mar 25, 2019 5:50 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

First rev of the build documentation is now up at <https://github.com/devinw1/PRO2021>



The docs look very good, so do the wheel assembly's. Really looking forward to get my hand on the kit now.

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Post](#): Mon Mar 25, 2019 10:21 am Post subject:

[quote](#) [ignore](#)

Jannel wrote:

devinw1 wrote:

First rev of the build documentation is now up at <https://github.com/devinw1/PRO2021>



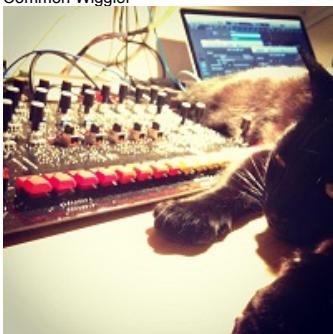
Excellent job on the build guide! More than enough for building it This is hopefully going to be my eastern project and if all goes well it's going to be shown at Helsinki Synthetic (along with my Deckard's Dream & Midiboard) this year!

Awesome!!

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

[Post](#): Mon Mar 25, 2019 10:49 am Post subject:

[quote](#) [ignore](#)

Build guide is awesome Devin. I read it twice already!

Still have a nagging doubt about the 3280 ICs though : modular addict has 2 kinds - Alfa AS3280D and Alfa AS3280AD.

Just want to verify I'm buying the AS3280D and NOT the AS3280AD.

thanks!

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devinw1
Veteran Wiggler

[Post](#): Mon Mar 25, 2019 11:06 am Post subject:

[quote](#) [ignore](#)

FactoryDefault wrote:

Build guide is awesome Devin. I read it twice already!

Still have a nagging doubt about the 3280 ICs though : modular addict has 2 kinds - Alfa AS3280D and Alfa AS3280AD.

Just want to verify I'm buying the AS3280D and NOT the AS3280AD.



thanks!

Thanks! And on the AS3280, I did not even realize there were 2 flavors. I bought some to test from Thonk and they did not specify which one they are selling.

It LOOKS to me like Alfa has the A version to mirror the specs of the original CA3280 which came in a CA3280 and a CA3280A. From what I can gather, the A has a bit lower input offset voltage and input offset voltage drift. My guess is either will work for this application, but perhaps some of the schooled EE's here could chime in on it. It's used for the VCA on this synth.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Mon Mar 25, 2019 1:36 pm Post subject:

[quote](#) [ignore](#)

I looked at the AS3280 data sheet and the 'A' chip only has a very few tighter specs it seems.

Any chance we can get a look at the PCB real estate around the 3280? The SOIC adapter needs to fit. I will look into this further, having a bit of experience putting a chip-on-a-board-and-into-a-socket on the Pro One. Someone mentioned a Proto-Advantage adapter and the pins it uses may be an issue for overall "tallness". There are lots of other options. I would also avoid Aries generally since they give you zero pad to solder with. I guess they figure everyone has an oven.

Last edited by grantb5 on Mon Mar 25, 2019 3:11 pm; edited 1 time in total

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FactoryDefault
Common Wiggler



Posted: Mon Mar 25, 2019 1:56 pm Post subject:

[quote](#) [ignore](#)

grantb5 wrote:

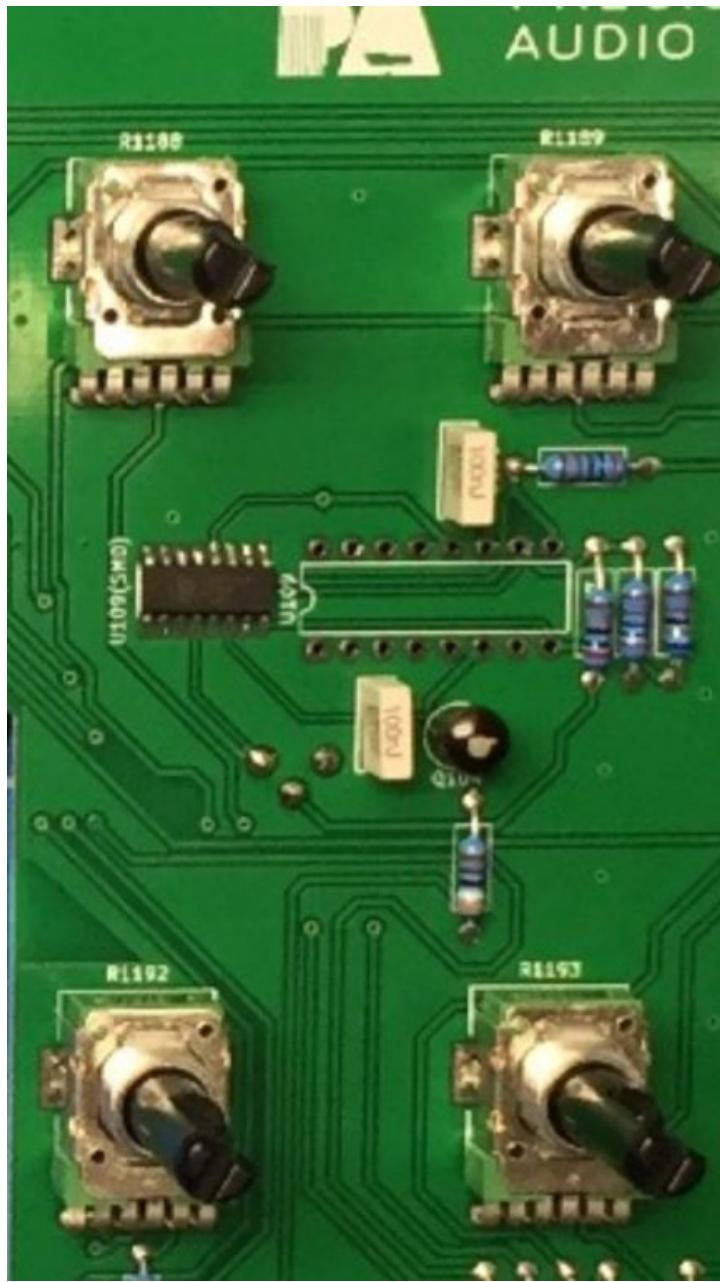
Any chance we can get a look at the PCB real estate around the 3280? The SOIC adapter needs to fit.

From the build guide. No adapter necessary.

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90



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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019

Posted: Mon Mar 25, 2019 3:08 pm Post subject:

[quote](#) [ignore](#)

Thanks and apologies.



Posts: 69

FWIW something like this *might* work, but hard to find and \$\$.

<https://www.mouser.com/ProductDetail/535-16-350000-10-P>
<https://www.biscoind.com/AdvancedInterconnections/4414-316>
<http://www.nkcelectronics.com/sotc-to-dip-adapter-16pin-5p.html>

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR

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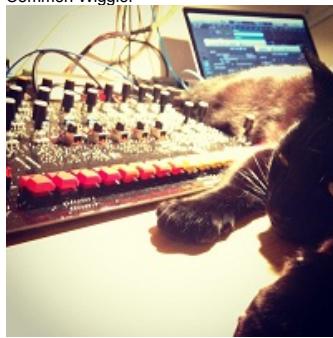
Posted: Mon Mar 25, 2019 3:09 pm Post subject:

Yep, you're all good to use either the CA3280 DIP or the SOIC AS3280! Thanks for the screen grab FactoryDefault!

The original Pro-One is all on one big ass board, so when I split into 2, some things had to get jiggered around. In this case the original splits half of the CA3280 for the glide and the VCA, but on the PRO2021 the glide lives on the "A" board and the VCA lives on the "B" board. Instead of having to use 2 rare 3280s or do a bunch of crazy routing, I am using a LM13700 for the glide and the 1/2 3280 for the VCA.

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
 Last Visit: 20 Apr 2019

Posts: 90

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Posted: Mon Mar 25, 2019 3:26 pm Post subject:

Digging around old photos of pro-ones online, it seems that sequential used the CA3280E (marked RCA 150). Datasheet here: http://mirror.thelifeofkenneth.com/lib/electronics_archive/RcaLinearIntegratedCircuitsAndMosfetsDataBook1982_text.pdf

So RCA also made two versions of the chip with the same differences as the Intersil and Alfa chips. Sequential used the equivalent to the lesser expensive alfa.

Was thinking I would buy both and try them out, which would be easier if I used a soic-dip adapter...

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Posted: Mon Mar 25, 2019 4:11 pm Post subject:

FactoryDefault wrote:

Digging around old photos of pro-ones online, it seems that sequential used the CA3280E (marked RCA 150). Datasheet here: http://mirror.thelifeofkenneth.com/lib/electronics_archive/RcaLinearIntegratedCircuitsAndMosfetsDataBook1982_text.pdf

So RCA also made two versions of the chip with the same differences as the Intersil and Alfa chips. Sequential used the equivalent to the lesser expensive alfa.

Was thinking I would buy both and try them out, which would be easier if I used a soic-dip adapter...

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Posted: Mon Mar 25, 2019 4:11 pm Post subject:

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR

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Posted: Mon Mar 25, 2019 4:30 pm Post subject:

jonny_w
Common Wiggler

Posted: Mon Mar 25, 2019 4:30 pm Post subject:



This build document is fantastic

Good to know re: the simplicity of the ribbon cable. Looks like I'll be building my own, which I've done before without any issues.

Joined: 07 Oct 2014
Last Visit: 20 Apr 2019



Posts: 250
Location: Canada

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Sparky
Common Wiggler

Posted: Mon Mar 25, 2019 6:27 pm Post subject:

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

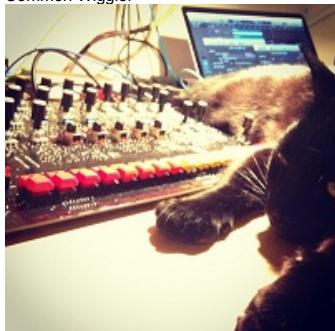


Posts: 158
Location: California, USA

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Posted: Mon Mar 25, 2019 6:40 pm Post subject:

FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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Posted: Mon Mar 25, 2019 8:14 pm Post subject:

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

FactoryDefault wrote:

No problem! Like I said, I read the build guide twice this morning!
These soic adapters are 81c each plus \$4 shipping:
<http://www.dipmicro.com/store/PCB-SOIC-SSOP16>

Well, the price is right! The ones I linked will be a lot easier to solder, but these are soooo much cheaper. I hate when there's no extra pad for heating though, such a PITA. I just worked on an MSOP-10 with pads like this and almost had to go out for extra

beer. SOIC won't be so bad though. Maybe I can find something else on that site too while I'm there...

Ed: Don't use those pins shown if you are using a socket. One needs to be careful of the overall height versus the front panel.

Last edited by grantb5 on Tue Mar 26, 2019 10:43 am; edited 1 time in total

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Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Common Wiggler

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90**Sparky** wrote:

Wow. Super build docs! Also, thanks for the frequent updates.

Note you mention "getagroove.it" and I think you mean "newgroove.it" in the docs.

oops! I will fix that! Thanks!

[quote](#) [ignore](#)[Back to top](#)[profile](#) [pm](#) [email](#)**FactoryDefault**
Common Wiggler[Post](#) [Subject](#)[quote](#) [ignore](#)**grantb5** wrote:

Don't use those pins shown if you are using a socket.

Good point. Looks like we have a 1/2" of clearance.

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90[Back to top](#)[profile](#) [pm](#)**devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Veteran Wiggler[Post](#) [Subject](#)[quote](#) [ignore](#)

So fun update: I have all the production PCBs and realized I accidentally ordered 8 short of the VCO PCBs. I ordered 10 more from JLC and they were delivered by DHL and presumably stolen from my porch yesterday. Fantastic.

Time to try again.



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

[Back to top](#)

[Post](#) Posted: Wed Mar 27, 2019 11:29 am Post subject:

[quote](#) [edit](#) [ignore](#)

That thief is going to have fun with that 10 oscillator synth!

FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Wed Mar 27, 2019 11:45 am Post subject:

[quote](#) [edit](#) [ignore](#)

LOL guys. And yeah that glitter bomb video, well....i think it's the definition of viral at this point. Well worth it though!

In other news, my band was asked to record a couple quick motifs for a new podcast.... my keyboard player doses in some PRO2021 on Motif 2 and Motif 3 here:

https://soundcloud.com/saywaht/sets/podcast-music-motifs-by-argyle-c-2_019-argyle-music



devinw1

[profile](#) [pm](#) [email](#)

Veteran Wiggler



Posted: Wed Mar 27, 2019 11:25 pm Post subject:

[quote](#) [ignore](#)

Chassis are here!! (except 1 set... lol! I've straightened it out with the shop and the other is going to be built and sent soon). In the mean time, I boxed a couple kits up and have sent invoices to the first US and the first international buyers (Altitude909 and grooverman).



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

[Back to top](#)

Posted: Thu Mar 28, 2019 12:00 am Post subject:

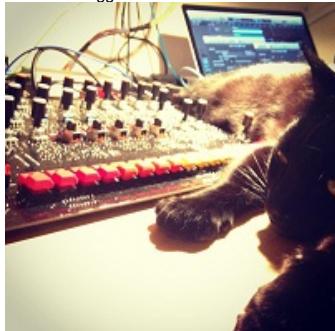
[quote](#) [edit](#) [ignore](#)



Fantastic news!

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FactoryDefault
Common Wiggler



Posted: Thu Mar 28, 2019 8:46 am Post subject:

[quote](#) [ignore](#)

Great news!

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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devinw1
Veteran Wiggler



Posted: Thu Mar 28, 2019 10:45 am Post subject:

[quote](#) [ignore](#)

I also ordered the remaining 10 VCO boards that were stolen off my porch. This time I will hold for pickup haha. Didn't think I'd have to worry about anyone stealing \$10 in PCBs they can't use.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[Post](#) Posted: Thu Mar 28, 2019 2:20 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

Chassis are here!! (except 1 set... lol! I've straightened it out with the shop and the other is going to be built and sent soon). In the mean time, I boxed a couple kits up and have sent invoices to the first US and the first international buyers (Altitude909 and grooverman).



[profile](#) [pm](#) [email](#)

kragg
Wiggling with Experience



Joined: 15 Dec 2011
Last Visit: 18 Apr 2019



Posts: 404
Location: Nemo Point

[Back to top](#)

[Post](#) Posted: Thu Mar 28, 2019 3:01 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

In other news, my band was asked to record a couple quick motifs for a new podcast.... my keyboard player doses in some PRO2021 on Motif 2 and Motif 3 here:

<https://soundcloud.com/saywaht/sets/podcast-music-motifs-by-argyle-c-2-019-argyle-music>



Nice !

<http://kragg.fr/>

[profile](#) [pm](#) [email](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Fri Mar 29, 2019 8:49 pm Post subject:

[quote](#) [ignore](#)

2 kits out the door, 2 more with shipping labels, and 1 just waiting on an address. We are movin product, baby!



[profile](#) [pm](#) [email](#)

FactoryDefault
Common Wiggler

[Post](#) Posted: Fri Mar 29, 2019 9:08 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

<https://soundcloud.com/saywaht/sets/podcast-music-motifs-by-argyle-c-2-019-argyle-music>



Very cool. You're in "in a silent way" / tortoise / "in sound from way out" territory.

So... you're not the keyboard player?

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

FactoryDefault wrote:

devinw1 wrote:

<https://soundcloud.com/saywaht/sets/podcast-music-motifs-by-argyle-c-2-019-argyle-music>



Very cool. You're in "in a silent way" / tortoise / "in sound from way out" territory.

So... you're not the keyboard player?

Thanks! Yeah we wanted some moody / space stuff for this so that works! I am actually (and have always been) a drummer (and the recording engineer lol). I just happen to love keyboards (and attempting to play them 😊)

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[quote](#) [ignore](#)

grantbs
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

FactoryDefault wrote:

devinw1 wrote:

<https://soundcloud.com/saywaht/sets/podcast-music-motifs-by-argyle-c-2-019-argyle-music>



Very cool. You're in "in a silent way" / tortoise / "in sound from way out" territory.

I agree with that categorization. 😊 Very cool.

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[quote](#) [ignore](#)

kragg
Wiggling with Experience

FactoryDefault wrote:



You're in "in a silent way" / tortoise / "in sound from way out" territory.

exactly my thoughts 😊

<http://kragg.fr/>

Joined: 15 Dec 2011

Last Visit: 18 Apr 2019



Posts: 404

Location: Nemo Point

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devinw1

Veteran Wiggler

Posted: Sat Mar 30, 2019 7:36 pm Post subject:



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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devinw1

Veteran Wiggler

Posted: Mon Apr 01, 2019 10:25 am Post subject:



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Altitude909

Super Deluxe Wiggler

Posted: Mon Apr 01, 2019 5:15 pm Post subject:



Joined: 24 Aug 2011

Last Visit: 20 Apr 2019



Posts: 2969

Location: Meesheegan

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devinw1

Veteran Wiggler

Posted: Mon Apr 01, 2019 5:43 pm Post subject:



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Altitude909

Super Deluxe Wiggle

Posted: Mon Apr 01, 2019 5:50 pm Post subject:



Joined: 24 Aug 2011

Last Visit: 20 Apr 2019



Posts: 2969

Location: Meesheegan

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devinw1

Veteran Wiggler

Posted: Mon Apr 01, 2019 6:51 pm Post subject:



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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Altitude909

Super Deluxe Wiggle

Posted: Mon Apr 01, 2019 6:59 pm Post subject:

So sand by hand instead of vibrating sander?



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Mon Apr 01, 2019 8:26 pm Post subject:

Altitude909 wrote:

Have you looked at using a switching 5V Reg for the digital side? a 7805 with a 18V input will be pretty warm. I always switch those out with the Recoms which are drop in replacements. Whats the current draw on the +5?

I bought one of these when I ordered my parts. Not sure it's big enough capacity wise (I think I got the 1 Amp one) and fit will be an issue for the other regulator on that heatsink, but I'll play with it if I get time.

This is the guy. I have a zener in my cart for my next shopping trip too.

<https://www.mouser.com/datasheet/2/468/R-78Cxx-1.0-958314.pdf>

I heard about these little regulators on another group (the part was OKI-78SR-5/1.5 which looks better perhaps). I need to come up with some kind of power supply for all my Yamaha stuff that is dead or dying.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Mon Apr 01, 2019 8:48 pm Post subject:

Altitude909 wrote:

So sand by hand instead of vibrating sander?

Yes, I'm afraid so! Time to work those biceps!

Joined: 24 Aug 2011

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

Posted: Tue Apr 02, 2019 12:09 pm Post subject:

Hi all,

My Newgroove keybed came in today but I couldn't find the ribbon cable inside the package.
Did anyone else experience this?

The good news is that I noticed the keybed has a force sensitive resistor strip installed. That makes me thinking about a convertor to CV for the aftertouch.



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

[quote](#) [ignore](#)

devinw1 wrote:

Altitude909 wrote:

So sand by hand instead of vibrating sander?

Yes, I'm afraid so! Time to work those biceps!

You might be okay with an orbital sander with the right pad, but honestly these pieces are so small it shouldn't be much work to sand by hand. I wouldn't use anything rougher than 220 grit paper. Also use a sanding block, like a scrap piece of wood, on flat surfaces.

I work quite a bit with cherry and like to use a wiping varnish for finishing. Basically, you just take something like a typical oil-based varnish and thin it (dilute) with mineral oil creating a 50/50 mix. Then you wipe a thin layer of this varnish mix on the wood piece with a rag. Wait for the varnish to dry, give it a very light sanding with 320 grit paper, remove the sanding dust, and repeat this process about 5 times building up the varnish layers. The layers dry really fast and you can finish the piece in a day or two.

What I like about this process is that it's super easy and forgiving. The result is an outstanding finish which is very durable. You could wax this surface if you wanted to but it's not necessary.

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Sparky
Common Wiggle

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

[quote](#) [edit](#) [ignore](#)

Troubleshooter wrote:

Hi all,

My Newgroove keybed came in today but I couldn't find the ribbon cable inside the package.
Did anyone else experience this?

The good news is that I noticed the keybed has a force sensitive resistor strip installed. That makes me thinkering about a convertor to CV for the aftertouch.

Mine is on the way from them right now. I probably won't get it for a week.

Did you order the ribbon cable as a separate item from the keybed? I did. My order shipping was delayed while the cable came

from doepfer apparently.

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Jannel

Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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Troubleshooter

Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

Sparky wrote:

Troubleshooter wrote:

Hi all,

My Newgroove keybed came in today but I couldn't find the ribbon cable inside the package.
Did anyone else experience this?

The good news is that I noticed the keybed has a force sensitive resistor strip installed. That makes me thinkering about a convertor to CV for the aftertouch.

Mine is on the way from them right now. I probably won't get it for a week.

Did you order the ribbon cable as a separate item from the keybed? I did. My order shipping was delayed while the cable came from doepfer apparently.

Yes I did and also got a delay for the same reason. Making one myself is indeed not that difficult but I payed 10€ for that easy task...

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jbdiver

Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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I received the big box today. I can't believe one guy designed and put this kit all together. I'm in awe.

FactoryDefault

Common Wiggler

jbdiver wrote:

I received the big box today. I can't believe one guy designed and put this kit all together. I'm in awe.

Received mine today too.

This evening I'm trying to finish up my last project so I can get started.



I kind of told myself I would sell another synth if I bought this kit so I have a tough decision to make...

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

FactoryDefault wrote:

jbdiver wrote:

I received the big box today. I can't believe one guy designed and put this kit all together. I'm in awe.

Received mine today too.

This evening I'm trying to finish up my last project so I can get started.

I kind of told myself I would sell another synth if I bought this kit so I have a tough decision to make...

Never an easy call! What's on the potential chop list?

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[quote](#) [ignore](#)

tjs
Learning to Wiggle

[profile](#) [pm](#) [email](#)

[Post subject:](#)

[quote](#) [ignore](#)

My Fatar keybed from Newgroove showed up yesterday, including the ribbon cable. So, I'm ready!
USPS Tracking tells me that my kit left the San Francisco International Distribution Center. Now I just hope that german customs doesn't delay deliverance too much...

Getting really excited!



Last edited by tjs on Thu Apr 04, 2019 10:31 am; edited 1 time in total

Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

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[profile](#) [pm](#)

[quote](#) [ignore](#)

Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

I have a BUNCH. I'll put them in the store later today.

grantb5 wrote:

Quote:

> -3X CEM3340 Rev G (NOT AS3340)

I'm not sure where the cards ended up falling regarding the VCO's, but if the CEM is preferred anyone got a source recommendation (in my case in the USA)?

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FactoryDefault

Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

[Post](#) Posted: Thu Apr 04, 2019 1:43 pm Post subject:

Altitude909 wrote:

yeah, I tell myself a lot of things too.

Lol yeah it's not like I promised my wife or anything.

There were no witnesses and I didn't sign anything so I don't necessarily have to hold myself to it.
But... I am space constrained so I have to figure something out.

devinw1 wrote:

Never an easy call! What's on the potential chop list?

Ironically, a mopho x4 and also an ARP Odyssey that I've been meaning to repair.

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

[Post](#) Posted: Thu Apr 04, 2019 1:56 pm Post subject:

Altitude909 wrote:

I have a BUNCH. I'll put them in the store later today.

The knobs place? 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Thu Apr 04, 2019 2:27 pm Post subject:

grantb5 wrote:

Quote:

> -3X CEM3340 Rev G (NOT AS3340)

I'm not sure where the cards ended up falling regarding the VCO's, but if the CEM is preferred anyone got a source recommendation (in my case in the USA)?

Yes, please use the CEM 3340 rev gs . I have yet to get the AS clone to work properly and haven't had time to explore more.

The AS clones for all the other chips (filter, envelope and OTA) are fine tho

devinw1
Veteran Wiggler

[Post](#) Posted: Thu Apr 04, 2019 2:28 pm Post subject:

FactoryDefault wrote:

Altitude909 wrote:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

yeah, I tell myself a lot of things too.

Lol yeah it's not like I promised my wife or anything.
There were no witnesses and I didn't sign anything so I don't necessarily have to hold myself to it.
But... I am space constrained so I have to figure something out.

devinw1 wrote:

Never an easy call! What's on the potential chop list?

Ironically, a mopho x4 and also an ARP Odyssey that I've been meaning to repair.

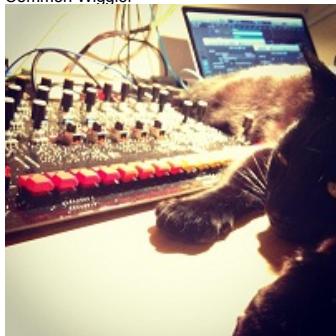
Uh oh don't tell me that.... I've got a soft spot for Odyssey's! 🤣

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

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[profile](#) [pm](#)

[quote](#) [edit](#) [ignore](#)

Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

Posted: Thu Apr 04, 2019 4:16 pm Post subject:

My big box arrived. Looks absolutely fantastic! So well packaged, too! Thanks! 🎉 There goes my work plans for the rest of the day!

My keyboard was in Milan about a week ago. No update on the tracking since. Hopefully it hasn't got stuck on its way to the US. I'm not expecting it will be here for another week, but I hope the tracking starts again!

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[quote](#) [ignore](#)

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler

Posted: Thu Apr 04, 2019 7:45 pm Post subject:

I'd be OK with somebody making a separate build thread so that this thread can be used for updates or future ordering info if it happens. But either way is fine!



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[quote](#) [ignore](#)

devinw1

Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[quote](#) [ignore](#)

FactoryDefault

Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

Which filter has it got? I happen to have a brand new CES Sound 4035 VCF clone sitting in a bag I would let go for cheap (\$70 shipped).

FactoryDefault wrote:

devinw1 wrote:

Uh oh don't tell me that.... I've got a soft spot for Odyssey's!

Me too! I've built 5 synths since the filter stopped working though

devinw1 wrote:

FactoryDefault wrote:

devinw1 wrote:

Uh oh don't tell me that.... I've got a soft spot for Odyssey's!

Me too! I've built 5 synths since the filter stopped working though

Which filter has it got? I happen to have a brand new CES Sound 4035 VCF clone sitting in a bag I would let go for cheap (\$70 shipped).

I'll pm you.

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[quote](#) [ignore](#)

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Jannel

Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

devinw1 wrote:

I'd be OK with somebody making a separate build thread so that this thread can be used for updates or future ordering info if it happens. But either way is fine!

Sure if you like, your call!

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Sparky
Common Wiggle

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



□ Posted: Fri Apr 05, 2019 8:57 am Post subject:

Ok, Updated site with the CEMS and whatever is left of the knobs

<https://michigansynthworks.com/collections/parts>

□ Posted: Fri Apr 05, 2019 9:13 am Post subject:

Does anyone have a favourite method for shortening the pots? (Besides fixing my band saw!).

□ Posted: Fri Apr 05, 2019 9:20 am Post subject:

Sparky wrote:

Does anyone have a favourite method for shortening the pots? (Besides fixing my band saw!).

Lead cutters, it doesn't matter how long you cut them down (withing reason of course), they will stop on where the D stops

□ Posted: Fri Apr 05, 2019 9:44 am Post subject:

Sparky wrote:

Does anyone have a favourite method for shortening the pots? (Besides fixing my band saw!).

A dremel makes quick work of those pot shafts.

Posts: 267
Location: Minneapolis, USA

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FactoryDefault

Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

[Back to top](#)

Kevin Mitchell
Common Wiggler



Joined: 27 Jun 2017
Last Visit: 18 Apr 2019



Posts: 125
Location: Springfield, Massachusetts

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makhho
Common Wiggler

[Posted: Fri Apr 05, 2019 11:22 pm](#) Post subject:

Will keep an eye out for the next round too!



Someone post some build shots already! 😊 🦠 🔥

Joined: 05 Feb 2018
Last Visit: 20 Apr 2019



Posts: 124

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[profile](#) [pm](#)

FactoryDefault
Common Wiggler

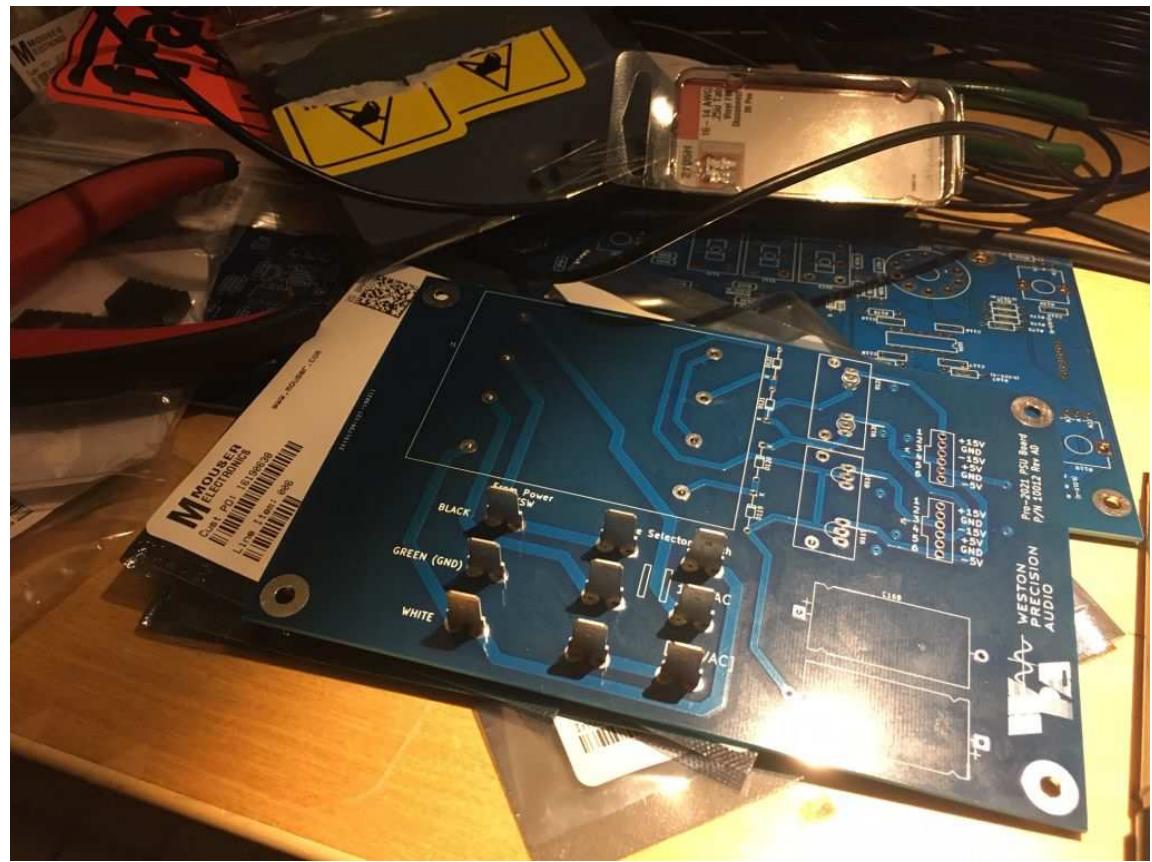


Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

I'm on step 1! 🎉



[/img]

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Sat Apr 06, 2019 11:09 am Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

Ok, Updated site with the CEMS and whatever is left of the knobs

<https://michigansynthworks.com/collections/parts>

I sure did do that thing (CEMs).

GB

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□ Posted: Sat Apr 06, 2019 12:41 pm Post subject:

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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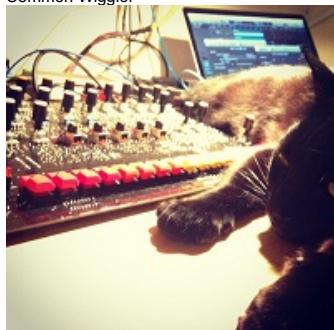
Hey peeps, back from not-so-sunny (but slightly warmer than Portland) Silicon Valley!



I updated the build instructions on the Github to r02 and added the callouts for each VR on the PSU section.

FactoryDefault...you're almost done! BTW, you see the note about soldering those tabs top and bottom right? I don't think it's essential but those things take a good amount of force to slide the mating connectors on so I figure it's nice to make them a bit stronger by adding a fillet solder to the topside bases as well.

FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

□ Posted: Sat Apr 06, 2019 3:27 pm Post subject:

devinw1 wrote:

FactoryDefault...you're almost done! BTW, you see the note about soldering those tabs top and bottom right?

Lol it'll take me a couple of weeks at this rate. Got to get the work / life / synth diy balance right.

Yeah I saw the note on soldering both sides. I did a test fit on the spade connectors and they're tight as hell so yeah mechanical strength is a good thing.

The plastic m3 screws for the regulators... do we buy those? I couldn't find them in the mouser bom or the box...

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

FactoryDefault wrote:

devinw1 wrote:

FactoryDefault...you're almost done! BTW, you see the note about soldering those tabs top and bottom right?

The plastic m3 screws for the regulators... do we buy those? I couldn't find them in the mouser bom or the box...

Damn... I totally spaced that. Doh! I think I had planned to include them on the bom or the bag but forgot. You can get kits of em for like \$6 on amazon tho

https://www.amazon.com/Aroma-Trees-Industrial-Stand-Off-Assortment/dp/B0714F51QZ/ref=mp_s_a_1_14?crid=1ZRXPQOVLTTQ&keywords=nylon+m3+screws &qid=1554583863&s=gateway&sprefix=nylon+m3+&sr=8-14

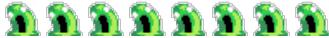
If anyone can't buy em for some reason I can send some some but probably only US. The international shipping for a plastic screw would be just silly and I think in general metric shit is super easy to get in the EU.

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

devinw1 wrote:

I updated the build instructions on the Github to r02 and added the callouts for each VR on the PSU section.



I don't see those changes on github. Did you push a new commit?

Also, I'm populating the resistors on board A using the table in the build doc. It shows that R11 should be a 100k resistor, but I can't seem to find R11 on the board or in the schematics.

jbdiver wrote:

devinw1 wrote:

I updated the build instructions on the Github to r02 and added the callouts for each VR on the PSU section.



I don't see those changes on github. Did you push a new commit?

Also, I'm populating the resistors on board A using the table in the build doc. It shows that R11 should be a 100k resistor, but I can't seem to find R11 on the board or in the schematics.

I couldn't find R10 or R11 on PCB A.

I see "PRO2021 Build Documentation r01.pdf" on GitHub. I previously download r00. Also the images look rather more compressed in r01.

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

I thought I'd install the power supply and give it a try since I'm going to be away on a trip for the next 10 days.

Powered up, switched on. The light in the switch blinked and then the fuse blew

The board looks clean. Diodes are correct. No smoke escaped from anywhere and nothing got hot.

Can you confirm the wiring for the 6 wires from the voltage selector? The build guide says
"The image of a DPDT switch on the silk screen on the board indicates clearly which wire should go to which terminal."

From that, and the photos, it looked to me like the middle pair on the PCB were the middle pair on the selector. The upper pair on the PCB (nearest the transformer) are the upper pair on the selector (115V). Sort of as if you held the selector over the PCB the wires would match the PCB?

I'm not using the fuse from the BOM. I ordered before the updated fuses. I have a 250V 250ma fuse. I'm in the US, so 110v.

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devinw1
Veteran Wiggler

Posted: Sat Apr 06, 2019 5:23 pm Post subject:



Hi guys, sorry about that! I had an intermediate change I never built where I added R10/R11 to make the gain 2 on the W-Mod follower but realized I didn't need to do that at all and scrapped them and somehow they made the table in the build docs. What was added later is R12 and R13 which are for the LFO LED. R12 should be 100k and R13 should be 1.5k.

I hadn't pushed the change through on Github so now you should be able to see a r02 build doc which will have all the voltage reg callouts and this R10/R11 funny business fixed.

Let me know if it works!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[quote](#) [edit](#) [ignore](#)

Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

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Posted: Sat Apr 06, 2019 5:59 pm Post subject:

I see r02 now on Github,

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Sat Apr 06, 2019 6:30 pm Post subject: Re: Fuse blown on PSU power up

Sparky wrote:

I thought I'd install the power supply and give it a try since I'm going to be away on a trip for the next 10 days.

Powered up, switched on. The light in the switch blinked and then the fuse blew

The board looks clean. Diodes are correct. No smoke escaped from anywhere and nothing got hot.

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From that, and the photos, it looked to me like the middle pair on the PCB were the middle pair on the selector. The upper pair on the PCB (nearest the transformer) are the upper pair on the selector (115V). Sort of as if you held the selector over the PCB the wires would match the PCB?

I'm not using the fuse from the BOM. I ordered before the updated fuses. I have a 250V 250ma fuse. I'm in the US, so 110v.

Right, so the 2 sets of contacts that are shorted together when the selector is set to 115V should be connected to the 2 connectors that are closest to the transformer (as indicated by the 2 bars on the silkscreen). Then the remaining ones go to the connectors furthest from the transformer.

Can you check your transformer/paper that comes with it in the box and make sure the wiring is 1,2,4,3 and 5,6,8,7 (notice the order)? This is what burned me with blowing fuses once. The documentation online had showed it was 1,2,3,4 but in reality it was 1,2,4,3. It needs to be 1,2,4,3 for this board. What that equates to is the phasing of the transformer. If you have one coil out of phase, the AC on each coil "fight" with each other and you have a high current and blow a fuse. I can however confirm that both the Bel transformer on the Mouser BOM and the original Hammond unit I built Proto #1 do have this type of connection (1,2,4,3) and should work just fine with this board.

Beyond that, it would have to just be a short somewhere, which sounds like is not the case. Just double check your soldering around the Voltage reg pins.

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[quote](#) [ignore](#)

jbdiver
Wiggling with Experience

Posted: Sat Apr 06, 2019 7:38 pm Post subject:

It looks like the optional LEDs on build guide page 16 (PCB A) are not in the Mouser cart. No problem, I have a bunch of 3mm LEDs. I'm also assuming the LED square pads on the board are the anode(+).



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

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Beyond that, it would have to just be a short somewhere, which sounds like is not the case. Just double check your soldering around the Voltage reg pins.

Sounds like I have the right transformer (from the mouser bom). I'm away now so I can't check wiring further until I'm home, but here is a picture..

46915C7F-72DC-4A79-AB3C-51D24E5E4E0B.jpeg		
Description:		
Filename:	46915C7F-72DC-4A79-AB3C-51D24E5E4E0B.jpeg	Download
Filesize:	3.75 MB	
Downloaded:	10 Time(s)	

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



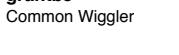
Posts: 158
Location: California, USA

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[quote](#) [edit](#) [ignore](#)

Can you add the plastic M3 screws to the BOM (voltage regs).

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69



[quote](#) [edit](#) [ignore](#)

grantb5
Common Wiggler

Sparky wrote:

Sounds like I have the right transformer (from the mouser bom). I'm away now so I can't check wiring further until I'm home, but here is a picture..

My transformer also looks like this.

My_PS_build_in_progress.jpg		
Description:		

Filename:	My_PS_build_in_progress.jpg	Download
Filesize:	3.54 MB	
Downloaded:	15 Time(s)	

Last edited by grantb5 on Sun Apr 07, 2019 1:47 am; edited 1 time in total

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

[Post](#) Posted: Sun Apr 07, 2019 1:36 am Post subject:

[quote](#) [ignore](#)

jbdiver wrote:

A dremel makes quick work of those pot shafts.

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Curiously I've never really needed a Dremel (or equivalent) until this week and now I have a second excuse to get one. :-)

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

[Post](#) Posted: Sun Apr 07, 2019 9:18 am Post subject:

[quote](#) [edit](#) [ignore](#)

grantb5 wrote:

jbdiver wrote:

A dremel makes quick work of those pot shafts.

Curiously I've never really needed a Dremel (or equivalent) until this week and now I have a second excuse to get one. :-)

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I actually took Altitude's suggestion and used some cable cutters (fairly large ones that have round blades for cutting large wire gauge cable). Super fast. Not super clean, but not bad at all.

I just have a hate for Dremel cut-off wheels! (I build airplanes when I'm not building synths!)

[profile](#) [pm](#) [email](#)

jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

[Post](#) Posted: Sun Apr 07, 2019 12:28 pm Post subject:

[quote](#) [ignore](#)

I'm populating board B with resistors and encountering a couple issues.

- 1) R1128 is listed as 27k but I don't see that in the BOM. I do see 26.7k resistors. Should this value be used instead?
- 2) R1212 is listed as 330 (I assume this is 330ohm). I don't see this resistor in the mouser cart.
- 3) R181 is listed as 100k, but I can't seem to find it on the board.
- 4) R161 is unpopulated on the board and there's no value in the build doc. Maybe R181 in the build document should be R161?

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devinw1
Veteran Wiggler

[Post](#) Posted: Sun Apr 07, 2019 12:58 pm Post subject:

[quote](#) [ignore](#)

Sparky, you look good to go! Nice wiring job too.

I'm not sure why you are blowing a fuse. And yes those are both the right transformers (Grant's pic as well). 



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Posted: Sun Apr 07, 2019 1:02 pm Post subject:

[quote](#) [edit](#) [ignore](#)

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

devinw1 wrote:

Sparky, you look good to go! Nice wiring job too.

I'm not sure why you are blowing a fuse. And yes those are both the right transformers (Grant's pic as well).

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Many thanks for checking it over. I'll post my troubleshooting progress when I get back to it and my new fuse order arrives.

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devinw1
Veteran Wiggler

Posted: Sun Apr 07, 2019 1:19 pm Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

jbdiver wrote:

I'm populating board B with resistors and encountering a couple issues.

- 1) R1128 is listed as 27k but I don't see that in the BOM. I do see 26.7k resistors. Should this value be used instead?
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- 3) R181 is listed as 100k, but I can't seem to find it on the board.
- 4) R161 is unpopulated on the board and there's no value in the build doc. Maybe R181 in the build document should be R161?

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devinw1
Veteran Wiggler

Posted: Sun Apr 07, 2019 1:23 pm Post subject:

[quote](#) [ignore](#)

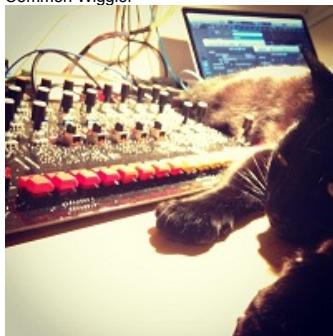


OK, I double checked all the resistors on Board B in the build doc and it looks like only that R1212 was wrong. I have corrected that and uploaded r03 of the build docs to the Github page. I believe the Mouser BOM should still be OK and give you guys enough 1.5k resistors to get the job done (5 pieces).

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

[Post](#) [quote](#) [ignore](#)

Posted: Sun Apr 07, 2019 2:49 pm Post subject:

devinw1 wrote:

jbdiver wrote:

I'm populating board B with resistors and encountering a couple issues.

1) R1128 is listed as 27k but I don't see that in the BOM. I do see 26.7k resistors. Should this value be used instead?

1) Yes, use the 26.7k. I just kept it like that to simplify the parts count since 26.7k resistors are needed elsewhere and rounding to 27k is well within tolerance for R1128.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Post](#) [quote](#) [ignore](#)

Posted: Sun Apr 07, 2019 2:59 pm Post subject:

FactoryDefault wrote:

devinw1 wrote:

jbdiver wrote:

I'm populating board B with resistors and encountering a couple issues.

1) R1128 is listed as 27k but I don't see that in the BOM. I do see 26.7k resistors. Should this value be used instead?

1) Yes, use the 26.7k. I just kept it like that to simplify the parts count since 26.7k resistors are needed elsewhere and rounding to 27k is well within tolerance for R1128.

There are only 2 of those 26.7ks in the bom. Don't we need both for the vco cards?

edit: more thoughts.

also, might be useful for those who started on build guide r01 to have a list of corrections at the end of the current guide so we can see what we missed.

EDIT: Looks like Sparky called out back in March that the Mouser BOM was indeed missing a 3rd 26.7k resistor (being used for a 27k) and I fixed it. You must have ordered before the correction. Sorry about that!

I agree on the revisions list, and I will compile this and post it.

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devinw1
Veteran Wiggler

[Post](#) [quote](#) [ignore](#)

Posted: Sun Apr 07, 2019 3:09 pm Post subject:

Revisions To Build Instructions:



R00 - initial copy uploaded to Github

R01 - Correct URL for newgroove.it

R02 - Add specific locations of each voltage regulator on PSU Board. Remove Board "A" R10/R11 from table (they don't exist).

R12 = 100k, R13 = 1.5k

R03 - Correct R1212 to 1.5k from 330Ohm

I also saw a comment about reduced image resolution. There is an option for that when I save a PDF. I'll re save it and select the higher resolution and upload it to replace the R03 in there now. 😊

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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[quote](#) [ignore](#)

FactoryDefault

Common Wiggler



devinw1 wrote:

EDIT: Looks like Sparky called out back in March that the Mouser BOM was indeed missing a 3rd 26.7k resistor (being used for a 27k) and I fixed it. You must have ordered before the correction. Sorry about that!

No worries. I have a bag of assorted resistors. 😊

After building things like the ttsh and the nava, i realized that was the only way to go unless i wanted to spending \$50 a week on mouser shipping.

Joined: 29 Mar 2016

Last Visit: 20 Apr 2019



Posts: 90

I have a Frys near me but as anyone who's ever visited a Fry's knows, they have everything except the thing you want. 🙄

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jbdiver

Wiggling with Experience



devinw1 wrote:

3) R181 is right next to U105 (opposite side of where VCO 2 goes)

4) It is there. In the 100k group on the table. It should be 100k and is located next to the OSC 1 switch in the upper left corner of the board.

Joined: 31 Aug 2010

Last Visit: 19 Apr 2019



Posts: 267

Location: Minneapolis, USA

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[quote](#) [ignore](#)

devinw1

Veteran Wiggler

FactoryDefault wrote:

devinw1 wrote:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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I have a Frys near me but as anyone who's ever visited a Fry's knows, they have everything except the thing you want. 🤪

Ugh... truth. I have one I can almost walk to from work. Such a shit show though lol. The whole place always feels one step away from going out of business. Sad though, it's rare to find a place to buy actual components anymore. Radio shack used to have stuff like that back in the day but that is long gone.

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Posted: Sun Apr 07, 2019 5:11 pm Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

jbdiver wrote:

devinw1 wrote:

3) R181 is right next to U105 (opposite side of where VCO 2 goes)

4) It is there. In the 100k group on the table. It should be 100k and is located next to the OSC 1 switch in the upper left corner of the board.

Cool. I've got it all sorted out now. Funny thing is that I saw R161 immediately after taking a 2 hour break.

Sometimes you just need to step away from the board for awhile. 🤪

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Posted: Mon Apr 08, 2019 2:21 pm Post subject:



Joined: 27 Jun 2017
Last Visit: 18 Apr 2019



Posts: 125

Oh man. This thing will be right at home next to my Model D clone I've been working on.

I've just put an order in for 3 of the Rev G. chips. Between those and the CA3280E OTA I'm at a state of "can't turn back now". I'm excited to sink my teeth into this one. Your ME skills definitely show - absolutely gorgeous assembly.

I've gotta start saving my pennies for the kit 😊

-KM

Location: Springfield, Massachusetts

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019
 Posts: 158
Location: California, USA

[Post](#) [quote](#) [edit](#) [ignore](#)

I check in to this thread often. Especially being a voyer this week as I'm away from my bench.

Thanks for the hi-res Devin. Now I need to flip my LEDs too 😊

You don't mention testing any points on PCB A / B before putting the ICs in. Some direction there might be good in future. I'll do the basics like checking the power pins aren't shorted before adding ICs - yes?

Has anyone else powered up the PSU yet?

As of Saturday I was PCB A done, PCB B stuffed with resistors, case assembled to PSU.

My keybed seems to be reluctant to leave Europe unlike too many of my ex countrymen (British).

Fry's ...wow very sad :(... I went to the one in Palo Alto (original?) for the first time in 20 years a few weeks back. Couldn't find my parts, but they had cheap knock-off perfume and cat litter pans and toys!! I was sad, but my wife and cat smell nice now!

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019
 Posts: 69

[Post](#) [quote](#) [ignore](#)

Being the heretic, I'm actually building from the schematic and only looking at the build notes as I get lost (and I think I ordered from an early Mouser BOM). 😺 😷

I wouldn't think this post is of great concern to the masses.

Not sure this has been addressed or not... I have a plethora* of 90.9k's and the only remaining potential use I can see for those is R1153, R1158 and R1161. The schematic shows those as 91k. Is 90.9 OK or should I grab three 91k's from around here? I did not receive any 91k's. *Dave S. says 91k.*

On the voice cards, the schematic shows 1.82K but I received three of 1.8k. Two leftover. Are these OK for the R20's? *Dave S. says 1.82k so I should probably fix. Edit: I think Mouser has a part bug here. Part number and description don't seem to match... I might get these since I'm ordering other stuff anyway. Will check value of originals first.*

<https://www.mouser.com/ProductDetail/603-MFR-25FBF52-1K82>

I have a spare 220K but the Mouser BOM was for 4 and this is probably because only one voice uses it so 3 are accounted for.

I have a spare 200k but the build document only shows 11 and my Mouser BOM was for 12.

* I ordered 10 probably because it was cheaper. I bumped up a few of the quantities if the next price break quantity reduced the cost.

Last edited by grantb5 on Tue Apr 09, 2019 10:25 am; edited 4 times in total

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Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

 Posted: Mon Apr 08, 2019 11:44 pm Post subject:[quote](#) [ignore](#)

I'm working on the VCOs and need some guidance.

The table says R3 = 270K (VCO 1) / 820K (VCO 2)

The schematic says R3 = 220K

Which is correct?

edit: the BOM has no 270k but I do have 220Ks left over...

Sparky wrote:

Fry's ...wow very sad :(.

I know I started the Fry's bashing so to be fair, i went to Fry's tonight to buy flux remover and isopropyl. They had both! Also, the front door looks like this:



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Common WigglerJoined: 12 Oct 2010
Last Visit: 20 Apr 2019

Posts: 69

[Post](#) Posted: Tue Apr 09, 2019 12:02 am Post subject:[quote](#) [ignore](#)**FactoryDefault wrote:**

I'm working on the VCOs and need some guidance.

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The schematic says R3 = 220K

Which is correct?

edit: the BOM has no 270k but I do have 220Ks left over...

I know I started the Fry's bashing so to be fair, i went to Fry's tonight to buy flux remover and isopropyl. They had both! Also, the front door looks like this: ...

Tried to help by looking at the original schematics but that made things worse because R3 for OSC B is different yet again. Obviously Devin has to chime in here. I used 220k/820k but Dave Smith says 220k/1M.

Yeah each Fry's store has it's own theme. They are actually pretty interesting in that regard.

[Back to top](#)[profile](#) [pm](#)**devinw1**
Veteran Wiggler[Post](#) Posted: Tue Apr 09, 2019 12:11 am Post subject:[quote](#) [ignore](#)

LMAO, your Frys is way more deluxe than the wilsonville Oregon location.. will post a pic tomorrow of the cracking plaster on the entry...

I'll reply in detail tomorrow on the questions posted but really quick on the 270 vs 220k thing, I have a comment on that earlier in the thread. TLDR I think Dave at SCI originally miscalculated because the 2 VCOs are much closer together in pitch to start calibrations when you use the 270 vs 220. This and the 820k for the other VCO set the initial frequency but In my experience there is enough latitude in the trim pots to use either the 220k or the 270k, but the 270k is more centered on the adjustment window. So either *should* be ok based on my build experience of 2 units, 1 with a 270k and one with a 220k.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR[Back to top](#)[profile](#) [pm](#) [email](#)**FactoryDefault**
Common Wiggler[Post](#) Posted: Tue Apr 09, 2019 12:44 am Post subject:[quote](#) [ignore](#)**devinw1 wrote:**

LMAO, your Frys is way more deluxe than the wilsonville Oregon location.. will post a pic tomorrow of the cracking plaster on the entry...

Yeah. I shouldn't complain. There's a giant alien octopus in the computer department. My kids love it.

devinw1 wrote:

I have a comment on that earlier in the thread.



Sorry. I am trying to pay attention. I promise.

Here's the post about R3. Now I remember seeing this...

devinw1 wrote:

Minor update: I added a 270k resistor to the main BOM. THe mouser car link on page 1 and the Github are updated.

Basically, there is a resistor for each VCO that sets the initial frequency. On the original Pro-One, VCO 1 has a 220k and VCO has an 820k. After having built 2 units and crunching the numbers, I believe that Dave may have been off a little bit with the 220k. If you use a 270k on VCO 1, it is much closer to where it needs to be to calibrate both of them where they need to be (where C0 at octave 0 is C0). There appears to be enough latitude in the offset trimpot to accommodate the 220k (that's what I built my first prototype with), but the 270k will get ya much closer.

As you were! Guinness ftw!

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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Posted: Tue Apr 09, 2019 10:31 am Post subject:



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Not sure this has been addressed or not... I have a plethora* of 90.9k's and the only remaining potential use I can see for those is R1153, R1158 and R1161. The schematic shows those as 91k. Is 90.9 OK or should I grab three 91k's from around here? I did not receive any 91k's. *Dave S. says 91k.*

This is another case where there is one instance where a 90.9k is called out, but I grouped the BOM for the other instances of 91k to make it simpler. The original P1 schematic calls out all Rs 5% unless they are called out otherwise, so a 90.9k 1% as is on the BOM can easily substitute for a 91k 5%.

On the voice cards, the schematic shows 1.82K but I received three of 1.8k. Two leftover. Are these OK for the R20's? *Dave S. says 1.82k so I should probably fix.* Edit: I think Mouser has a part bug here. Part number and description don't seem to match...

The two VCOs need the 1.82k 1%, which is what is in the mouser cart. The confusion here is that for some odd reason those come labeled as 1800 Ohm from Mouser... But they really are 1.82k 1%. You can search the PN on mouser and it will show you this. For the 3rd instance, we are just using the extra 1.82k as a 1.8k to simplify the BOM, same as your first question.

I have a spare 200k but the build document only shows 11 and my Mouser BOM was for 12.

Hmm, you are right. I will check the KiCAD tonight to see if there really are only 2 of those on board A. If so, it looks like I just put an extra in the Mouser cart.

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Posted: Tue Apr 09, 2019 10:43 am Post subject:



grantb5 wrote:

Tried to help by looking at the original schematics but that made things worse because R3 for OSC B is different yet again. Obviously Devin has to chime in here. I used 220k/820k but Dave Smith says 220k/1M.

Yeah each Fry's store has its own theme. They are actually pretty interesting in that regard.

In the original schematics (both the ones on Synthfool's site and the ones in the Technical Manual), I see 220k (VCO1)/820k (VCO2), not a 1M...

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019

Posts: 589
Location: Portland, OR

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Kevin Mitchell
Common Wiggler



Joined: 27 Jun 2017
Last Visit: 18 Apr 2019

 Posts: 125
Location: Springfield, Massachusetts

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Tue Apr 09, 2019 11:00 am Post subject:

[quote](#) [ignore](#)

I'm sorting out the BOM and wanted to share some notes.

Quote:

Your estimated total build cost = 599USD + Mouser Carts(267USD)+TurboCPU(100USD)+Keybed(68USD)+CEM Chips (15USD) = 1047USD

Each CEM Rev G chip is \$15 so that's ~\$45 for the 3. Also the CEM repro (AS) chips are ~\$8 each. That means ~\$70 for the CEM chips.

Turbo CPU is \$120.

Keybed is ~\$100 unless you're a part of a group buy.

You can cut about \$50 off the mouser order if you source them from Tayda (resistors, ICs, box film caps, jacks & some connectors).

Cheapest place to buy the knobs (also in other colors)

-KM



Posted: Tue Apr 09, 2019 11:14 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

grantb5 wrote:

Tried to help by looking at the original schematics but that made things worse because R3 for OSC B is different yet again. Obviously Devin has to chime in here. I used 220k/820k but Dave Smith says 220k/1M.



Yeah each Fry's store has it's own theme. They are actually pretty interesting in that regard.

In the original schematics (both the ones on Synthfool's site and the ones in the Technical Manual), I see 220k (VCO1)/820k (VCO2), not a 1M...

Roger that. I have paper copies but never thought to look. I was using:

<http://manuals.fdiskc.com/tree/Sequential%20Circuits/Sequential%20Circuits%20Pro-One%20Schematic%202%20of%202.jpeg>

Thanks for double checking the other ones for me. I should be good to go.



Posted: Tue Apr 09, 2019 11:17 am Post subject:

[quote](#) [ignore](#)

grantb5 wrote:

devinw1 wrote:

grantb5 wrote:

Tried to help by looking at the original schematics but that made things worse because R3 for OSC B is different yet again. Obviously Devin has to chime in here. I used 220k/820k but Dave Smith says 220k/1M.



Yeah each Fry's store has it's own theme. They are actually pretty interesting in that regard.

In the original schematics (both the ones on Synthfool's site and the ones in the Technical Manual), I see 220k (VCO1)/820k (VCO2), not a 1M...

Roger that. I have paper copies but never thought to look. I was using:

Whoa! Crazy. I believe that 1M would set the Oscs even further apart to start. Weird. I actually ran the whole thing on LTSpice and a 820k/270k combination gets the initial frequency the closest.

Looks like your copy is an early (pre A) revision. The one in the Technical Manual is Revision D. Shows that 1M getting switched out at Revision C.

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

devinw1 wrote:

Whoa! Crazy. I believe that 1M would set the Oscs even further apart to start. Weird. I actually ran the whole thing on LTSpice and a 820k/270k combination gets the initial frequency the closest.

Looks like your copy is an early (pre A) revision. The one in the Technical Manual is Revision D. Shows that 1M getting switched out at Revision C.

Yeah for sure "mine" is older. Funnily enough I had a Pro One open in the other room, but last night but I was too burned out to even think of looking. And it's an early one with the transformer mounted to the PCB.

Last edited by grantb5 on Tue Apr 09, 2019 11:33 am; edited 1 time in total

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Kevin Mitchell wrote:

I'm sorting out the BOM and wanted to share some notes.

Quote:

Your estimated total build cost = 599USD + Mouser Carts(267USD)+TurboCPU(100USD)+Keybed(68USD)+CEM Chips (15USD) = 1047USD

Each CEM Rev G chip is \$15 so that's ~\$45 for the 3. Also the CEM repro (AS) chips are ~\$8 each. That means ~\$70 for the CEM chips.

Turbo CPU is \$120.

Keybed is ~\$100 unless you're a part of a group buy.

You can cut about \$50 off the mouser order if you source them from Tayda (resistors, ICs, box film caps, jacks & some connectors).

[Cheapest place to buy the knobs \(also in other colors\)](#)

-KM

Thanks. The KB cost was actually based on the Newgroove.it price, not a group buy. Point taken on the chip costs.

The knobs, Altitude909 actually had a batch popped off for these kits and offered them very cheap.

A final note, I do appreciate future guidance, but I should probably say that it is EXTREMELY unlikely I will actually be doing another round of kits for these at this point. The whole thing took an enormously larger amount of work than I had expected, and (believe it or not), I definitely lost money on the whole deal if you include my development expenses. Add in the stress of dealing with vendors and other stuff that I already have to do at my day job, and it makes the whole prospect of doing it again rather dubious. I love watching people put this stuff together, but I gotta keep my sanity and health too 😊. We shall see though. Maybe after I chill for a while.

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Kevin Mitchell

Common Wiggler



Joined: 27 Jun 2017

Last Visit: 18 Apr 2019



Posts: 125

Location: Springfield, Massachusetts

[Back to top](#)

[Post](#): Tue Apr 09, 2019 11:39 am Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

I should probably say that it is EXTREMELY unlikely I will actually be doing another round of kits for these at this point.

Well shit. Alright. Hopefully I can catch the next run if it happens. I don't frequent this forum often so I'm not sure if I'll strike luck there - already missed my first shot 😊

Congratulations on such an awesome project. Looking forward to seeing what else you may decide to peruse in the DIY world.

-KM

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Chrutil

Wiggling with Experience



Joined: 21 Mar 2013

Last Visit: 20 Apr 2019



Posts: 462

Location: San Rafael, California

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[Post](#): Tue Apr 09, 2019 1:16 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

A final note, I do appreciate future guidance, but I should probably say that it is EXTREMELY unlikely I will actually be doing another round of kits for these at this point. The whole thing took an enormously larger amount of work than I had expected, and (believe it or not), I definitely lost money on the whole deal if you include my development expenses. Add in the stress of dealing with vendors and other stuff that I already have to do at my day job, and it makes the whole prospect of doing it again rather dubious. I love watching people put this stuff together, but I gotta keep my sanity and health too 😊. We shall see though. Maybe after I chill for a while.

Totally understandable.

I do, however, really hope you would consider offer the mod wheel assembly on its own at some point. I would get a few of those, they looked spectacular, very well done.

Thanks

[profile](#) [pm](#) [email](#)

Jannel

Wiggling with Experience

Joined: 19 Oct 2015

Last Visit: 20 Apr 2019



Posts: 257

[Post](#): Tue Apr 09, 2019 2:04 pm Post subject:

[quote](#) [ignore](#)

Chrutil wrote:

I do, however, really hope you would consider offer the mod wheel assembly on its own at some point. I would get a few of those, they looked spectacular, very well done.

Thanks

Yes, I'll buy 10+ pcs immediately if made available!

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

[Post](#): Tue Apr 09, 2019 3:04 pm Post subject:

[quote](#) [ignore](#)

RE: The wheels, I have parts to immediately build I believe 4 more sets. I'll get them done this weekend.

And I will definitely consider doing runs of more of those. 😊

[Back to top](#)[profile](#) [pm](#) [email](#)**jbdiver**
Wiggling with ExperienceJoined: 31 Aug 2010
Last Visit: 19 Apr 2019Posts: 267
Location: Minneapolis, USA[Back to top](#)[profile](#) [pm](#) [email](#)**devinw1**
Veteran WigglerJoined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR[Back to top](#)[profile](#) [pm](#) [email](#)**jbdiver**
Wiggling with ExperienceJoined: 31 Aug 2010
Last Visit: 19 Apr 2019Posts: 267
Location: Minneapolis, USA[Back to top](#)[profile](#) [pm](#) [email](#)**FactoryDefault**
Common Wiggler[profile](#) [pm](#) [email](#)**jbdiver wrote:**

I can't seem to find R15 and R16 on the vco boards. These are listed in the build guide.

I can't seem to find R15 and R16 on the vco boards. These are listed in the build guide.

I ended up with these extra parts:

200pf capacitor
20k resistor
100k resistor
200k resistor
2 - 220k resistors

[profile](#) [pm](#) [email](#)[profile](#) [pm](#) [email](#)**jbdiver wrote:**

I can't seem to find R15 and R16 on the vco boards. These are listed in the build guide.

Yeah I scratched my head over those for a while too. 😊
Pretty sure they aren't on those boards.



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Wed Apr 10, 2019 10:35 am Post subject:

jbdiver wrote:

200k resistor

This was an extra on the BOM. To be expected.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Posted: Wed Apr 10, 2019 11:24 am Post subject:

jbdiver wrote:

I've finished building all the boards but I ended up with a handful of extra components (resistors and cap) from the mouser order which makes me a little nervous. I checked to see if I missed any spots but didn't see anything. It's possible mouser messed up the part count.

I can't seem to find R15 and R16 on the vco boards. These are listed in the build guide.

I ended up with these extra parts:

200pf capacitor
20k resistor
100k resistor
200k resistor
2 - 220k resistors

Hey, they are thru hole... Hold em up to light and if you don't see any holes... you got it all stuffed.

I seem to remember having an extra 200pf cap when building. I'll have to check on the others. That being said Mouser DOES screw up sometimes adding and subtracting stuff. In fact almost every order I've had has had 1 or 2 "bonus" items thrown in.

Guessing they are hand counted so there's always potential for error.

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devinw1
Veteran Wiggler



Posted: Wed Apr 10, 2019 11:27 am Post subject:

FactoryDefault wrote:

jbdiver wrote:

I can't seem to find R15 and R16 on the vco boards. These are listed in the build guide.

Yeah I scratched my head over those for a while too.

Pretty sure they aren't on those boards.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019

Posts: 589
Location: Portland, OR

Whoops! Yeah, rev AA of those boards had the R15 and R16, which was my mistake transcribing the schematics moving all the VCO stuff off Board B to the cards. I see it ended up on the table in build docs. Doh! They are nonpresent on your VCO cards.

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I'll regenerate the VCO BOM from KiCAD tonight and issue a new revision of build instructions. 😊

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Apr 10, 2019 11:31 am Post subject:

Ah yes, the 200pF cap is definitely an extra. My BOM had calculated 3 of them total (1 for PCB-A and 1 for each VCO), but that cap is a no-stuff on one of the VCO cards.

Mouser cart has been updated to qty 2 of those.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Wed Apr 10, 2019 11:45 am Post subject:

For the other extras found by jbdiver

- 20k Was an extra. Should be 3 on the cart. Cart and BOM on github are updated
- 100k regular 1% I still count 36 total. If you have an extra you missed one or Mouser miscounted (very possible)
- 200k Was an extra. Should be 11 on the cart. Cart and BOM on github are updated
- 220k Were 2 extra. Should be 2 on the cart. Cart and BOM on github are updated

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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Posted: Wed Apr 10, 2019 1:08 pm Post subject:

Thanks for confirming these parts Devin and updating the documentation!

When I was looking at board A this morning I noticed one unpopulated board component. I can't remember the exact number, but it was located to the left of C154. Maybe an inductor? Anyway, I don't think it was described in the build guide.

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devinw1
Veteran Wiggler

Posted: Wed Apr 10, 2019 1:24 pm Post subject:

jbdiver wrote:

Thanks for confirming these parts Devin and updating the documentation!

When I was looking at board A this morning I noticed one unpopulated board component. I can't remember the exact number, but it was located to the left of C154. Maybe an inductor? Anyway, I don't think it was described in the build guide.



Ah yes there is one inductor, L101, in board A and I did forget it on the build doc. It is however in the Mouser cart (652-RL262-471J-RC).

Good news is that Grant has said that it is not used for the TurboCPU so you can leave it off unless you are going to run an original 8021 CPU from an old Pro-One (It is just tying the XTAL1/XTAL2 (external interface) pins together on the OG pro-one.)

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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jbdiver
Wiggling with Experience



Posted: Wed Apr 10, 2019 10:11 pm Post subject:

[quote](#) [ignore](#)

What direction is the AS3280 smd chip placed on the board? I can see a little dot which must be the 1 pin.

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Posted: Wed Apr 10, 2019 11:03 pm Post subject:

[quote](#) [ignore](#)

jbdiver wrote:

What direction is the AS3280 smd chip placed on the board? I can see a little dot which must be the 1 pin.

The silkscreen footprint does kind of mark pin 1 with a longer line, but yeah it's hard to see. Pin 1 (which yes has the dot on the chip) sits down and to the left, in the same position as its DIP brother.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019

Posted: Thu Apr 11, 2019 8:18 am Post subject:

[quote](#) [ignore](#)

Dumb question ... the SMD option for the matched resistors, what package is that? 0603?



Posts: 69

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posted: Thu Apr 11, 2019 10:33 am Post subject:

grantb5 wrote:

Dumb question ... the SMD option for the matched resistors, what package is that? 0603?

Pretty sure 0805. I will check the model at home. I seem to remember Altitude saying that you can fit 0603s on the same footprint.

The ones in stock at Newark are 0805s:

<https://www.newark.com/multicomp/mctf0805tty1003/res-thin-film-100k-0-01-0-0625w/dp/41P0399>

jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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Posted: Thu Apr 11, 2019 10:59 am Post subject:

Two questions:

What direction do we place the TurboCPU board?

Do the shafts on the rotary switches need to be trimmed like the pots if we are using altitude's knobs?

grantb5
Common Wiggler



Joined: 12 Oct 2010
Last Visit: 20 Apr 2019

Posts: 69

Posted: Thu Apr 11, 2019 11:31 am Post subject:

jbdiver wrote:

What direction do we place the TurboCPU board?

Unless I'm mistaken, pin 1 is indicated for both, non? (PCB shows notch and TurboCPU indicates Pin 1)

You might want to check out basic things like drone and repeat before sticking a \$100 chip in. 😊

Last edited by grantb5 on Thu Apr 11, 2019 11:44 am; edited 1 time in total

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makhho
Common Wiggler



Joined: 05 Feb 2018
Last Visit: 20 Apr 2019

Posted: Thu Apr 11, 2019 11:38 am Post subject:

jbdiver wrote:

I support your decision to hold off on producing more kits. My expectation is that these Weston synths will command ridiculously high collector prices someday. I now consider this synth part of my retirement portfolio. 😷



Posts: 124

jbdiver wrote:

My expectation is

lol

outside of self-inquiry and it being an enjoying challenge to reproduce, i want to believe that making a reproduction accessible for builders was part of devin's ideology.

not sure about the thought of scarcity and consequent speculation it could produce -- FFS this is a DIY board, not Reverb.

Last edited by makhho on Thu Apr 11, 2019 12:09 pm; edited 2 times in total

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

jbdiver wrote:

Two questions:

What direction do we place the TurboCPU board?

Do the shafts on the rotary switches need to be trimmed like the pots if we are using altitude's knobs?

The socket indicates the direction of Pin 1 just like any DIP socket, so just line it up with pin 1 on the Turbo.

The rotary shafts are actually shorter than the pots. According to my math and not having the CAD model in front of me the end of the rotary switch shaft is 29.9 (let's say 30mm) from the board. The pots are an even 32.5mm. So, if we are snipping 4.5-5mm of material from the pots, **you would need to snip only 2-2.5mm of material from the rotary shafts. Keep in mind, these have a longer "D" cut, so they will not self-stop on the D part, so you'll want to be fairly accurate in your cutting.** Thanks for the reminder on this and I will add this to the build instructions.

Apologies for not having a more elegant solution for this, but if you've ever looked for 4 position, thru hole, shorting-style rotary switches, you'll know there are VERY VERY few choices. Lol.

Last edited by devinw1 on Thu Apr 11, 2019 12:09 pm; edited 2 times in total

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

makhho wrote:

jbdiver wrote:

I support your decision to hold off on producing more kits. My expectation is that these Weston synths will command ridiculously high collector prices someday. I now consider this synth part of my retirement portfolio.



'your expectation' lol

outside of self-inquiry and it being an enjoying challenge to reproduce, i want to believe that making a reproduction accessible for builders was part of devin's ideology.

not sure about the thought of scarcity and consequent speculation it could produce -- FFS this is a DIY board, not Reverb.

I don't want to stoke any fires or encourage drama here (please not on this thread, lol), but I think he was quite joking with that comment.

You are correct, the whole goal of this whole thing has been always because I enjoy doing this kind of stuff (like everyone on this DIY forum) and sharing our challenges/successes/whatever with like-minded people.

[Back to top](#) [profile](#) [pm](#) [email](#)**makhho**
Common WigglerJoined: 05 Feb 2018
Last Visit: 20 Apr 2019

Posts: 124

devinw1 wrote:

I don't want to stoke any fires or encourage drama here (please not on this thread, lol), but I think he was quite joking with that comment.

No drama! No moral policing!

lol of course :^)

Just want to make sure there is some sort of thought check on that behavior (joking or not) coming off a DIY forum.

[Back to top](#) [profile](#) [pm](#)**devinw1**
Veteran WigglerJoined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR[Back to top](#) [profile](#) [pm](#) [email](#)**tjs**
Learning to WiggleJoined: 30 May 2009
Last Visit: 19 Apr 2019Posts: 49
Location: Berlin



PRO2021 landed in Berlin today. After the first shock regarding the holes in the package I realised that all is good, no damage done due to great internal packing. Grande.

I will start building this weekend with parts I have lying around and then order the remaining parts.

Thank you Devin for this great project, and also thank you Grant and Altitude.

Last edited by tjs on Thu Apr 11, 2019 3:12 pm; edited 1 time in total

[profile](#) [pm](#) [email](#)

Posted: Thu Apr 11, 2019 2:43 pm Post subject:

[quote](#) [ignore](#)

Good god!!! What did they do??

Ugh, sorry that is so frustrating. I just got a nice piece of vinyl I paid \$25 for and was shipped in a very robust package that said "fragile - do not bend me" and Royal Air Mail managed to ruin the whole corner of the record jacket. It felt damp like the whole corner had been submerged in water! Unreal.

So glad the internals are OK. I specifically added even more padding on the international boxes. I hope everyone's makes it alright.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019

Posts: 589
Location: Portland, OR

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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jbdiver
Wiggling with Experience



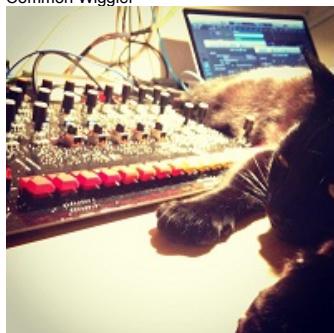
Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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devinw1
Veteran Wiggler

[Post subject:](#)

jbdiver wrote:

On build guide page 38, it says we should install 4 x 3/4" standoffs on the chassis bottom. I assume this means the 4 bottom holes from the right. The 2 holes on the far left look like they connect with the chassis top.



Right. You'll notice there are only 4 pairs of holes (the rightmost ones). Those capture the 3/4" standoffs from either side simply to rigidify the U bend. The left two connect the long leg of the chassis top (where the benders are) when doing the final assembly.

I really should bust out an exploded view of the mechanical assembly in solidworks.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019
 Posts: 158
Location: California, USA

[Posted: Thu Apr 11, 2019 8:48 pm](#) Post subject:

[quote](#) [edit](#) [ignore](#)

grantb5 wrote:

You might want to check out basic things like drone and repeat before sticking a \$100 chip in. 😊

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Thanks for that. I'm not there yet, but any advice on testing before putting the "big \$ ones" in is always good!

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

[Posted: Thu Apr 11, 2019 8:59 pm](#) Post subject:

[quote](#) [ignore](#)

On page 46 it describes how to wire up the line selector to the psu board: " The image of a DPDT switch on the silk screen on the board indicates clearly which wire should go to which terminal." Okay, I'm feeling stupid. How do those wires map to the psu lugs? Maybe I'm overthinking this.

Last edited by jbdiver on Fri Apr 12, 2019 9:47 am; edited 1 time in total

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devinw1
Veteran Wiggler



[Posted: Thu Apr 11, 2019 10:25 pm](#) Post subject:

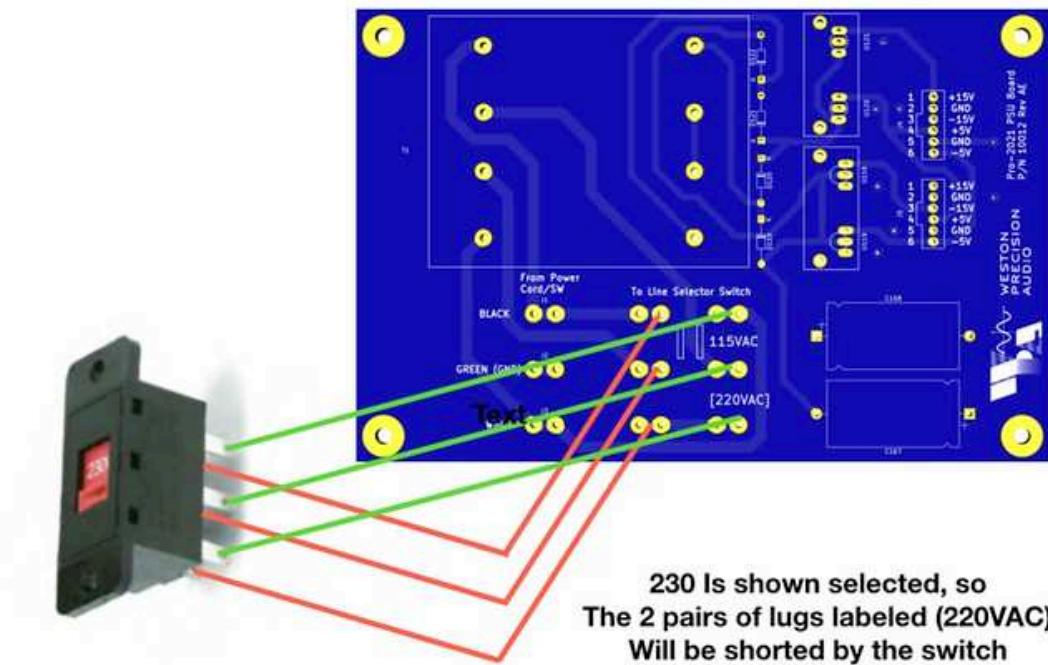
[quote](#) [ignore](#)

If you go back a little in this thread, FactoryDefault asks the same thing and has a picture of his setup (which is oddly blowing a fuse, lol... but it looks correct).

TLDR; if you look at the switch, when the "115" (switch is in the UP position) is selected, it will be shorting two UPPER sets of contacts. These need to wire to the ones shown shorted on the PSU (the ones closest to the transformer). The remaining ones (the lowest ones on the switch) go to the ones furthest from the transformer.

Perhaps this will help (note the colors of the lines don't indicate anything other than to make it clear what is what)

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR



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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

Posted: Fri Apr 12, 2019 12:03 am Post subject:

[quote](#) [ignore](#)

Just a friendly reminder to us all: be careful with 220/110, ask&post pics if in doubt!

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tjs
Learning to Wiggle



Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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Posted: Fri Apr 12, 2019 1:42 am Post subject:

[quote](#) [ignore](#)

jbdiver wrote:

Somebody used that box for target practice.

Yeah, with a forklift... 😊

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Fri Apr 12, 2019 8:27 am Post subject:

[quote](#) [ignore](#)

Sparky wrote:

grantb5 wrote:

You might want to check out basic things like drone and repeat before sticking a \$100 chip in. 😊

Thanks for that. I'm not there yet, but any advice on testing before putting the "big \$ ones" in is always good!

I would start with just the power supply and measure the voltages. Then turn that off and wait for the voltages to drop to zero before touching it again. 😊

Then I would take the first board it connects to and without any chips, connect that board and again measure the voltages (this time I would also check the expected supply voltages at each socket which helps to tell you if any are in backward if you do this from the top of the socket itself versus the schematic). Repeat with the other large board and then with the voice cards, also unpopulated. Once the power is OK on everything I would start adding chips...

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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[quote](#) [ignore](#)

devinw1 wrote:
If you go back a little in this thread, FactoryDefault asks the same thing

Who me? 😊 That was sparky blowing a fuse on page 25. I've haven't reached that part yet.

In other news, I still haven't received my keybed from newgroove.

It seems to be stuck in a USPS vortex. 🤦‍♂️

Was thinking about the resistive strip that I haven't seen yet.

Is that intended for velocity or aftertouch? Anyone have any ideas yet on how to integrate that into the mod section?

I was thinking maybe I'd add a switch so it can replace the mod wheel but not having a keybed to measure, I'm not sure how feasible/complex that will be...

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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FactoryDefault wrote:

In other news, I still haven't received my keybed from newgroove.

I haven't received my keybed yet either, and I'm basically at that point in the build doc where you install it. I'll have to skip over that part for now. Are you based in the US? I didn't receive any notice of shipment or tracking info from newgroove. I did receive a customer satisfaction survey from them 2 weeks ago. 😊 Maybe I need to contact them to get tracking info?

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



[profile](#) [pm](#) [email](#)

[quote](#) [ignore](#)

devinw1 wrote:

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Perhaps this will help (note the colors of the lines don't indicate anything other than to make it clear what is what)

Thanks for this diagram Devin, really helpful! I recommend adding that to the build guide. BTW, I really like this power configuration. It looks and feels really solid.

Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Fri Apr 12, 2019 10:21 am Post subject:

FactoryDefault wrote:

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Is that intended for velocity or aftertouch? Anyone have any ideas yet on how to integrate that into the mod section?

I was thinking maybe I'd add a switch so it can replace the mod wheel but not having a keybed to measure, I'm not sure how feasible/complex that will be...

oops! Sorry, I knew it was someone! 😊 Glad you aren't blowing a fuse 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Fri Apr 12, 2019 10:21 am Post subject:

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Thanks for this diagram Devin, really helpful! I recommend adding that to the build guide. BTW, I really like this power configuration. It looks and feels really solid.

Yes, I will add it for sure. 😊

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

□ Posted: Fri Apr 12, 2019 10:22 am Post subject:

devinw1 wrote:

Pretty sure 0805. I will check the model at home. I seem to remember Altitude saying that you can fit 0603s on the same footprint.

The ones in stock at Newark are 0805s:

<https://www.newark.com/multicomp/mctf0805tly1003/res-thin-film-100k-0-01-0-0625w/dp/41P0399>

As it turned out I had a few dozen of these 1% from Mouser and was it was easy to find a dozen 100,000 +/- 10 ohm in that batch:

CMF55100K00FHEB

Mouser is broken for me atm else I would have posted a link. Maybe being half watt makes the precision easier??? 

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[!\[\]\(ccbb76077a6a9d4b215a3f124777be35_img.jpg\) quote](#) [!\[\]\(90d61a846303b166b0123fcb7e4d2a12_img.jpg\) ignore](#)

FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

jbdiver wrote:

I didn't receive any notice of shipment or tracking info from newgroove. I did receive a customer satisfaction survey from them 2 weeks ago.  Maybe I need to contact them to get tracking info?

Hi Jbdiver - Yes I'm in California. When I ordered from newgroove, I created an account. Not sure if that was mandatory or not because the site was all in Italian and I was blindly clicking on things hoping it would work.

Now when I log in to the account I can see the order and the tracking number. It's an Italian number but USPS tracking has knowledge of it and thinks the package is still in Italy. I've seen similar USPS snafus before. The case for my Nava came from Poland to SoCal via San Jose where it sat for 3 weeks :rolleyes:

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[!\[\]\(17e78103c3896a09bb3e3938ca5f2282_img.jpg\) quote](#) [!\[\]\(2ad73185dea30f0b23cd81655f055b5e_img.jpg\) ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1 wrote:

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As it turned out I had a few dozen of these 1% from Mouser and was it was easy to find a dozen 100,000 +/- 10 ohm in that batch:

CMF55100K00FHEB

Mouser is broken for me atm else I would have posted a link. Maybe being half watt makes the precision easier??? 

That's pretty lucky I think, at 1%. If you do the math, but I hate stats. Lol.

I did the same but bough 0.1% which are not too expensive and sorted them. Out of 30 pieces, I was able to find 2 sets of 6 matched to 0.01% a couple of times.

That all being said, if you think about how they bin these, if they are pulling a significant amount out for some customer to get 0.01%, you might end up getting unlucky and getting the tails or section of the distribution. But, they also make millions of these things, so maybe not an issue. It all starts roughly as a Gaussian distribution in theory, but again stats...blech.

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[!\[\]\(fc7a4e93a24aeb649d1803df675723dc_img.jpg\) quote](#) [!\[\]\(0cda617ecdec65cfbe44e7c773b84ea3_img.jpg\) ignore](#)

grantb5
Common Wiggler

Posted: Fri Apr 12, 2019 11:09 am Post subject:

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

FactoryDefault wrote:

Was thinking about the resistive strip that I haven't seen yet.
Is that intended for velocity or aftertouch? Anyone have any ideas yet on how to integrate that into the mod section?
I was thinking maybe I'd add a switch so it can replace the mod wheel but not having a keybed to measure, I'm not sure how feasible/complex that will be...

It's aftertouch. Velocity would be handled by the second contacts on the keybed, but the original Pro One has no wire routing for those.

There are Aftertouch amplifiers(?) widely available on eBay. I've never played with it, but any old Yamaha or Korg that uses these might give a clue. **All speculation of course.** It looks to me that they bought the circuit board from a 3rd party, possibly Italian. Not sure why, but maybe a patent thing. Looks like this:

<https://www.ebay.com/itm/Yamaha-SY77-Pressure-Aftertouch-PCB-Board-for-parts-or-replacement/352613837873>

There are probably a dozen of these on eBay now. A little tricky to search for, but common as dirt. (For example, I have a DX7S in pieces atm and the board is EXACTLY the same. Korgs have the same one too, probably from before Yamaha bought them).

Also, I'm reminded of a guy that went his own way on this... <https://www.matrixsynth.com/2012/03/monophonic-after-touch-key-pressure.html>

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[Posted: Fri Apr 12, 2019 4:49 pm](#) [Post subject:](#)

[quote](#) [ignore](#)

Doeper has one in their keyboard controller (or had) that's exactly for a Fatar AT strip, cant find any solid info or schematics

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FactoryDefault
Common Wiggle



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

[Posted: Fri Apr 12, 2019 5:17 pm](#) [Post subject:](#)

[quote](#) [ignore](#)

grantb5 wrote:

It's aftertouch. Velocity would be handled by the second contacts on the keybed, but the original Pro One has no wire routing for those.

Gotcha. So the pro one just sees the first wire. A velocity circuit measures the delay between the two wires.

grantb5 wrote:

There are Aftertouch amplifiers

I'm speculating but that circuit probably measures a resistance and creates a voltage from it.

grantb5 wrote:

Also, I'm reminded of a guy that went his own way on this... <https://www.matrixsynth.com/2012/03/monophonic-after-touch-key-pressure.html>

Unfortunately the eBay auction isn't online anymore so we can't see any more detail. He's saying you can just swap out the mod wheel pot for the strip, so the resistance must be in the same order of magnitude. Was thinking along the same lines for this

project but making it switchable. Have them both active would be cooler though.

Man. The sound quality in that video...



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Sparky

Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

Posted: Fri Apr 12, 2019 5:34 pm Post subject:

[quote](#) [edit](#) [ignore](#)

"Sparky the fuse blower" here....

I'm in California too. My newgroove keybed seems to have a new event in the tracking as of today. Looks like mine left The Milan Malpensa airport sort in Italy on March 29 and *again* today !?! Perhaps it was a long lunch?!

I have the USPS "informed delivery" on so I can see when an inbound package is coming to my address. Got the tracking there, and then looked here: <https://www.poste.it>.

There is more detail on the Italian side than USPS show on their site.

Also Alessandro at newgroove.it confirmed the tracking # for me. Its like this:

EB0252.....IT

Hopefully that just means they all got through today.



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grantb5

Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Fri Apr 12, 2019 5:55 pm Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

Doeper has one in their keyboard controller (or had) that's exactly for a Fatar AT strip, cant find any solid info or schematics

Best I could find so far. Not sure this is what you mean or not.

<http://www.doeper.de/MKE.htm>

Connecting an After Touch sensor to ST6

ST6 can be used also to connect an after touch sensor. After touch sensors usually function as variable resistors. The resistance decreases if pressure applied to the sensor.

To connect an after touch sensor the pins 2 and 3 of ST6 are used. Jumper ST8 has to be installed in the lower position (GND sign). ST6 has to be programmed correspondingly (i.e. assigning after touch = "At" to ST6).

If the after touch sensor of a FATAR keybed has to be connected please follow the sketch below. FATAR uses normally a 4 pin female connector. But only pin 1 and 4 are used ! The two inner pins are NC.

.:add diagram here:.

MKE

ST6

NC

(GND)

after touch connector of the Fatar keyboard

+5V

ST8

Jumper

User's guide V2 page 11 MKE

Technical notes:

The sensors forms a voltage divider with the internal 10k pull down resistor which is actived by the jumper ST8. Consequently the measured voltage is ~ 0V if no pressure is applied and increases as more pressure applied to the sensor. For some keyboards the 10k pull down resistor (R12) has to be changed for the best result (down to 100 Ohm for some types). The easiest solution is to solder a second resistor in parallel to R12 until the best result is obtained by trial and error. The after touch sensors of the Fatar keyboards are not very sensitive and it might be a problem to dose the Midi after touch as desired. But this is not a problem

of the MKE but of the after touch sensors.

Last edited by grantb5 on Fri Apr 12, 2019 6:03 pm; edited 3 times in total

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FactoryDefault

Common Wiggle



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

Posted: Fri Apr 12, 2019 5:59 pm Post subject:

[quote](#) [ignore](#)

Sparky wrote:

"Sparky the fuse blower" here....

LOL. You have a reputation now.

Sparky wrote:

"informed delivery"

I have that too but I guess mine's not as informed as yours...I had to get my tracking number the old fashioned way.

Sparky wrote:

<https://www.poste.it.>

Great call! According to that site my package also left somewhere for the second time yesterday.

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Altitude909

Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Posted: Fri Apr 12, 2019 6:05 pm Post subject:

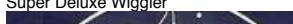
[quote](#) [ignore](#)

grantb5 wrote:

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Yeah, that's it.. Trying not to reinvent the wheel and find something to copy, a circuit to take the aftertouch strip and do whatever needs to be done to spit out 0-10V is all I would like to see..

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
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Altitude909

Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Post subject:](#)

R12 is listed twice in the build doc (100K)

ooh you sleuth! That's why there's an extra 100k that jbdiver found. I'll decrease the amount of 100ks to 35 in the cart and fix that in the instructions.

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Post subject:](#)

OK, revision 4 of the build instructions is live with the power switch wiring diagram, as well as fixing the R12 double callout (thanks Altitude909!). Also the mouser cart is updated to include 1 less 100k resistor.

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

[Post subject:](#)

I've got the PSU all wired up and would like to test. The build instructions on page 57 say this about installing the fuse: "250mA for 120V supply and 125mA for 240V supply".

The mouser order came with a 125mA fuse, part 30-3SB125-R. I'm guessing this is incorrect for US folks?

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devinw1
Veteran Wiggler

[Post subject:](#)



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Ah shit! Yeah you want a 1/4 A for 115v. I really should put both in the damn cart they are so cheap

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

□ Posted: Fri Apr 12, 2019 8:05 pm Post subject:

Home Depot often has those fuses in packs btw!

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

Altitude909 wrote:

Yeah, that's it.. Trying not to reinvent the wheel and find something to copy, a circuit to take the aftertouch strip and do whatever needs to be done to spit out 0-10V is all I would like to see..

Search "appendage ribbon controller", it has an excellent buil guide for ribbon/fsr.

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FactoryDefault
Common Wiggler



Sparky wrote:

"Sparky the fuse blower" here....

Full disclosure: I just blew a fuse too! 😅
(accidentally shorted +15v to ground while testing dc output voltages)

In other words, I verified that the vendor-supplied over-current contingency plan is fully operational!



Sparky - is your power supply now working ok?

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Posts: 158
Location: California, USA

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(accidentally shorted +15v to ground while testing dc output voltages)



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Sparky - is your power supply now working ok?

That could be why my first one blew as I did the same thing I think, but the second time I was careful.

Just got home, I may get to test tomorrow before I leave again. I might bypass the switches...but the faston connectors are so tight I don't know if I can get them off! My power switch has a wobbly terminal you see...so i might try to isolate that.

So I'm still curious if any one else got the PSU going?

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589

Good trick to probing those Molex connectors is to take an extra loose pin or one with a bit of wire on it and use clip meter probes. That way you don't risk shorting while trying to touch the pins in the receptical. Or carefully try and touch off on the pins of the voltage regulators with regular probes.



Trying to probe pins inside the Molex recepticals is a bit like playing "operation" 😊

Location: Portland, OR

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grantb5

Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Altitude909 wrote:

Yeah, that's it.. Trying not to reinvent the wheel and find something to copy, a circuit to take the aftertouch strip and do whatever needs to be done to spit out 0-10V is all I would like to see..

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grantb5

Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Looks at the DX7S schematics. Problem is, I don't know if the AT strip is similar enough.

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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I just talked to someone a bit more qualified and took some measurements and that AT strip is just a resistor. couple resistors and a voltage follower should all that is needed to get a usable CV out of it

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devinw1

Veteran Wiggler

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589

Location: Portland, OR

grantb5 wrote:

Pondering ... not sure why the neg regulators are treated differently than the pos ones since the heatsink isn't connected to anything is it? I think the isolation of the tab is really only and issue if the (grounded) chassis is the heatsink?

Keep in mind there are 106 miles to Chicago, we have a full tank of gas, half a pack of cigarettes, it's dark and we're wearing sunglasses.

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devinw1

Veteran Wiggler

Altitude909 wrote:



I just talked to someone a bit more qualified and took some measurements and that AT strip is just a resistor. couple resistors and a voltage follower should all that is needed to get a usable CV out of it

Patch that into the filter CV input with a switch and you got a cool setup me thinks?

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Posted: Sat Apr 13, 2019 12:31 pm Post subject:

[quote](#) [ignore](#)

devinw1 wrote:

Because the heat sinks are shared 2 per regulator. I had already designed the thing when I found out negative Regs have the negative supply hot to the case (I had naively thought case was Ground like a positive one). On the very very first Proto I got to work, I saved the heat sinks into 4 separate ones and it worked fine. Then somebody hipped me to the mica spacers and all was well.

I also guess I could have rearranged the VRs to have the negatives on one sink but then the whole sink would be hot to -18V which scares me

Oh OK thanks, that was my brain fart. I haven't put the regs on yet ... moved on to the other boards to do passives ... and assumed the negs were together. Move along, nothing to see here.

My fuses are 250mA for the record. From the Mouser BOM. I can't recall for sure, but I think both were on there and I had to delete one.

So far everything is going smooth. I'm just getting psyched to do the switch and pot modifications.

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Posted: Sun Apr 14, 2019 10:07 am Post subject:

[quote](#) [ignore](#)

And my test fitting. Have to say, the knobs worked out perfect..

One thing that needs to happen is dust covers for the switches. I've been using laser cut cardstock. They have felt also but I have not tried it, the spec has it pretty thick (2mm) so I never bothered with it (I guess its worth trying though)



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan



[Back to top](#) **grantb5**
Common Wiggler

D Posted: Sun Apr 14, 2019 10:56 am Post subject:

 Joined: 12 Oct 2010
Last Visit: 20 Apr 2019**Altitude909 wrote:**

And my test fitting. Have to say, the knobs worked out perfect..

One thing that needs to happen is dust covers for the switches.

[Back to top](#) **Altitude909**
Super Deluxe Wiggler

D Posted: Sun Apr 14, 2019 11:17 am Post subject:

 **grantb5 wrote:****Altitude909 wrote:**

And my test fitting. Have to say, the knobs worked out perfect..

One thing that needs to happen is dust covers for the switches.

Looks great. Did you trim the octave switches? I think I read 2mm somewhere? I don't think the original Pro One had felt but it might be ok if it was thin enough as you say.

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019[Back to top](#)

It doesn't matter how much you cut, i left an eyeball 1/4". The knob stops on where the d ends on the shaft like it supposed to so as long as you dont go too long, its fine.

Ill get the felt cut, there is about that much room between the switch frame and panel so it should be fine

 jbdiver
Wiggling with Experience

D Posted: Sun Apr 14, 2019 11:19 am Post subject:

 **Altitude909 wrote:**

Mouser Bom is short 1 820K resistor

short 1x 1n, extra 10n

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019[Back to top](#) **Altitude909**
Super Deluxe Wiggler

D Posted: Sun Apr 14, 2019 12:48 pm Post subject:

^

Something isn't adding up for 820k, it was 4 on the bag, there are 5 in the device. Two on Board A, 1 on each VCO plus one on R3 for VCO 2. BOM says 3 total, which isn't right either.



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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jbdiver
Wiggling with Experience



□ Posted: Sun Apr 14, 2019 12:58 pm Post subject:

[quote](#) [ignore](#)

My mouser cart had 5 x 820k. Maybe you were using an older version of the cart/bom when you ordered?

□ Posted: Sun Apr 14, 2019 1:10 pm Post subject:

[quote](#) [ignore](#)

jbdiver wrote:

My mouser cart had 5 x 820k. Maybe you were using an older version of the cart/bom when you ordered?

Yeah, highly likely. BOM should be corrected though (the git one)

□ Posted: Sun Apr 14, 2019 1:47 pm Post subject:

[quote](#) [ignore](#)

On build guide page 50, what order should the led pigtail pins be inserted into the housing connector?

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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jbdiver
Wiggling with Experience

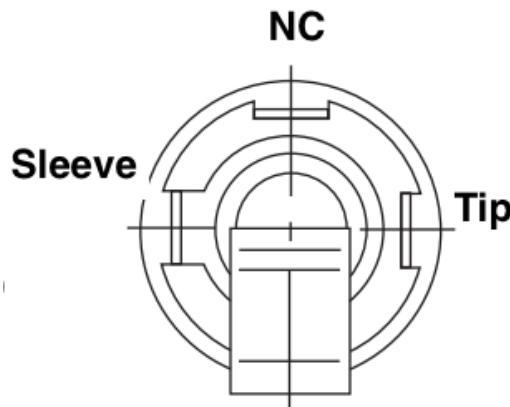


Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

On build guide 52, can someone please confirm the jack pin layout. I think it's like this (view from back):



Also, on the molex connectors is pin #1 designated by the arrow?

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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□ Posted: Sun Apr 14, 2019 6:49 pm Post subject:

[quote](#) [ignore](#)

Do you mean the 1/8"CV jacks or the 1/4" audio jacks?

And, yes the arrow is always pin 1 for all the Molex connectors!

Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

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devinw1
Veteran Wiggler



□ Posted: Sun Apr 14, 2019 6:51 pm Post subject:

[quote](#) [ignore](#)

Altitude, looking sweet sauce!

I hadn't thought of switch protectors, but I think that is a great idea. You'd think for what they charge for those, they'd have at least a simple card stock one in them.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

[Posted: Sun Apr 14, 2019 6:52 pm](#) Post subject:

jbdiver wrote:

On build guide page 50, what order should the led pigtail pins be inserted into the housing connector?

The anode (+) should be wired to pin 1 on all the LEDs.

[Posted: Sun Apr 14, 2019 7:13 pm](#) Post subject:

devinw1 wrote:

Do you mean the 1/8"CV jacks or the 1/4" audio jacks?

I'm looking at the 1/8" CV jacks.

[Posted: Sun Apr 14, 2019 11:14 pm](#) Post subject:

jbdiver wrote:

devinw1 wrote:

Do you mean the 1/8"CV jacks or the 1/4" audio jacks?

I'm looking at the 1/8" CV jacks.

I believe you are correct. I don't have any actual parts in front of me but the datasheet looks like you are right. If you look at the "layers" that make up the connector, it's pretty easy to see which tang is connected to each piece of the connector though, since it's not an enclosed connector. 😊

[Posted: Sun Apr 14, 2019 11:23 pm](#) Post subject:



Altitude909 wrote:

Something isn't adding up for 820k, it was 4 on the bag, there are 5 in the device. Two on Board A, 1 on each VCO plus one on R3 for VCO 2. BOM says 3 total, which isn't right either.

Fixed it in the BOM on github. Thanks! 😊

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[profile](#) [pm](#) [email](#)

grantbs
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

[quote](#) [ignore](#)

devinw1 wrote:

I believe you are correct. I don't have any actual parts in front of me but the datasheet looks like you are right. If you look at the "layers" that make up the connector, it's pretty easy to see which tang is connected to each piece of the connector though, since it's not an enclosed connector. 😊

Yeah, failing visibility, you could also "buzz it out" using the continuity checker of a meter. A piece of paper could be used to separate the normally shorted pins (on jacks that have them). Or even put a plug in...

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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[quote](#) [ignore](#)

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

jbdiver wrote:

Grant, that's exactly how I ended up creating the connection diagram. I couldn't wrap my head around the manufacturer's datasheet so I just started testing with a cable.

I should be able to finish all the I/O wiring in the next couple days, but my keybed is not here yet -- probably on a boat somewhere. Is it possible to test the synth without the keybed connected? Can I just connect an external midi or cv device? I think I recall that some of the tuning operations required the keybed.

The datasheet is pretty crappy LOL. It's not you.

And yeah, you do need the keyboard to calibrate the thing. First step being the DAC calibration which requires hitting keys to get the right KB CV levels. Then you need to hit keys when tuning it. **HOWEVER**, if you just want to make noise and test, you can always just switch the KB switch off and put it on "Drone" and it should make sound, albeit only a low pitch. It will also respond to CV and Gate from an external source, but you won't want to calibrate it until you have the actual keybed.

[Back to top](#) [profile](#) [pm](#) [email](#)**Sparky**
Common WigglerJoined: 02 Sep 2014
Last Visit: 20 Apr 2019Posts: 158
Location: California, USA[Back to top](#) Posted: Mon Apr 15, 2019 5:30 pm Post subject:

...and I think Grant mentioned further back in the thread you can test drone mode without the TurboCPU in place either. My keybed is on the same boat 😊 so that's what I am planning on doing.

[Back to top](#) [profile](#) [pm](#) [email](#)**devinw1**
Veteran WigglerJoined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR Posted: Mon Apr 15, 2019 6:48 pm Post subject:

Italy's a long ways away! 🇮🇹

[Back to top](#) [profile](#) [pm](#) [email](#)**devinw1**
Veteran WigglerJoined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR Posted: Mon Apr 15, 2019 6:53 pm Post subject:

And yeah drone just sets gate and trigger to 5V so yeah that will definitely work without a CPU in place.

[Back to top](#) [profile](#) [pm](#) [email](#)**grantb5**
Common Wiggler Posted: Mon Apr 15, 2019 8:32 pm Post subject:

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Sparky wrote:

...and I think Grant mentioned further back in the thread you can test drone mode without the TurboCPU in place either. My keybed is on the same boat 😊 so that's what I am planning on doing.

I don't think I said *without* a CPU but maybe. I'd have to look. If the drone routes around the CPU then it will work in Drone.

If it is working and *then* you do put in the CPU, then drone, repeat, use an external keyboard, download the software if you have a Windows PC and then you can load Pink Floyd's On the Run and that should keep you busy. 😊 "If you give em a short, sharp shock..."

Also of course external CV and Gate which essentially disconnects the CPU anyway.

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019

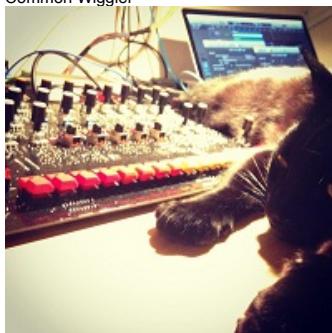


Posts: 267
Location: Minneapolis, USA

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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jbdiver
Wiggling with Experience

FactoryDefault wrote:



NC means normally closed, as in a normally closed switch.

Yeah, I understand that NC means normally closed for the CV jacks, but I'm referring to the "N/C" designation for the midi jacks molex pin number.

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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khakifridge
Veteran Wiggler



Joined: 11 Jun 2014
Last Visit: 20 Apr 2019



Posts: 609
Location: UK

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Posted: Mon Apr 15, 2019 10:54 pm](#) Post subject:

jbdiver wrote:

FactoryDefault wrote:

NC means normally closed, as in a normally closed switch.

Yeah, I understand that NC means normally closed for the CV jacks, but I'm referring to the "N/C" designation for the midi jacks molex pin number.

Aah gotcha. In the case of a ground or shield, one end can be n/c or "floating" to prevent ground loops. Not sure if that's the intent here.

Edit: I think this is also part of the midi spec.

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[Posted: Tue Apr 16, 2019 2:15 am](#) Post subject:

jbdiver wrote:

... I'm referring to the "N/C" designation for the midi jacks molex pin number.

n/c = not connected

(or no connection)

[Posted: Tue Apr 16, 2019 10:26 am](#) Post subject:

Kakifridge is correct!

[Back to top](#)[profile](#) [pm](#) [email](#)**devinw1**
Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Back to top](#)[profile](#) [pm](#) [email](#)[quote](#) [ignore](#)**FactoryDefault** wrote:

NC means normally closed, as in a normally closed switch.
In the cv and gate and audio input sockets, the normally closed switch between the tip and nc contacts is broken when you insert a jack. I learned yesterday that repeat mode does not work unless the gate input jack is installed.

Yes, a few very important things won't work if you don't have the Normally Closed jacks installed... The synth doesn't get CV or Gate from the keyboard circuitry unless those are present OR you run a little wire jumper from pin 1 to 3 on the molex connectors with NC jack inputs for diagnosis.

I think I mentioned that in the build docs, but maybe I forgot. That one stumped me for a few minutes when I built my first prototype. 😊

Altitude909
Super Deluxe Wiggler

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

Posts: 2969
Location: Meesheegan[Back to top](#)[profile](#) [pm](#) [email](#)[quote](#) [ignore](#)**Troubleshooter**
Wiggling with Experience

Joined: 01 Oct 2015
Last Visit: 19 Apr 2019

Posts: 311
Location: Belgium[Back to top](#)[profile](#) [pm](#) [email](#)[quote](#) [ignore](#)**devinw1**
Veteran Wiggler[profile](#) [pm](#) [email](#)[quote](#) [ignore](#)**Altitude909** wrote:

Can you confirm the specs of the fuse? The one that I ordered (which is still in the PSU BOM) is too big..

Shit! I need to fix that BOM. The Mouser cart should be corrected.



You need a 5mm round fuse, Slo-Blo. 1/4 Amp for 115V, 1/8 Amp for 230V.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler

Posted: Tue Apr 16, 2019 11:51 am Post subject:

[quote](#) [ignore](#)



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

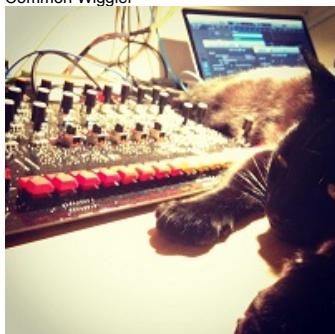
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FactoryDefault
Common Wiggler

Posted: Tue Apr 16, 2019 11:56 am Post subject:

[quote](#) [ignore](#)



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

FWIW, The BOM used to be correct - I have the right sized fuses.

26 1 530-5ST250-R

5ST 250-R

Bel Cartridge Fuses

27 1 530-5ST125-R

5ST 125-R

Bel Cartridge Fuses

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devinw1
Veteran Wiggler

Posted: Tue Apr 16, 2019 11:56 am Post subject:

[quote](#) [ignore](#)

Github PSU BOM (rev 02) has been corrected to have the right fuse P/N and options for both 115V and 230V operation.





Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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tjs
Learning to Wiggle

Posted: Tue Apr 16, 2019 12:55 pm Post subject:

[quote](#) [ignore](#)

There's a typo in the combo BOM. It says 2x 0,039pF MLCC where it should be 0,039uF.



Joined: 30 May 2009
Last Visit: 19 Apr 2019



Posts: 49
Location: Berlin

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devinw1
Veteran Wigglar

Posted: Tue Apr 16, 2019 1:30 pm Post subject:

[quote](#) [ignore](#)

tjs wrote:

There's a typo in the combo BOM. It says 2x 0,039pF MLCC where it should be 0,039uF.

Corrected! Thanks!



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wigglar

Posted: Tue Apr 16, 2019 3:42 pm Post subject:

[quote](#) [ignore](#)

FactoryDefault wrote:

NC means normally closed, as in a normally closed switch.
In the cv and gate and audio input sockets, the normally closed switch between the tip and nc contacts is broken when you insert a jack. I learned yesterday that repeat mode does not work unless the gate input jack is installed.



Sounds like you are getting close to making some sounds?? 

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

 Posted: Tue Apr 16, 2019 5:23 pm Post subject:

devinw1 wrote:

FactoryDefault wrote:

NC means normally closed, as in a normally closed switch.
In the cv and gate and audio input sockets, the normally closed switch between the tip and nc contacts is broken when you insert a jack. I learned yesterday that repeat mode does not work unless the gate input jack is installed.

Sounds like you are getting close to making some sounds?? 

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Altitude909

Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

 Posted: Tue Apr 16, 2019 5:40 pm Post subject:

so what's the deal with the twisted wires on the power switch? They are in the pics but I dont see any mention beyond that

[Back to top](#)[profile](#) [pm](#) [email](#)**FactoryDefault**

Common Wiggler

Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

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Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR[Back to top](#)[profile](#) [pm](#) [email](#)**devinw1**

Veteran Wiggler

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR[profile](#) [pm](#) [email](#)[quote](#) [ignore](#)

D Posted: Tue Apr 16, 2019 5:48 pm Post subject:

Altitude909 wrote:

so what's the deal with the twisted wires on the power switch? They are in the pics but I dont see any mention beyond that

You have to run a black wire from the supply to the board and it also splits off to the switch (for the light). All I had was some 22G so I twisted 2 together for that wire (honestly it's probably an absolutely piddly current since it's just a dim little bulb). You don't need 14G going to that switch light, but in the end you have to have 2 wires go into 1 spade connector.

D Posted: Tue Apr 16, 2019 5:58 pm Post subject:

Altitude909 wrote:

so what's the deal with the twisted wires on the power switch? They are in the pics but I dont see any mention beyond that

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D Posted: Tue Apr 16, 2019 6:05 pm Post subject:

FactoryDefault wrote:**devinw1 wrote:****FactoryDefault wrote:**

NC means normally closed, as in a normally closed switch.
In the cv and gate and audio input sockets, the normally closed switch between the tip and nc contacts is broken when you insert a jack. I learned yesterday that repeat mode does not work unless the gate input jack is installed.

Sounds like you are getting close to making some sounds??



Yay! I spent two hours last night listening to a partially assembled synth on headphones. Sounds amazing. The modulation on this thing is a lot of fun.

I have a few issues though:

1. I wish that fatar keyboard would show up.

2. I may have blown up my turbo cpu by plugging it in backwards. I got instructions from Grant on how to test its level of deadness before I put it back in.

3. My gate is acting strange. Repeat mode works fine. I have 5 volts at the gate all the time regardless of the position of the drone switch.

2 and 3 may be related. I think the 4049 is ok based on tests I did last night but I grabbed a spare from work

anyway and I'm going to try replacing that tonight. Also started desoldering the drone switch before I left for work this morning to check for shorts.

Nice!!

Interesting about the gate. You are in the right neighborhood looking at the 4049. In fact, I think other than something being shorted on the board, that should be the only thing that would affect the gate as you have described.

That sucks about the Turbo. I will really have to add something in the build instructions to point out in bold that you can't put it in backwards, if it really does zap the thing. Sorry! I hadn't even thought of that, and I've certainly put chips in backwards. I can actually attest that the Alfa Envelope chips CAN be put in backwards without any damage.. lol. 🍻 😊

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FactoryDefault
Common Wiggler



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Posts: 90

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Posted: Tue Apr 16, 2019 6:18 pm Post subject:

devinw1 wrote:

I will really have to add something in the build instructions to point out in bold that you can't put it in backwards

The thing about idiot-proofing things is they keep making better idiots!

Don't know what I was thinking.



Grant says the turbo cpu might be ok. He's seen them survive this. It didn't smell good though.

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Posted: Tue Apr 16, 2019 7:12 pm Post subject:

Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

Posts: 2969
Location: Meesheegan

devinw1 wrote:

Altitude909 wrote:

so what's the deal with the twisted wires on the power switch? They are in the pics but I dont see any mention beyond that

You have to run a black wire from the supply to the board and it also splits off to the switch (for the light). All I had was some 22G so I twisted 2 together for that wire (honestly it's probably an absolutely piddly current since it's just a dim little bulb). You don't need 14G going to that switch light, but in the end you have to have 2 wires go into 1 spade connector.

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jbdiver

Posted: Tue Apr 16, 2019 8:39 pm Post subject:

Wiggling with Experience



Joined: 31 Aug 2010

Last Visit: 19 Apr 2019



Posts: 267

Location: Minneapolis, USA

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Page 54 of the build guide lists the MIDI IN connector 3 times. I'm guessing based on the cable lengths this should be MIDI IN, MIDI OUT, and MIDI THRU from top to bottom.

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[quote](#) [ignore](#)

devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

Altitude909 wrote:

devinw1 wrote:

Altitude909 wrote:

so what's the deal with the twisted wires on the power switch? They are in the pics but I dont see any mention beyond that

You have to run a black wire from the supply to the board and it also splits off to the switch (for the light). All I had was some 22G so I twisted 2 together for that wire (honestly it's probably an absolutely piddly current since it's just a dim little bulb). You don't need 14G going to that switch light, but in the end you have to have 2 wires go into 1 spade connector.

Got it. What threw me was the next page doesnt show it. All good on power up so just some more wiring and I'll be up and running

Haha yeah I had to splice that section together a little because I f**ked up wiring one thing when it was too late to get good pictures.

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[quote](#) [ignore](#)

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devinw1

Veteran Wiggler



Joined: 07 Aug 2018

Last Visit: 20 Apr 2019

Posts: 589

Location: Portland, OR

jbdiver wrote:

Page 54 of the build guide lists the MIDI IN connector 3 times. I'm guessing based on the cable lengths this should be MIDI IN, MIDI OUT, and MIDI THRU from top to bottom.

Doh!!! Fixed and new revision uploaded! I also added the "idiot warning" for the TurboCPU for good measure.

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[quote](#) [ignore](#)

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Jannel

Wiggling with Experience

[Post subject](#)

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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#12 arrived. Outstanding work Devin!

grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Jannel wrote:

#12 arrived. Outstanding work Devin!

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Do we have numbers? I never even noticed...

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[quote](#) [ignore](#)

grantb5 wrote:

Jannel wrote:

#12 arrived. Outstanding work Devin!

Do we have numbers? I never even noticed...

Haha yep! You are 8!

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Back to top](#)

[quote](#) [ignore](#)

Jannel wrote:

#12 arrived. Outstanding work Devin!

Awesome! Glad it's safe and in your hands!

jbdiver
Wiggling with Experience



[quote](#) [ignore](#)

On page 55 in the build guide, the "AUDIO IN" connector is listed twice. Not such a big deal because it looks like both connectors are wired up the same way.

Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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Troubleshooter
Wiggling with Experience



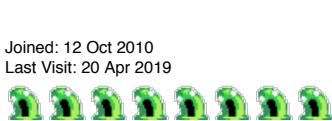
Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium

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grantb5
Common Wiggler



Joined: 12 Oct 2010
Last Visit: 20 Apr 2019

Posts: 69

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devinw1
Veteran Wiggler

□ Posted: Wed Apr 17, 2019 10:40 pm Post subject:

jbdiver wrote:

On page 55 in the build guide, the "AUDIO IN" connector is listed twice. Not such a big deal because it looks like both connectors are wired up the same way.

Fixed!

And yes you are right they are wired the same. They actually don't need to be since the audio OUT doesn't need the NC Tip Switch wired, but I just made them the same for simplicity's sake. 😊

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□ Posted: Thu Apr 18, 2019 11:14 am Post subject:

Allready a question,

Are the plastic screws for the regulators provided in the kit? If yes, what bag?

□ Posted: Thu Apr 18, 2019 11:57 am Post subject:

Troubleshooter wrote:

Allready a question,

Are the plastic screws for the regulators provided in the kit? If yes, what bag?

I think the answer was "no", and Devin posted a link to an Amazon kit with a bunch in it. I tried to search for that message but didn't see it. Up ^^^^ there some pages back. 😊

Last edited by grantb5 on Thu Apr 18, 2019 12:19 pm; edited 1 time in total

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devinw1
Veteran Wiggler

□ Posted: Thu Apr 18, 2019 12:13 pm Post subject:

Yeah, correct, I had intended to provide those and forgot and do appologize. I think it's probably the most economical for people to procure those on their own since international shipping for a 25 cent screw would be slow and expensive.

If anyone has trouble finding them, let me know and we can work something out.

As I mentioned before, I think the cheapest way is to buy a little kit of them from Amazon and just keep the rest for extra projects. The one I posted earlier in the thread was like 6 or 7 USD.



Again, sorry for omitting those!

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

□ Posted: Thu Apr 18, 2019 12:25 pm Post subject:

An alternative, if you are careful, is to use a metal screw that remains insulated from the heatsink and TO220 tab via a bushing that has an insert part. Sorry, I don't know what it's called. Here is a photo but google for TO220 insulator bushing and you should see some solutions.

https://www.rfparts.com/media/catalog/product/cache/1/small_image/252x/9df78eab33525d08d6e5fb8d27136e95/g/a/galxxstrscr.jpg

<https://www.rfparts.com/rftransistors/insulator-kit-to220-transistors.html>

https://ae01.alicdn.com/kf/HTB1s9mRJFXXXXX1XFXXq6xFXXXG/Top-quality-T-O-220-PPS-Insulating-gasket-insulation-particles-screws-protective-cover-of-plastic-booster-transistor.jpg_640x640.jpg

I'll probably do something like this myself. Depends also on the diameter of the hole in the heatsink but I would guess that it's big enough since this is a pretty common practice. Just make sure you know what you are doing. 😊

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

□ Posted: Thu Apr 18, 2019 1:35 pm Post subject:

You need to be very thorough with this approach. Here is a decent video but the guy gets called out for not showing the grease part. I think he should have showed buzzing* it out with a meter to double-check that the insulation was good. You can add a lot more parts too, like a bushing on both sides if the holes will allow it.

<https://www.youtube.com/watch?v=wj9jrvJhR5Q>

* AKA continuity test.

Apparently also called top hat washers:
<http://www.mecint.co.uk/item/118>

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devinw1
 Veteran Wiggler

D Posted: Thu Apr 18, 2019 3:15 pm Post subject:


 Joined: 07 Aug 2018
 Last Visit: 20 Apr 2019
 Posts: 589
 Location: Portland, OR
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Troubleshooter
 Wiggle with Experience

 Joined: 01 Oct 2015
 Last Visit: 19 Apr 2019

 Posts: 311
 Location: Belgium

D Posted: Thu Apr 18, 2019 5:58 pm Post subject:

devinw1 wrote:

Yeah, correct, I had intended to provide those and forgot and do apologize. I think it's probably the most economical for people to procure those on their own since international shipping for a 25 cent screw would be slow and expensive.

If anyone has trouble finding them, let me know and we can work something out.

As I mentioned before, I think the cheapest way is to buy a little kit of them from Amazon and just keep the rest for extra projects. The one I posted earlier in the thread was like 6 or 7 USD.

Again, sorry for omitting those!

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Sparky
 Common Wiggler

 Joined: 02 Sep 2014
 Last Visit: 20 Apr 2019

 Posts: 158
 Location: California, USA

D Posted: Thu Apr 18, 2019 6:14 pm Post subject:

I appear to have a working PSU now. My fuse blowing issue is solved. Not quite sure why, but here's what I did:

- new fuse (from updated mouser BOM). I had used 3 from digikey - slightly different
- Took the PSU PCB out and cleaned it and re-flowed put back
- Bought a bunch of new regulators just in case (didn't use them)
- Put the nylon heat sink screws in
- Scratched my head.

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In other news, my key bed is still stuck on the gondola with no new tracking signs.

FactoryDefault
 Common Wiggler

D Posted: Thu Apr 18, 2019 6:43 pm Post subject:

Sparky wrote:

In other news, my key bed is still stuck on the gondola with no new tracking signs.

Lol. I check my tracking number about 10 times a day.



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

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jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



jbdiver wrote:

I've completed everything in the build except for the keybed install. PSU testing looks good. I might power up the boards tomorrow and see if it makes noise. My understanding is that the Italian postal tracking is kinda worthless. The package will always look like it's stuck in Milan and basically it will just show up on our doorstep someday.

Damnit!

Well, if you have another synth with CV and Gate laying around, you can patch both those in and screw around... Even without that you can let it drone. Lol

devinw1 wrote:

I appear to have a working PSU now. My fuse blowing issue is solved. Not quite sure why, but here's what I did:

- new fuse (from updated mouser BOM), I had used 3 from digikey - slightly different
- Took the PSU PCB out and cleaned it and re-flowed put back
- Bought a bunch of new regulators just in case (didn't use them)
- Put the nylon heat sink screws in
- Scratched my head.

In other news, my key bed is still stuck on the gondola with no new tracking signs.

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Sometimes you just have to let the gremlins out! 😬 😬

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Posted: Thu Apr 18, 2019 11:33 pm Post subject:

[quote](#) [ignore](#)

Troubleshooter wrote:

devinw1 wrote:

Yeah, correct, I had intended to provide those and forgot and do appologize. I think it's probably the most economical for people to procure those on their own since international shipping for a 25 cent screw would be slow and expensive.

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As I mentioned before, I think the cheapest way is to buy a little kit of them from Amazon and just keep the rest for extra projects. The one I posted earlier in the thread was like 6 or 7 USD.

Again, sorry for omitting those!

No need for an apologize Devin, Tho hole in the regulator is 3.6mm and I do have a very precise CNC router to make the perfect teflon isolating adaptor for metal screws. Vingers crossed I don't underestimate the task. If all goes well I don't have to be careful with the tension as quoted in the manual.

I might go for white hard-PCV. 120°C melting temp. should do it.

Excellent! Yeah you can definitely make a shoulder spacer if you've got the equipment. Honestly you probably don't even need to go PTFE, but if you've got it, why not. Delrin or Torlon would do the trick for the temps this gets to I think.

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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Posted: Fri Apr 19, 2019 3:23 am Post subject:

I started building the power supply and found that there's no 1n400x diode from the positive regulator pin2 to ground (cathode of the diode), which is sometimes needed because at start up positive (78x5) reg "looses the battle to the neg reg 79x5". Sorry I have no better explanation for this, but have noticed it happening with other synth diy projects (crowbx (obx voice cards) etc). This can easily be added by not soldering that reg leg directly to the pcb, just bend up and add the diode. I'm not sure if this is needed for this project but it don't hurt to add.

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[quote](#) [ignore](#)

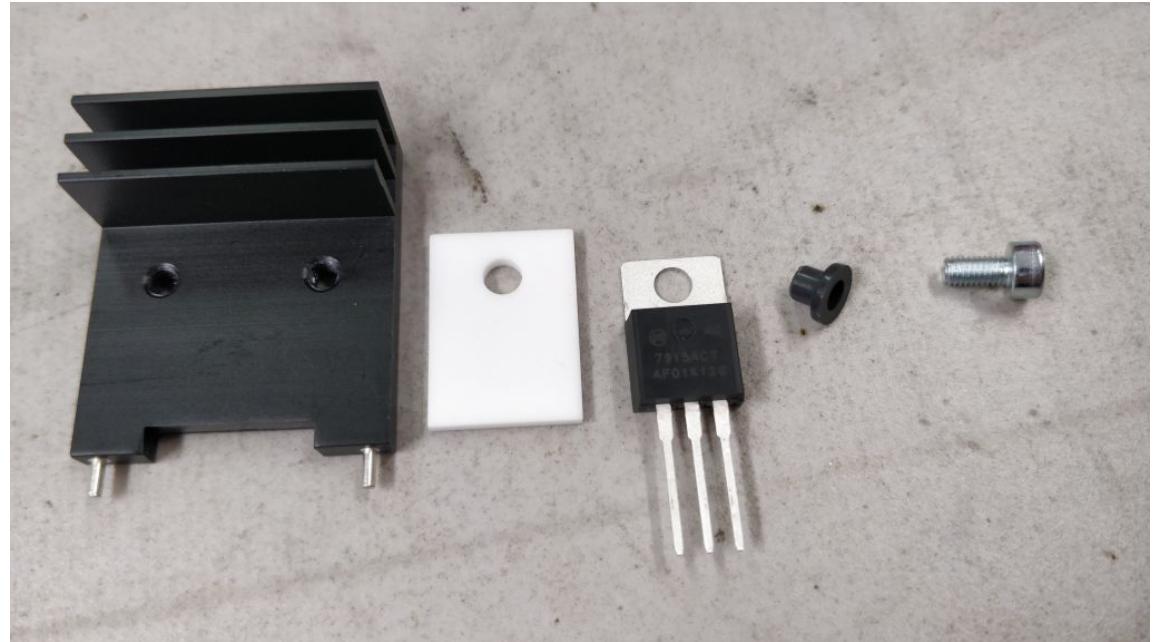
Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



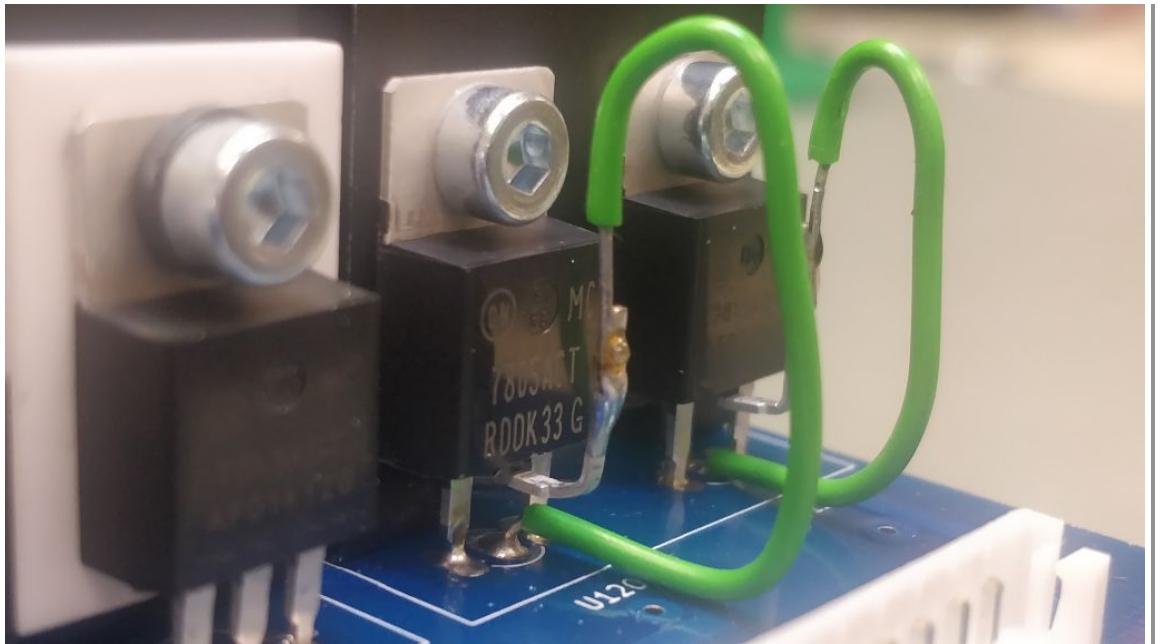
Posts: 257

Posted: Fri Apr 19, 2019 3:43 am Post subject:





For negative regs. And for positive regs I added a easy way to add the 1N400x diode if needed.



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Troubleshooter
Wiggling with Experience



Joined: 01 Oct 2015
Last Visit: 19 Apr 2019



Posts: 311
Location: Belgium



It turned out well, a little rough on the outer border but more than OK.[/img]

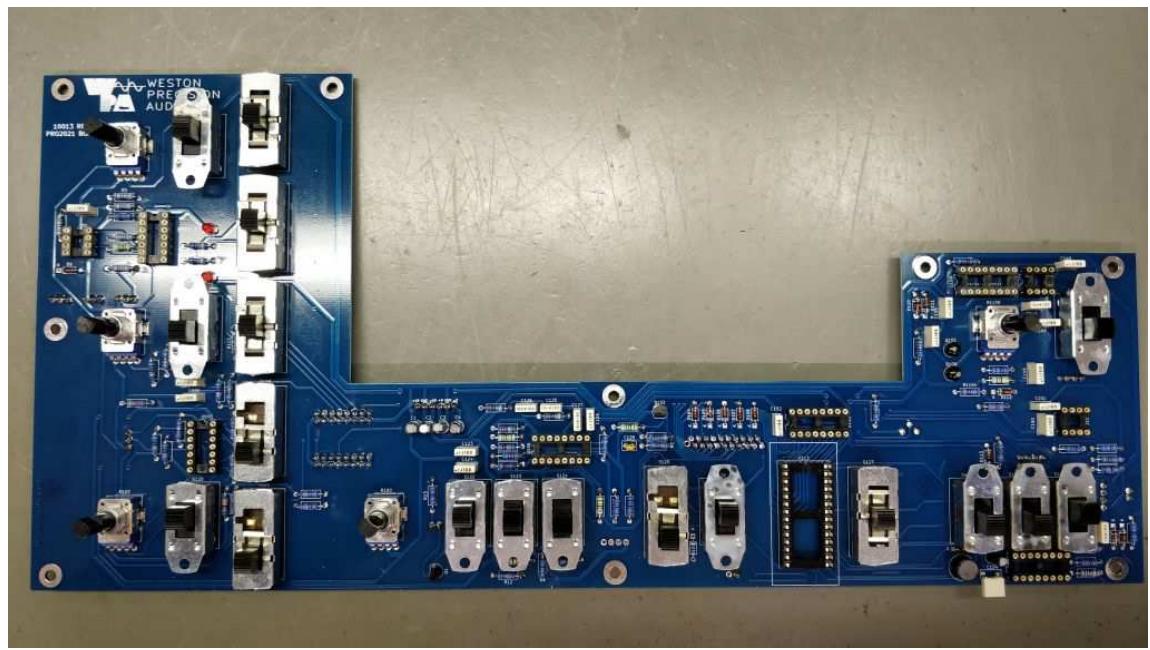
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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019

Posts: 257

Posted: Fri Apr 19, 2019 9:21 am Post subject:



Board A done!

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019

Posts: 158
Location: California, USA

Posted: Fri Apr 19, 2019 9:22 am Post subject:

Since I had to order some other parts from mouser, I got these nylon screws. They seem to work fine on the regulators:

534-29341

29341

Keystone Screws & Fasteners

US HTS:3926909990 ECCN:EAR99 COO:US

<http://www.mouser.com/ProductDetail/keystone-electronics/29341>

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devinw1
Veteran Wiggler



Posted: Fri Apr 19, 2019 10:32 am Post subject:

Sparky wrote:

Since I had to order some other parts from mouser, I got these nylon screws. They seem to work fine on the regulators:

534-29341

29341

Keystone Screws & Fasteners

US HTS:3926909990 ECCN:EAR99 COO:US

<http://www.mouser.com/ProductDetail/keystone-electronics/29341>

Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589

Location: Portland, OR

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Oh nice... I tried to drill down with the Mouser search, picking screws>nylon>M3 and got nothing! Dang.

Nice job. I will just throw 4 of those on the BOM since they are so cheap. Thanks!

devinw1
Veteran Wiggler

Posted: Fri Apr 19, 2019 10:37 am Post subject:



Jannel wrote:

I started building the power supply and found that there's no 1n400x diode from the positive regulator pin2 to ground (cathode of the diode), which is sometimes needed because at start up positive (78x5) reg "loses the battle to the neg reg 79x5". Sorry I have no better explanation for this, but have noticed it happening with other synth diy projects (crowbx (obx voice cards) etc). This can easily be added by not soldering that reg leg directly to the pcb, just bend up and add the diode. I'm not sure if this is needed for this project but it don't hurt to add.

Interesting! Would this still happen even in this case where the negative regs are fed off of the opposite side of the diode rectifier bridge?

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Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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I haven't had any issues so far with the power supply, but I could definitely add this to the next revision of the board.



Also, looking good with the build!!

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

Troubleshooter wrote:



It turned out well, a little rough on the outer border but more than OK.[/img]



Nicely done. That shall do just fine!

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019


Posts: 257

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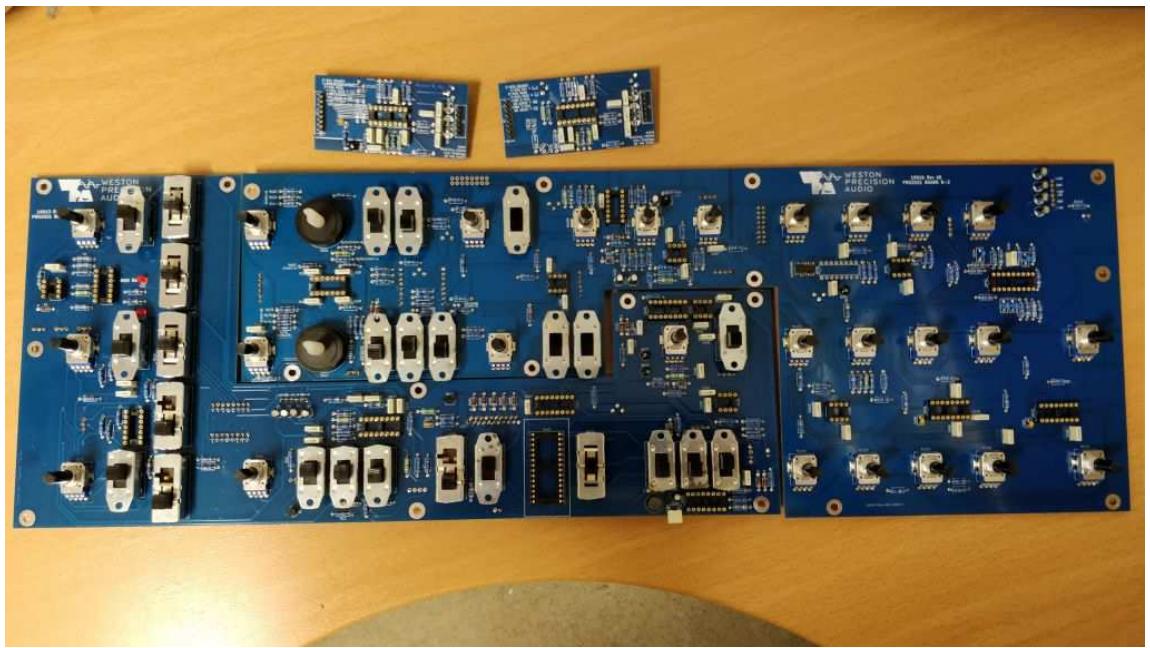
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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019


Posts: 257



All done, took about 10 hours. Assembly and hopefully some sounds!

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grantb5
Common Wiggler

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

Jannel wrote:

I started building the power supply and found that there's no 1n400x diode from the positive regulator pin2 to ground (cathode of the diode), which is sometimes needed because at start up positive (78x5) reg "loses the battle to the neg reg 79x5". Sorry I have no better explanation for this, but have noticed it happening with other synth diy projects (crowbx (obx voice cards) etc). This can easily be added by not soldering that reg leg directly to the pcb, just bend up and add the diode. I'm not sure if this is needed for this project but it don't hurt to add.

I'd be curious to see those schematics as that's a an interesting failure mode. A diode at the GND pin of a 7805 raises the +5v rail by the diode drop amount. The Pro One has no such diode and they've been turning on for a good 30-some years(?).

So I did a little bit of related research and it looks like the original Pro One used 78Mxx which is rated for only 0.5A and the heatsink is piddly at best. So considering that the regulator input voltage is 25v, I think one can safely assume that the Pro One doesn't draw very much current.

None of the PRO2021 scanners, er I mean synths, heatsinks are attached to anything ... at least until they are screwed into the tabs on the TO220s. So probably I'm not going to do anything different on the negative side than on the positive one. The side effect of this will mean the neg heatsink will be energized at -25v. The original Pro One sort of does this anyway, but with pads on the PCB. Did some due diligence on that and it doesn't seem to have and serious ramifications, more personal preference among those polled.

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Altitude909
Super Deluxe Wiggler



[quote](#) [ignore](#)

Ok, im done but have an issue that's hopefully a glaring oversight on my part somewhere: Keyboard doesnt track or produce CV. I can trigger externally, everything works but the CV out is pegged at 0 and nothing changes it. It does trigger so I assume that means i didnt mirror the cable somehow but no pitch changes

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post](#) Posted: Fri Apr 19, 2019 4:13 pm Post subject: [quote](#) [ignore](#)

Altitude909 wrote:

Ok, im done but have an issue that's hopefully a glaring oversight on my part somewhere: Keyboard doesnt track or produce CV. I can trigger externally, everything works but the CV out is pegged at 0 and nothing changes it. It does trigger so I assume that means i didnt mirror the cable somehow but no pitch changes

There should be a red plastic tab on the cable that prevents flipping it, but if it breaks off, you can put it on reverse. That happened on my first build actually. Check that.

The CV comes ultimately from the DAC, so I'd start by probing pin 16 of the DAC (U112, Board A) to see if you have a CV there or if you're losing it later in the Glide or something.

Last edited by devinw1 on Fri Apr 19, 2019 4:16 pm; edited 1 time in total

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devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

[Post](#) Posted: Fri Apr 19, 2019 4:14 pm Post subject: [quote](#) [ignore](#)

Jannel wrote:

All done, took about 10 hours. Assembly and hopefully some sounds!

Dude... you're fast! 😊

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

[Post](#) Posted: Fri Apr 19, 2019 5:50 pm Post subject: [quote](#) [ignore](#)



I couldn't stop once I started the assembly part. My god this is SO well thought all the way through! 😊 So much to learn how to design mechanical stuff. 🤓

I wouldn't want to stop but 14h building it's probably not a good idea to wire the 220V stuff 🚧 testing tomorrow...

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Altitude909

Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[Post](#) Posted: Fri Apr 19, 2019 5:54 pm Post subject:

Devin,

Can you post hi res renders of the PCB showing the part designators/locations. Its hard to debug when the resistor covers up what part it is. Should probably have that in the appendix..

Good news is that I'm getting tracking out of the dac so I just have to work my way down from that

FactoryDefault

Common Wiggle



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019

Altitude909 wrote:

Devin,

Can you post hi res renders of the PCB showing the part designators/locations. Its hard to debug when the resistor covers up what part it is. Should probably have that in the appendix..

Yeah this would be great. I normally scan PCBs before I start but I forgot this time...



Posts: 90

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

Posted: Fri Apr 19, 2019 6:20 pm Post subject:

[quote](#) [ignore](#)

Sorted. Had a solder short from the jack normal to ground. That's pretty tight spacing between those tabs.

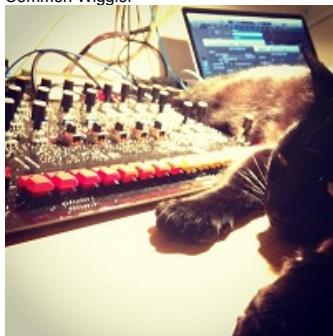
Weston quick and dirty test



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FactoryDefault
Common Wiggle



Joined: 29 Mar 2016
Last Visit: 20 Apr 2019



Posts: 90

Posted: Fri Apr 19, 2019 7:14 pm Post subject:

[quote](#) [ignore](#)

Still no keyboard but who needs a keyboard?
I just loaded the "on the run" sequence into the turbo CPU.
That should keep me busy for an hour or two!

Great job Devin and Grant!

BTW my drone/repeat weirdness went away after I installed the turbo CPU.
There are a couple of switch contacts that float when the cpu is not connected and that causes the logic to act erratically.

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devinw1
Veteran Wiggle

Posted: Fri Apr 19, 2019 8:49 pm Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

Devin,

Can you post hi res renders of the PCB showing the part designators/locations. Its hard to debug when the resistor covers up



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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what part it is. Should probably have that in the appendix..

Good news is that I'm getting tracking out of the dac so I just have to work my way down from that

Not a problem. Can you guys recommend a way to do this relatively easily from KiCAD? I tried "Plot" and selected PDF instead of Gerber and all I got was white.

devinw1
Veteran Wiggler



Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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[Post subject:](#)

[quote](#) [ignore](#)

Jannel wrote:

I couldn't stop once I started the assembly part. My god this is SO well thought all the way through! So much to learn how to design mechanical stuff.

I wouldn't want to stop but 14h building it's probably not a good idea to wire the 220V stuff testing tomorrow...

You're a machine! And thanks very much for the compliments on my work, it really means a lot.

Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

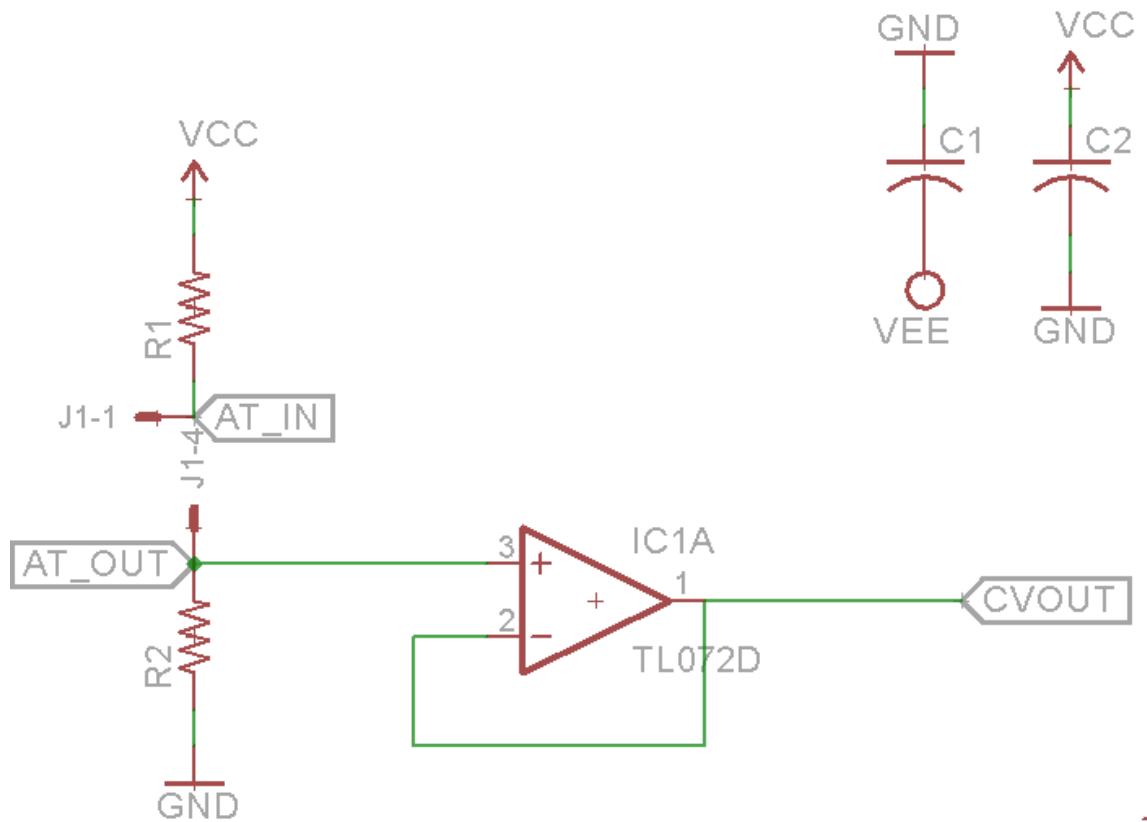
Posts: 2969
Location: Meesheegan

[Post subject:](#)

[quote](#) [ignore](#)

so here's my idea of a simple AT to CV circuit. Maybe a trimmer in there to adjust the range?

Thoughts?



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[Post](#) Posted: Fri Apr 19, 2019 9:16 pm Post subject:

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Joined: 07 Aug 2018
Last Visit: 20 Apr 2019
Posts: 589
Location: Portland, OR

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I just posted the Front Silk Layers of Board A and B as PDF and put them on the Github. Let me know if that works for ya!!!

devinw1
Veteran Wiggler

[Post](#) Posted: Fri Apr 19, 2019 9:16 pm Post subject:

[quote](#) [ignore](#)

jbdiver
Wiggling with Experience



Joined: 31 Aug 2010
Last Visit: 19 Apr 2019



Posts: 267
Location: Minneapolis, USA



First power up and she's making noise! Just need that keybed...

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

[Posted:](#) Sat Apr 20, 2019 12:27 am Post subject:

devinw1 wrote:

I just posted the Front Silk Layers of Board A and B as PDF and put them on the Github. Let me know if that works for ya'll!

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Thanks! Could I ask you also to do other side on both boards? Connector markings are also hidden once installed. Thanks!

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[quote](#) [ignore](#)

Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

[Posted:](#) Sat Apr 20, 2019 12:41 am Post subject:

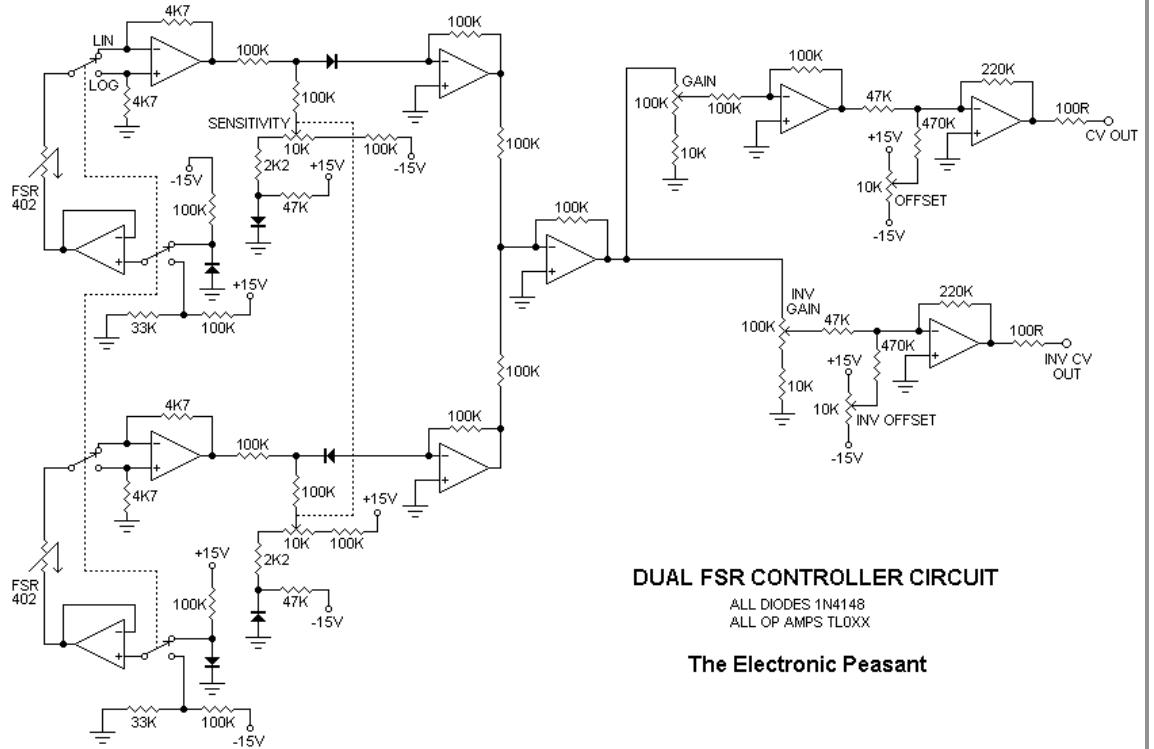
Altitude909 wrote:

so here's my idea of a simple AT to CV circuit. Maybe a trimmer in there to adjust the range?

Thoughts?

Could we add the FSR circuit output to modulation bus somehow? 'Cos that would be perfect!

From some old thread:



DUAL FSR CONTROLLER CIRCUIT

ALL DIODES 1N4148
ALL OP AMPS TLOXX

The Electronic Peasant

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Altitude909
Super Deluxe Wiggler



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019

Posts: 2969
Location: Meesheegan

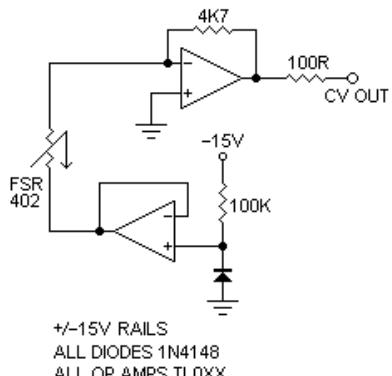
Posted: Sat Apr 20, 2019 5:34 am Post subject:

[quote](#) [ignore](#)

Perfect. I'll lay it out for one side

I'll start with this for testing:

FSR CONTROLLER CIRCUIT



+/-15V RAILS

ALL DIODES 1N4148

ALL OP AMPS TLOXX

The Electronic Peasant

I also found guest's write up:

<http://www.openmusiclabs.com/learning/sensors/fsr/index.html>

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Altitude909
Super Deluxe Wiggler

Posted: Sat Apr 20, 2019 6:22 am Post subject:

[quote](#) [ignore](#)



Ok, hows this look:

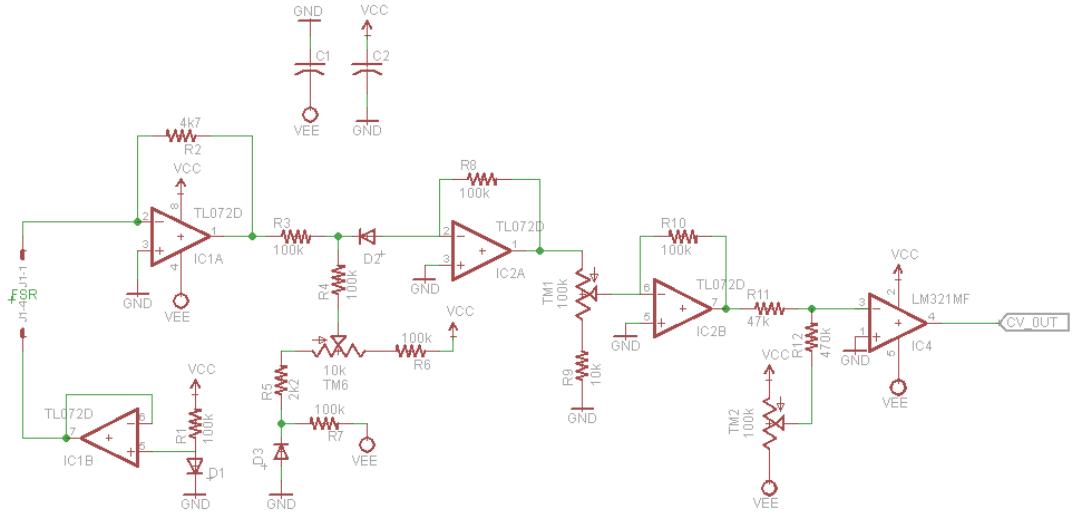
I dont think a big external thing with controls is the way to go. Something simple that you stick inside, trim to suit, and hard route is where I would like to start..

Does can anyone ID the type of connector on the end of the strip? I know any RA 0.1" thing would work but getting the right one would be nice

Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan



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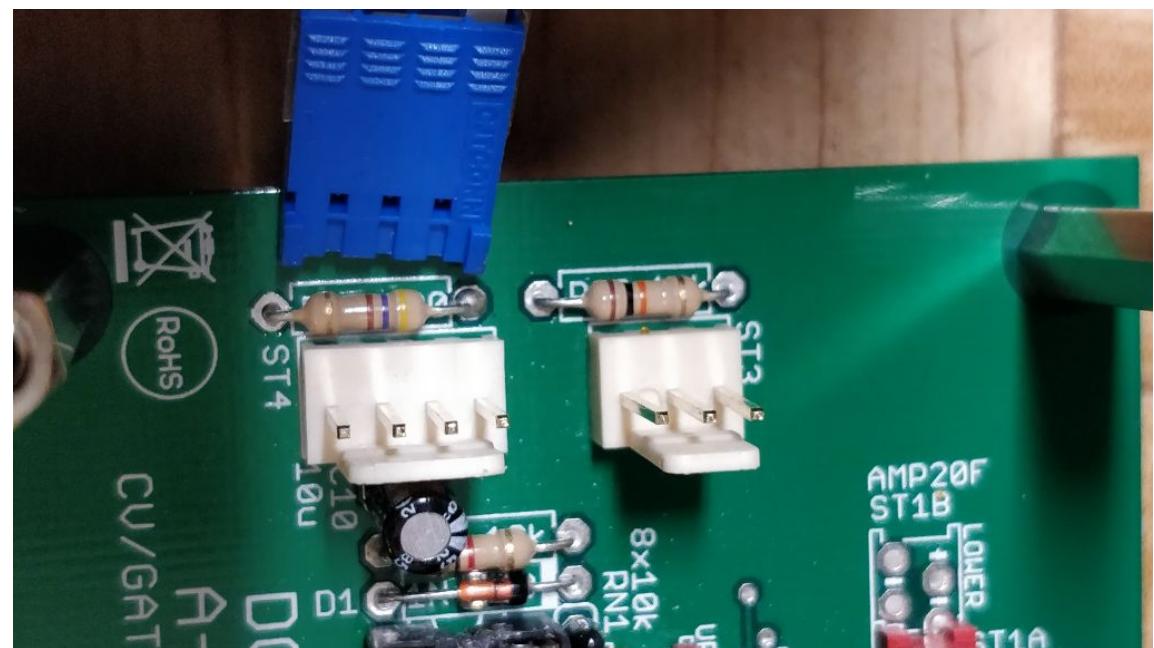
Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

Posted: Sat Apr 20, 2019 6:48 am Post subject:



My old doepfer MKE has these for Fatar aftertouch sensor.

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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[Post](#) Posted: Sat Apr 20, 2019 8:59 am Post subject:

[quote](#) [ignore](#)

huh. so they just used that.. Simple enough

Joined: 12 Oct 2010
Last Visit: 20 Apr 2019



Posts: 69

[Back to top](#)

[Post](#) Posted: Sat Apr 20, 2019 11:15 am Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

Can you post hi res renders of the PCB showing the part designators/locations. Its hard to debug when the resistor covers up what part it is. Should probably have that in the appendix..

I photocopied my boards before building. 😊 Looks horrible, but I can see the white designators OK.

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[Post](#) Posted: Sat Apr 20, 2019 11:19 am Post subject:

[quote](#) [ignore](#)

Altitude909 wrote:

Does can anyone ID the type of connector on the end of the strip? I know any RA 0.1" thing would work but getting the right one would be nice

I'll check my donor Novation: the ReMOTE 37SL next week. I assume they connected this but haven't looked at the manual or service notes, if any. It was a "for parts or not working" unit off eBay.

For me the ideal use of AT would be doing the same job as the mod wheel. I think?

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257



All wirings done, seems to work fine! Lets see how the calibration goes. I feel little bit sorry for you guys waiting for the keybed, 'cos I've got four 3-octave fatars waiting for other projects

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Sparky
Common Wiggler

Joined: 02 Sep 2014
Last Visit: 20 Apr 2019



Posts: 158
Location: California, USA

Jannel wrote:

I feel little bit sorry for you guys waiting for the keybed, 'cos I've got four 3-octave fatars waiting for other projects

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Altitude909
Super Deluxe Wiggle



Joined: 24 Aug 2011
Last Visit: 20 Apr 2019



Posts: 2969
Location: Meesheegan

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Jannel
Wiggling with Experience

Joined: 19 Oct 2015
Last Visit: 20 Apr 2019



Posts: 257

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I should RTFM but I still ask, how do I test the MidiCPU seq/arp stuff? Keyboard works fine for playing and calibration was successful.

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