Printables by JOSEF PRUSA

NAS ITX PC Case with stackable expansions [MODCASE MASS]

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VIEW IN BROWSER

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Summary

Modular NAS enclosure. Easy to assemble, it's compact and has expandable drive bay support.

Gadgets > Computers

Tags: upgrade mini case design mount diy modular enclosure model computer pc computeraccessories itx pccase sff sffpc sffcase modcase sffpcie itxcase

The Modular Attached Storage Stack (link) is a compact 3D printed NAS enclosure with expandable bays support up to 8x 3.5" + 3x 2.5" drives.

For the premium version of MASS with additional features, please see MASS Premium Page here.

Features

- **Minimal Part count. Maximum Strength.**
  Sturdy and simple assembly with 1 screw type for all

- **Expandable Drive Support**
  Stackable Modules for up to 8x 3.5” + 3x 2.5” drives
- **Fully 3D Printable**
  210x210mm Print volume, optimized for FDM
- **Powerful Airflow**
  Quiet vertical airflow with 3x 140mm fans
- **Customizable**
  Add a touch screen and other optional features

The Premium version of MASS adds the following:

- PCIE Slot Support
- 5 Drives per Caddy
- Capacity for Up to 13 Drives
- Handles
- Dual 2.5” to 3.5" Drive Adapters
- FlexATX PSU support
- Addon Fan Modules
- Supports development of more MODCASE designs!

Specs:

	MASS Premium	**MASS Free**
Drive Bays	Up to 10x3.5” + 3x2.5"	4x3.5”+ 3x2.5"
PCI-E Slot	1 Slot Low-Profile	NA
PSU	SFX, SFX-L, FlexATX	SFX, SFX-L
Fans	3x 140mm or 120mm	3x 140mm or 120mm
CPU Cooler	66mm tall	55mm tall
Printer Requirements	Min. Bed 210x210 240°C Nozzle	Min. Bed 200x200 240°C Nozzle
Core Size (APU)	210x199x162mm 6.7L	203x199x151mm 6.1L

Bay Module	199x162x150mm 4.8L	199x150x150mm 4.5L
Motherboard	ITX	ITX
Material	1-2kg PETG	1-2kg PETG
Handles	Low profile and standard options	NA
Display Mod	up to 7" with adjustable CAD	up to 5" with adjustable CAD
Additional 2.5" Bays	Optional mounts for 2x2.5" drives in a 3.5" bay	NA
Mechanical PBT	Optional: use keyboard switch as power button.	NA

Required to Complete

Screws: M3x20 (40pcs) - Amazon Option, AliExpress Option
Power Button: Ø16mm - Amazon Option, AliExpress Option

(MASS has been designed to use one screw type for all)

PC Parts List:

- Mini ITX Motherboard
- SFX, SFX-L or Flex PSU
- 3.5” HDDs (Up to 10 Drives)
- 140mm Fans (Up to 4 Fans)
- 5in1 SATA Power and SATA Cables
- [Optional] PCIE Sata Expansion Card or PCIE SAS HBA Controller
- [Optional] 2.5” HDDs (Up to 13x)

Download Instructions:

MASS_Instructions.pdf (v1.3)

Note: Optional files are under "other files" section of your printable download page.

Update Log

New in V1.3

- Improved fitment for all ITX motherboard types, including boards with integrated IO shield. (Top and Rear pieces updated)
- Mechanical Key Cap integrated into Rear punchout
- FlexATX PSU mount added to Free version
- New Optional Front with no 2.5" drives
- New Optional Front with 4x2.5" drives for core module with FlexATX. (The core can be used as a compact standalone 4x2.5" bay NAS)

Note: Optional Front panels are located in the optional folder. All updates are backwards compatible.

New in V1.2

- New side panels with integrated displays added
- Adjustable CAD templates for side panels
- HDMI / USB passthrough added to rear
- New 2-Split Bays module added
- Tool-less Drive retainer added
- Optional screw and locknut option for drive retainer
- Bays module has improved clearances for SATA connectors

Note: The old single body Bays module is now in the optional folder. All updates are backwards compatible.

Reddit Discussions on MASS:

- r/datahoarder - Free Modular NAS Enclosure
- r/sffpc - Free Stackable ITX NAS Case

FAQ

▶How much does it cost to print?

1-2kg of filament. MASS is tested on generic PETG. You can typically find 1kg rolls for $13/kg each (Link), $12/kg if you buy 4 (Link), $10/kg if you buy 10 (Link).

▶Premium vs Free difference?

Premium has PCIE slot support, holds 5 drive per caddy, supports up to 13 drives, has handles, extra 2.5” drive adapters, Flex PSU bracket, addon Fan modules and ongoing updates. It supports development of more awesome designs.

▶Can Free version use premium modules?

No. MASS Free Version was the original model without PCIE slot, making it slimmer by 11mm on the width of the tower, and thus not compatible with the PCIE equipped Premium model.

MASS Free is still a potent enclosure with 4x3.5” bay support and can technically stack up to 8 drive bays using M.2 HBA.

▶Is MASS durable?

MASS is built with an intimate understanding of the non-anisotropic strength properties of FDM. The parts are appropriately designed to overcome layer splitting issues by orientation and print settings. MASS development is committed also to ongoing improvement to ensure it is a durable and reliable option for your NAS setup.

▶How to connect more than 4 drives?

To expand the beyond the 4 sata ports on most ITX motherboards, you can install a Low profile PCIE SATA card on the premium model. You can also use an m.2 SATA controller to add a few more.

My other models:

Meta Quest 3 - Quest 2 Head Strap adapter

https://www.printables.com/model/609529-meta-quest-3-quest-2-head-strap-adapter-now-with-s

EVOLUTION PC case

https://www.printables.com/model/680197-evolution-custom-pc-case-easy-assembly

Parametric Fan Shroud

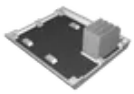
https://www.printables.com/model/618369-parametric-fan-shroud

Model files

rear.3mf

top.3mf

bottom.3mf



front.3mf

bays_f.3mf

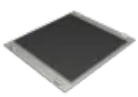
bays_r.3mf

hdd-retainer-tool-less.3mf

clip-x12.3mf

base.3mf

tpu-feet.3mf

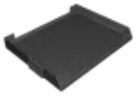


sides.3mf

fan-cover.3mf

hdd-slider.3mf

hat-simple.3mf



cable-cover.3mf

Other files

mass-optional-parts.zip

mass-instructions.pdf

mass-eula.pdf

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