



Bambu Lab X1C Bento box fan controller

 **Lapland Expat**

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Summary

A box for electronics to control the fans in a X1C Bento box

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If you don't want your bento box fans to run when no printing is in progress this is a possible solution. The goal is to have as little soldering as reasonable possible.

The Raspberry pi connects to the X1 printer via MQTT to get its status and only starts the fans when they are needed.

There is also a option to just run the fans or don't run them with a flick of a switch.

There is a good hole in the bottom of the X1C to transfer the cables out from the printing chamber, so cable placement in picture. I have also a modified fan bracket do hold some more Wago connectors. <https://www.printables.com/model/516598-bento-box-v1-fan-bracket-wago-holder-less-solderin>

Part list:

1 Raspberry pi Zero W

1 SD card

6 M2,5X5 for Pi and transisor board, 6mm might work

6 M2,5X12 for lid, could be shorter

1 Wago 221-412

1 Wago 221-413
1 Wago 221-415
1 vma411 (Transistor module)
1 LMO78 (DC/DC converter)
1 Switch, don't know the exact model just something I had laying around.
The hole is 6,7mm
1 Low power connector Socket, hole 11mm (Input)
1 Low power connector Socket, hole 8,4mm (Output)
1 Male DC connector to fans matching output socket
1 DC power supply matching input socket in dimensions and fans in voltage (LMO78 can handle 8V to 36V)

The connectors can be changed to whatever you can get your hand on, this was the things that was easy for me

Code:

https://github.com/sjalin/bl_x1c_bento more instructions here

Schematic in pictures

Below is some links to things, some might be in Swedish but see it as a super good opportunity to learn Swedish :p

Low power connector Socket for input:

<https://asset.conrad.com/media10/add/160267/c1/-/en/001460777DS01/datablad-1460777-bkl-electronic-072342l-dc-anslutning-hona-inbyggd-vertikal-56-mm-25-mm-1-st.pdf>

<https://www.conrad.com/p/bkl-electronic-072342l-low-power-connector-socket-vertical-vertical-56-mm-25-mm-1-pcs-1460777>

Low power connector Socket for output:

<https://www.kjell.com/se/produkter/el-verktyg/natadapttrar-nataggregat/dc-kontakter/dc-kontakt-for-chassimontage-hona-p37331>

Male DC connector to fans:

<https://www.kjell.com/se/produkter/el-verktyg/natadapttrar-nataggregat/dc-kontakter/dc-kontakt-med-lodanslutning-55x21x9-mm-p37326>

DC/DC converter:

<https://asset.conrad.com/media10/add/160267/c1/-/en/001603615DS01/datablad-1603615-gaptec-lmo78-05-10-dcdc-omvandlare-kretskort-24-vdc-5-vdc-1-a-5-w-antal-utgangar-1-x.pdf>

Transistor module:

https://cdn.velleman.eu/downloads/29/infosheets/vma411_schema.pdf

https://cdn.velleman.eu/downloads/29/vma411_a4v01.pdf

DC power supply:

<https://se.farnell.com/xp-power/vec65us24/adaptor-ac-dc-24v-2-71a/dp/2524412>

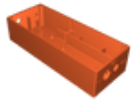
https://www.xppower.com/portals/0/pdfs/SF_VEC65.pdf

Possible improvements:

Better holder for the LMO78, there is a trial one beside the switch but that was not good either

Some LED indicating that the fan is running

Model files



case.3mf

lid.3mf

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