

Ocie's Box - Enclosure for Duet Wifi - V3



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[VIEW IN BROWSER](#)

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Summary

Well designed Enclosure for Duet Wifi control board for 3030 extrusion frame

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Tags: [wifi](#) [3030](#) [duet2](#) [zaribo](#) [duet](#)

Summary:

Well designed Enclosure for Duet Wifi control board for 3030 extrusion frame.

Specifically, this fits the Duet 2 Wifi. The Duet 3 Mini 5+ is supposed to have the same mounting hole pattern, but I am not sure if it fits in the enclosure due to the different components.

There is a version below that has been remixed by tximy for the Duet 2 Ethernet version. I assume it also fits the Duet 3 Mini 5+ Ethernet version, but have not confirmed.

Key features:

- Active cooling under stepper drivers using a 40x20mm fan

- Wire management hooks to keep cabling under control without having to jam the cables into tight slots
- Space to fit auxiliary boards. M3 screw bosses provided for the following aux boards:
 - 5V 3A USB power jacks. you can fit two of these for a total of 4 USB powered devices (LED lights, Raspberry Pi, etc): <http://amzn.to/2HUPW6H>
 - MOSFET. you can use one of these in place of one of the USB power boards if you are powering a bed heater that draws more than the Duet's 18A circuit can provide: <http://amzn.to/2ozFxFg>
 - Lugs for two 5-pin Wago connectors (221-415) to be used as terminal blocks: <http://amzn.to/2FazZra>
- Cable lugs have holes for 3mm nylon filament to be used for wire support (Prusa method) and are compatible with Jason Canning's excellent ball-joint cable covers:
 - <https://www.thingiverse.com/thing:2787748>
 - <https://www.thingiverse.com/thing:2735303>
 - <https://www.thingiverse.com/thing:2810713>
- Lid prints with no support
- Back Prints with support needed only under the three external cable lugs

Updates:

UPDATE 28-Dec-2020: strmkcr confirmed that the 200mm bear version does work.

UPDATE 23-Dec-2020: At the request of strmkcr, I made a version of the case to fit the Bear frame. It will print on a 200x200mm bed. See files:

- 201223 bear back changes.jpg
- Ocies Bear Back V3 200.STEP
- Ocies Bear Back V3 200.STL
- Ocies Bear Lid V3 200.STEP
- Ocies Bear Lid V3 200.STL
- NOTE: I do not currently have a working Bear or a working printer above 180x180mm, so at this point the print has not yet been tested. If you print it, please do confirm in the comments if it worked.

UPDATE 3-Oct-2018: tximy remixed my lid for the Duet (2.0) Ethernet version - he even reworked all three lids! Thanks a bunch, tximy! <https://www.thingiverse.com/thing:3114155>

UPDATE 3-Aug-2018: Apparently you may have trouble fitting some brands of 40x20 fans. I used a Noctua, and the screw holes on the outer flange are larger than 3mm so that you can use the flexible support posts they supply. So when I attached my fan, the screws are actually sunk down to

the inner flange of the fan. You can see this in the images above. As a result, I did not realize that the lid does not have clearance for M3 screw heads. Sorry about that! If enough people have an issue, let me know in the comments and I will spin a rev to make room for screw heads...

UPDATE 15-Mar-2018: Per popular demand, I made shorter versions of the enclosure so they can be made on smaller print beds. The original parts (Duet Enclosure Back V3 and Lid V3) need to be printed on a 250mm bed. The new versions are shorter and are as follows:

- Duet Enclosure V3 220: Can be printed on a 220mm bed. The Wago connector lugs are removed, as well as the screw bosses for the second USB board and mosfet. This design retains all the same external features, all the Duet features, the cooling fan, and one USB power jack board. See image "Ocie's Box V3 220 edition.jpg" for assembly view.
- Duet Enclosure V3 200: Can be printed on a 200mm bed. This version has the same feature set as the 220 version, but the clearance between the bottom edge of the fan and the bottom edge of the box is a bit tight. This will make wiring a bit messier, as some wires will inevitably need to cross over the Duet itself, which is specifically one of the things I intentionally designed the original box to avoid. But in truth, there is no problem with having wires in front of the Duet - it was purely aesthetic. The cooling is handled by the fan on the backside of the board, so wires in front of the board should not impede cooling at all.

As always, STEP files provided in addition to the STL files, for your hacking pleasure.

I have also added a video showing the process I use for hot-pressing threaded inserts into the case. Very simple: https://www.youtube.com/watch?v=NAN_7Os78-4


UPDATE 9-Mar-2018: Back and Lid revised to V3. Neither part is compatible with V2 models, so V2 models removed for clarity. Changes for V3:





- Replaced single center lid screw with 4 perimeter screws. This helps with lids that bow slightly upon removal from the printer due to internal residual stresses generated from differential cooling during print.
- Enlarged wire hooks for better cable management
- Added a slot to the side wall to allow PanelDue cable to exit into the vertical extrusion slot, if you want to mount your display on top of the printer
- Enlarged cable bundle slot at the bottom of the enclosure for easy of wiring


- Reduced lid thickness from 3mm to 2mm to decrease printing time (18% reduction for PETG, 10% reduction for PLA)
- Removed all features related to mounting a secondary fan, as I believe a single fan will be sufficient for cooling.



For screenshots of all changes, see attached photos

Model files

 **Full size Box** 4 files

	duet_enclosure_lid_v3.step
	duet_enclosure_back_v3.step
	duet_enclosure_lid_v3.stl
	duet_enclosure_back_v3.stl

 **220 mm size Box** 4 files

	duet_enclosure_lid_v3_220.step
	duet_enclosure_back_v3_220.step



duet_enclosure_back_v3_220.stl

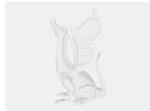


duet_enclosure_lid_v3_220.stl



200 mm size box

4 files



duet_enclosure_lid_v3_200.step



duet_enclosure_back_v3_200.step



duet_enclosure_back_v3_200.stl

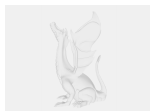


duet_enclosure_lid_v3_200.stl

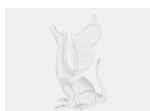


Bear Box 200mm

4 files



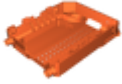
ocies_bear_lid_v3_200.step



ocies_bear_back_v3_200.step



ocies_bear_lid_v3_200.stl



ocies_bear_back_v3_200.stl

Other files



ocies_box_v3_overall_dimensions.pdf



ocies_box_v2_to_v3_changes.pdf

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