



## ATX Benchtop Power Supply 0-30V (Remix) - Fusion 360



ECF

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### Summary

NOTICE: Use extreme caution when working around high voltage and high current devices! Please seek assistance if you...

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NOTICE: Use extreme caution when working around high voltage and high current devices! Please seek assistance if you are not comfortable working with power supplies.

Update 12/09/21 - Increased overall length by 10mm to allow more space for wiring.

Update 11/14/21 - Added the embossed labels back that were eliminated in a previous update.

Update 11/04/21 - Added key slots on both sides of the power switch opening so that switch can be mounted in either orientation. Included link for round switch.

Update 10/25/21 - Recessed the fuse holders a little more to allow more exposed threads on the back side and modified the round holes so the fuse holders are captured in place. Modified the vent slots on the right side so they are less likely to cause problems during print.

I really liked the compact ATX benchtop PS by gdoniu93 and started out simply to recreate the model in Fusion360. Somewhere along the way (as it often happens with me), I decided to totally redraw the original design to better accommodate some minor changes that I decided to incorporate. These changes include:

1. Change front panel thickness from 7mm to 8mm so that brass inserts could be added.
2. Enlarged the front panel mounting holes to accommodate M3 brass inserts.
3. Replaced the rectangular On/Off switch with a lighted round switch (only because that's what I had on-hand)
4. Added fuses for all output voltages.
5. Removed the grill work on the right side simply to reduce print time a little.
6. Added embossed text for output terminals.
7. Recessed the variable output terminals the same as other output terminals.

I am printing this remix now and will post more pics when it is assembled and tested.

DSP5005 Buck Converter - [https://www.amazon.com/gp/product/B01LWXAC5E/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o02\\_s01?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B01LWXAC5E/ref=ppx_yo_dt_b_asin_title_o02_s01?ie=UTF8&psc=1)

Output Binding Posts - [https://www.amazon.com/gp/product/B07PFMD1N2/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o02\\_s02?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B07PFMD1N2/ref=ppx_yo_dt_b_asin_title_o02_s02?ie=UTF8&psc=1)

Panel Mount Fuse Holders - [https://www.amazon.com/gp/product/B012CTCWES/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o02\\_s02?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B012CTCWES/ref=ppx_yo_dt_b_asin_title_o02_s02?ie=UTF8&psc=1)

M3-0.5 Threaded Heat Set Brass Inserts - [https://www.amazon.com/gp/product/B077CJV3Z9/ref=ppx\\_yo\\_dt\\_b\\_asin\\_title\\_o06\\_s00?ie=UTF8&psc=1](https://www.amazon.com/gp/product/B077CJV3Z9/ref=ppx_yo_dt_b_asin_title_o06_s00?ie=UTF8&psc=1)

10-40V to 10-50V Step-Up Power Supply Module - [https://www.amazon.com/dp/B07T137H2Y/?coliid=I20LF6R0ZRDPKG&colid=2GFBS288YDODL&psc=1&ref\\_=lv\\_ov\\_lig\\_dp\\_it](https://www.amazon.com/dp/B07T137H2Y/?coliid=I20LF6R0ZRDPKG&colid=2GFBS288YDODL&psc=1&ref_=lv_ov_lig_dp_it)

50W Wirewound Aluminum Shell Resistor 8  $\Omega$  ohm 50W  $\pm 5\%$  Tolerance 8R  
Rohs Certified - [https://www.amazon.com/dp/B08QR9RHFK/?coliid=IFSP6JNRONKE&colid=2GFBS288YDODL&psc=1&ref\\_=lv\\_ov\\_lig\\_dp\\_it](https://www.amazon.com/dp/B08QR9RHFK/?coliid=IFSP6JNRONKE&colid=2GFBS288YDODL&psc=1&ref_=lv_ov_lig_dp_it)

Dual USB Charger Socket with On/Off Switch - [https://www.amazon.com/gp/product/B07ZRQQFTF/ref=ox\\_sc\\_act\\_title\\_1?smid=A177NFKYPJ1LIQ&psc=1](https://www.amazon.com/gp/product/B07ZRQQFTF/ref=ox_sc_act_title_1?smid=A177NFKYPJ1LIQ&psc=1)

Round power Switch - <https://www.amazon.com/gp/product/B07TF76DX9/>

Fusion360 file is included in download package for anyone wanting to make further changes to this compact power supply design.

## Print Settings

### Printer:

Railcore II Custom

### Rafts:

No

### Supports:

No

### Resolution:

.20

### Infill:

15%

**Filament:** Sunlu PLA+

### Notes:

I printed the front panel face up and the chassis face down, as shown. There is a sacrificial single layer on the power switch hole and the DSP5005 module tab overhangs. These can easily be removed with a sharp knife or de-burring tool.

This video contains a wiring diagram and instructions that closely match the parts used in this design. About the only difference is that he added a voltmeter for each of the fixed outputs and uses a different step-up supply for the DSP5005 and one for the on/off switch. Step-up for the on/off switch was used only because his switch needed 12v, but the lighted

switch I'm using works fine on 5v, even though docs call for 12v. <https://www.youtube.com/watch?v=61FKu7sZe4I>

## Post-Printing

Remove the sacrificial layer covering the power switch hole and DSP5005 overhangs.

Insert M3-0.5 brass threaded inserts into left and right edges of front panel.

## How I Designed This

This remix was drawn in Fusion360 using measurements off the .step files provided by gdoniu93 in his original file download package. Very few changes were made to the overall dimensions, only where necessary for the few mods that I made.

Category: Electronics

## This remix is based on



**ATX Bench Top Power Supply 0-30V 4A**

by gdoniu93

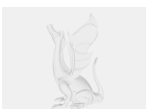
## Model files



**front\_panelv16.stl**



**atx\_chassis\_v13.3mf**



**atx\_chassis\_v13.f3d**



**frontpanelv16.3mf**

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**atx\_chassis\_v13.stl**

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**atx\_front\_panel\_v16.f3d**

[Find source .stl files on Thingiverse.com](#)

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