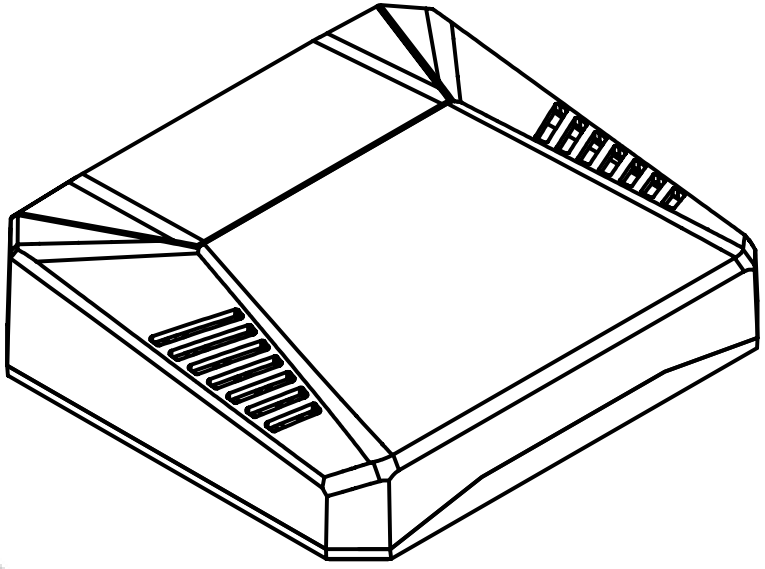
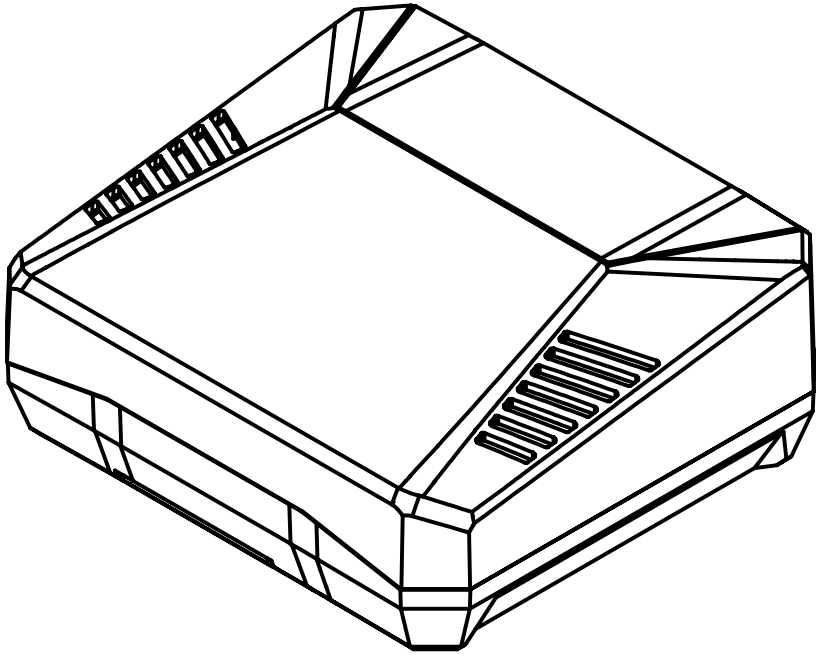
Argon ONE V3 / M.2 NVMe PCIe

Product Guide





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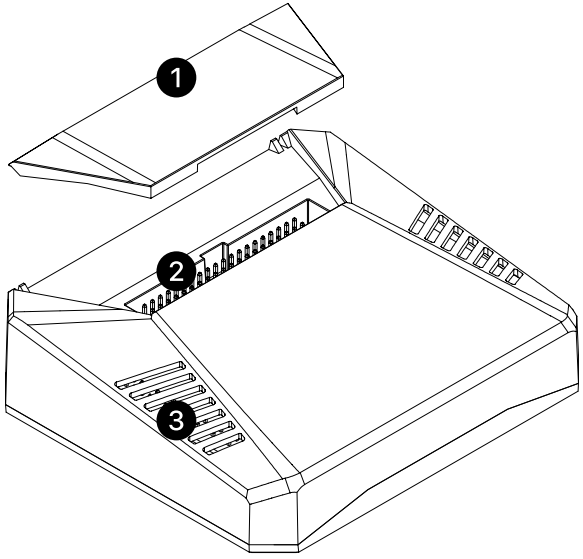
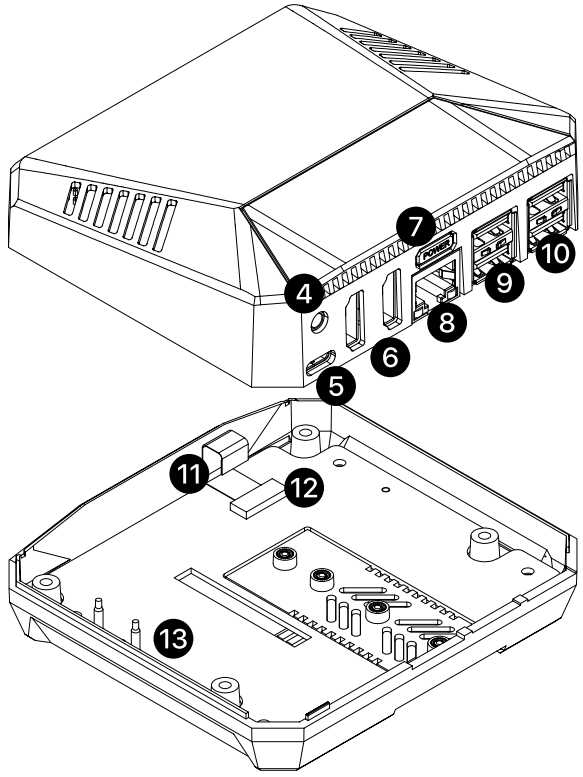
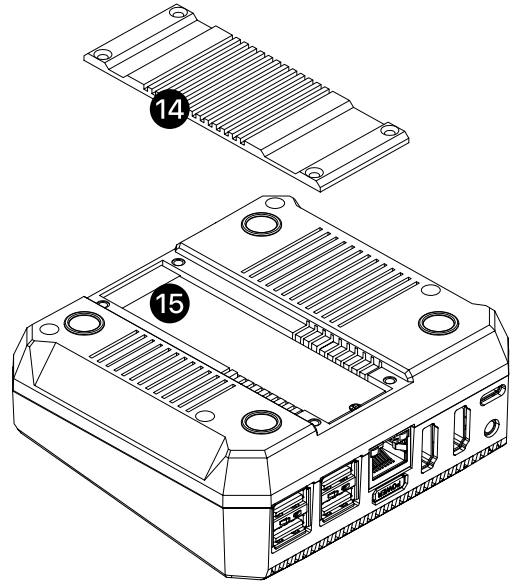
A. ARGON ONE V3 / M.2 NVMe PCIE PARTS



ARGON ONE V3





ARGON ONE V3 M.2 NVMe PCIE

1. Magnetic Removable Top Cover
2. 40 Pin GPIO Access
3. Exhaust vents
4. 3.5mm Audio Port (Works only with **Argon BLSTR DAC**)
5. USB-C Power In
6. 2 x Type A HDMI
7. Power Button
8. Gigabit Ethernet
9. 2 x USB 3.0
10. 2 x USB 2.0
11. PCIe Film Strip
12. PCIe Socket
13. Power Pogo Pins
14. **THRML** M.2 Heatsink
15. M.2 NVMe Drive Socket

B. ARGON ONE V3 FEATURES

Durable and Functional Case Material for Passive Cooling	Whole top of the case is injected aluminum alloy and injected ABS plastic bottom
More efficient Active Cooling	Blower type 30mm PWM Programmable fan. Full fan power control vis-a-vis CPU Temp response via Argon Script
Internal MicroController for Power Button and FAN Control Functions	Powered by Raspberry Pi **RP2040 Chip**. New Hacker Friendly feature.
Built-in IR Receiver	(GPIO 23) Works with Argon Remote once Argon Script is installed, but is fully user Programmable for other remotes in LIRC
Multi function Power Button and Power Management	Safe shutdown with power cut, Reboot, Always ON Mode
2 Regular HDMI	Converted the micro HDMI of the RPi 5 to Regular HDMI
GPIO Access	Full GPIO Access with Magnetic cover

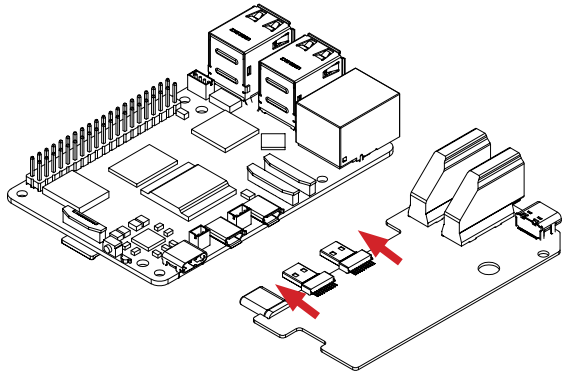
C. ARGON ONE V3 ADD ON MODULES

Add ON: Argon ONE M.2 NVMe PCIe Expansion Board	Fully compatible with the Argon ONE M.2 NVMe PCIe Expansion Board for the M.2 NVMe Storage via the PCIe of the RPi 5
Add ON: Argon BLSTR DAC	Full high definition 24-bit 192kHz Texas Instruments PCM5122 digital audio codec (DAC) via the 3.5mm jack
Add ON: Argon PWR Uninterrupted Power Supply Module	Argon PWR UPS | 5.1V 5A PD UPS with internal RTC

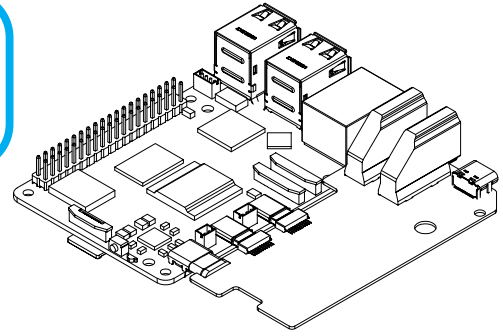
D. ASSEMBLY INSTRUCTIONS

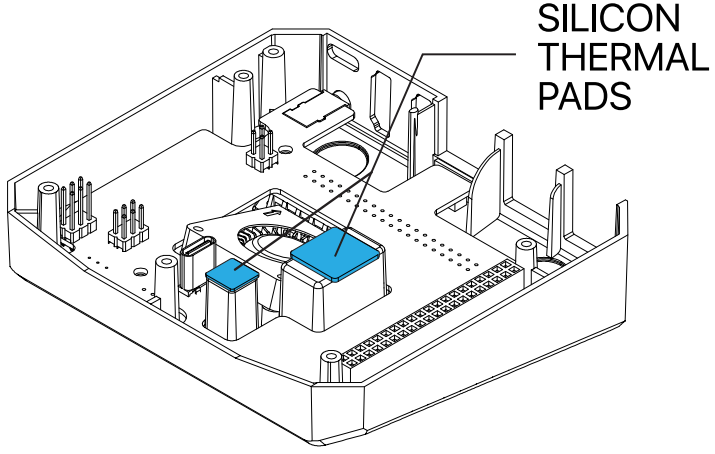
1. Connect the Raspberry Pi® 5 to HDMI-Power Board. Place the Silicon Thermal Pads on the Argon ONE V3 case heatsinks (CPU and PMIC).

Raspberry Pi 5 with HDMI-POWER BOARD will NOT POWER UP if NOT CONNECTED with the TOP CASE



PUSH ALL THE WAY IN
THE HDMI-POWER BOARD





Make sure that the HDMI-Power Board is **FULLY CONNECTED** to the RPi 5 to **AVOID POWERING UP ISSUES.**

2. Select the **Argon ONE V3** Power Button Management Mode:

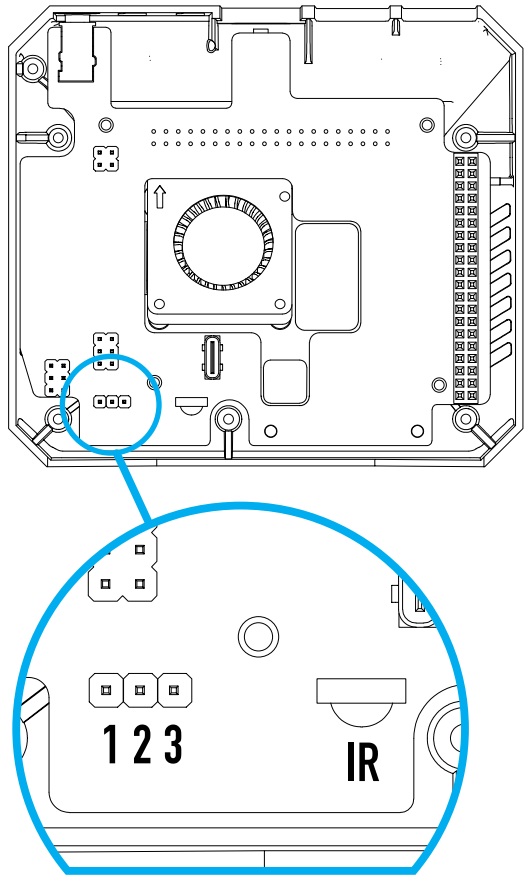
ARGON ONE V3 / M.2 NVMe PCIe CASE

JUMPER PIN SETTING

JUMPER PIN SETTING	MODE	BEHAVIOUR
Pin 1-2	Default Setting (Mode 1)	You need to PRESS button to Power ON from shutdown or power outage.
Pin 2-3	Always ON (Mode 2)	Power current will flow directly to Raspberry Pi. NO need to PRESS button to power ON from power outage

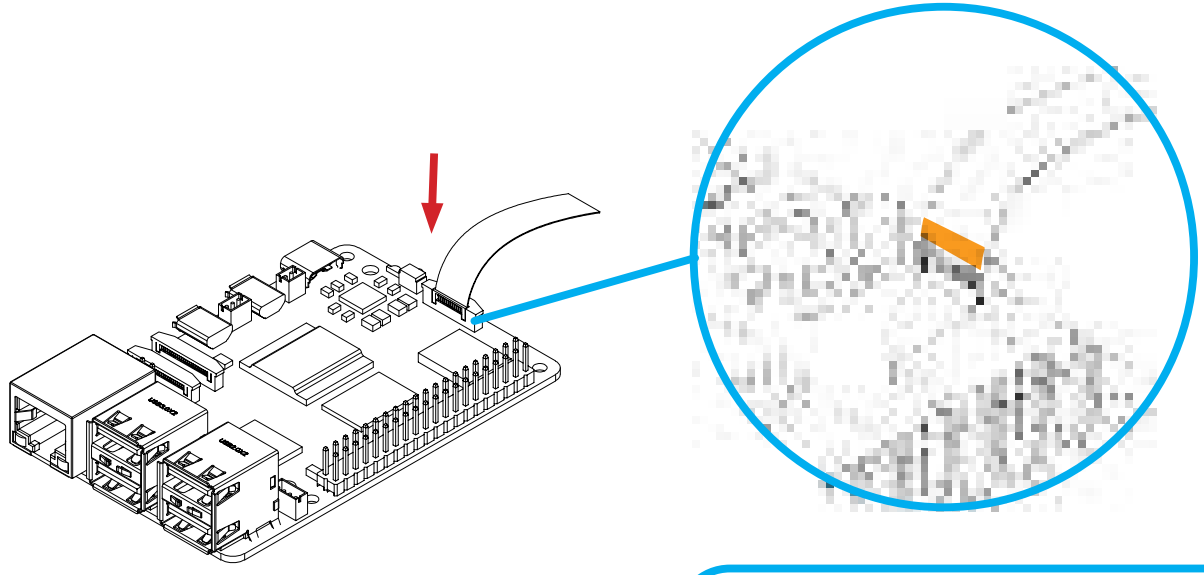
DEFAULT SETTINGS

Pin 1-2 or No Pin



3. Connect the **PCIe Pipe Flat Flex Cable** to the Raspberry Pi® 5 PCIE port.

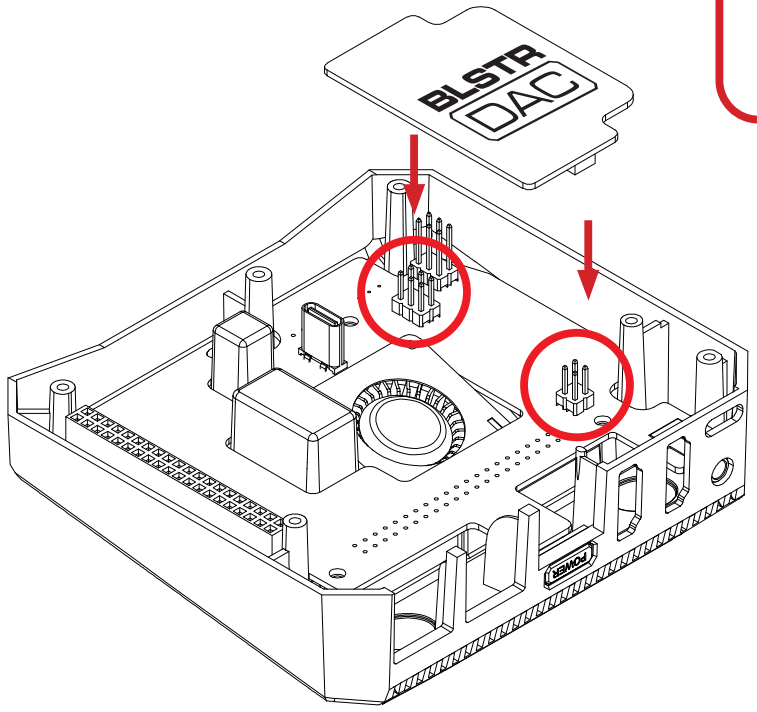
Skip this step if you have not purchased the **Argon ONE V3 M.2 NVMe PCIe Case or Expansion Board**

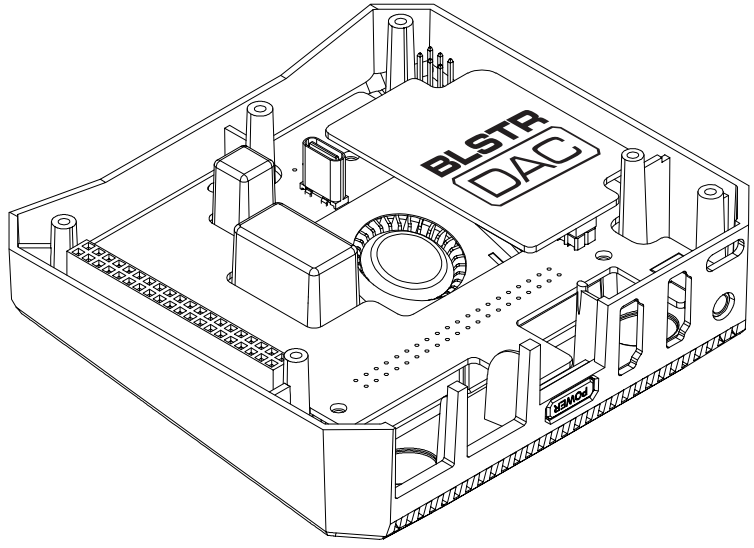


COPPER SIDE of the strip should be facing the **white side of the PCIE connector** of the Raspberry Pi® 5.

4. Connect the **Argon BLSTR DAC** Board to the pins of the Argon ONE V3 RP2040-Fan Board.
   Argon BLSTR DAC is needed to activate the 3.5mm Audio Port.

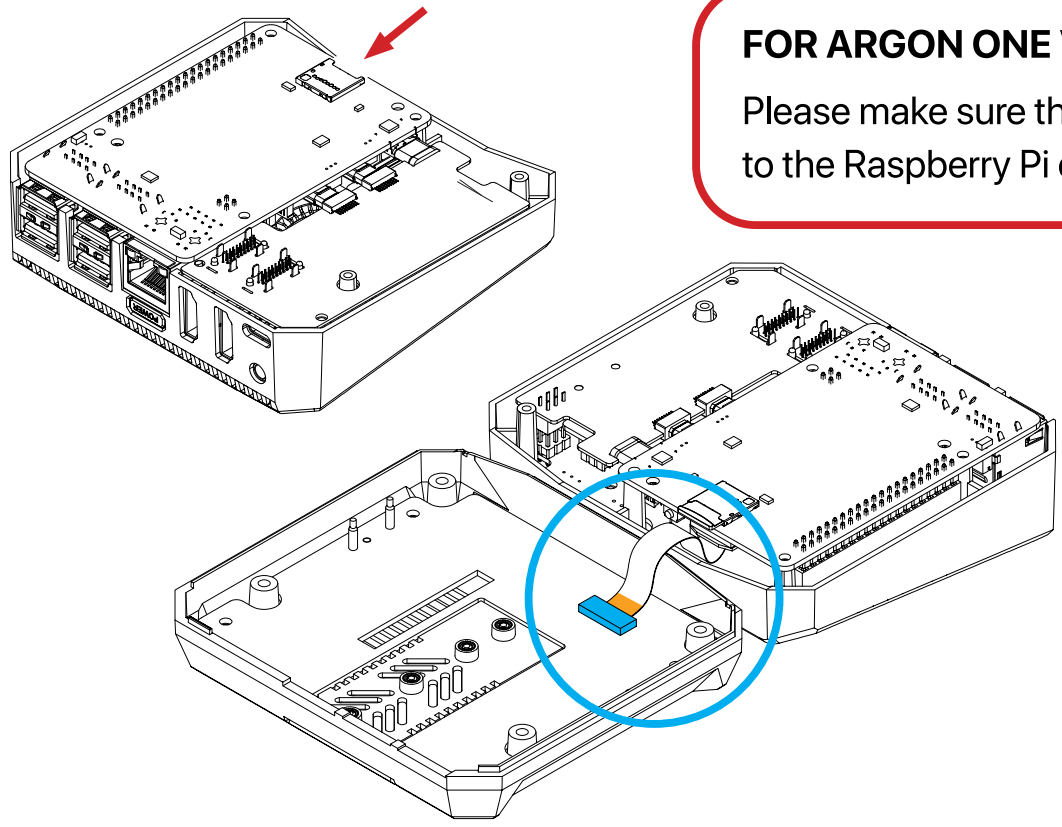
Skip this step if you have not purchased the **Argon BLSTR DAC.**





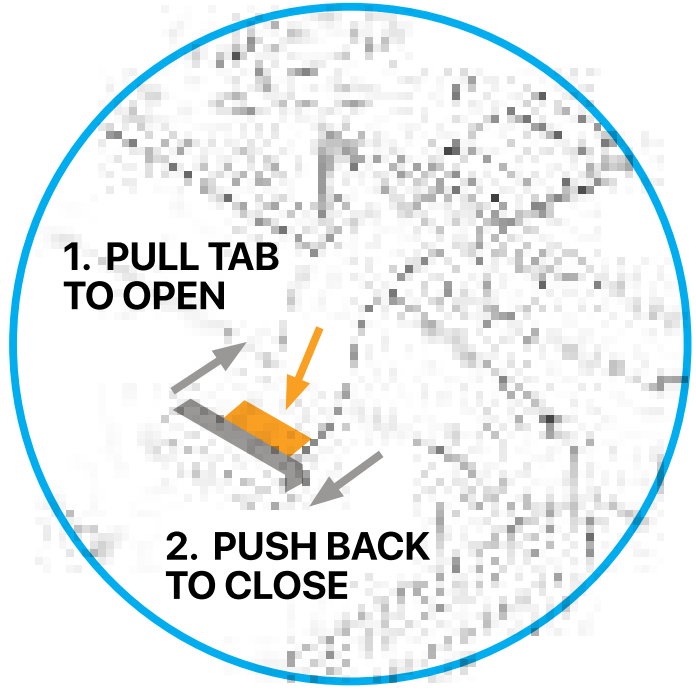
Refer to **Configuring Argon BLSTR DAC** page 16.

5. Carefully connect Raspberry Pi® 5 HDMI-Power assembly to the female **GPIO** and **6-pin Power port** of the Argon ONE V3 case.



FOR ARGON ONE V3 CASE ONLY:

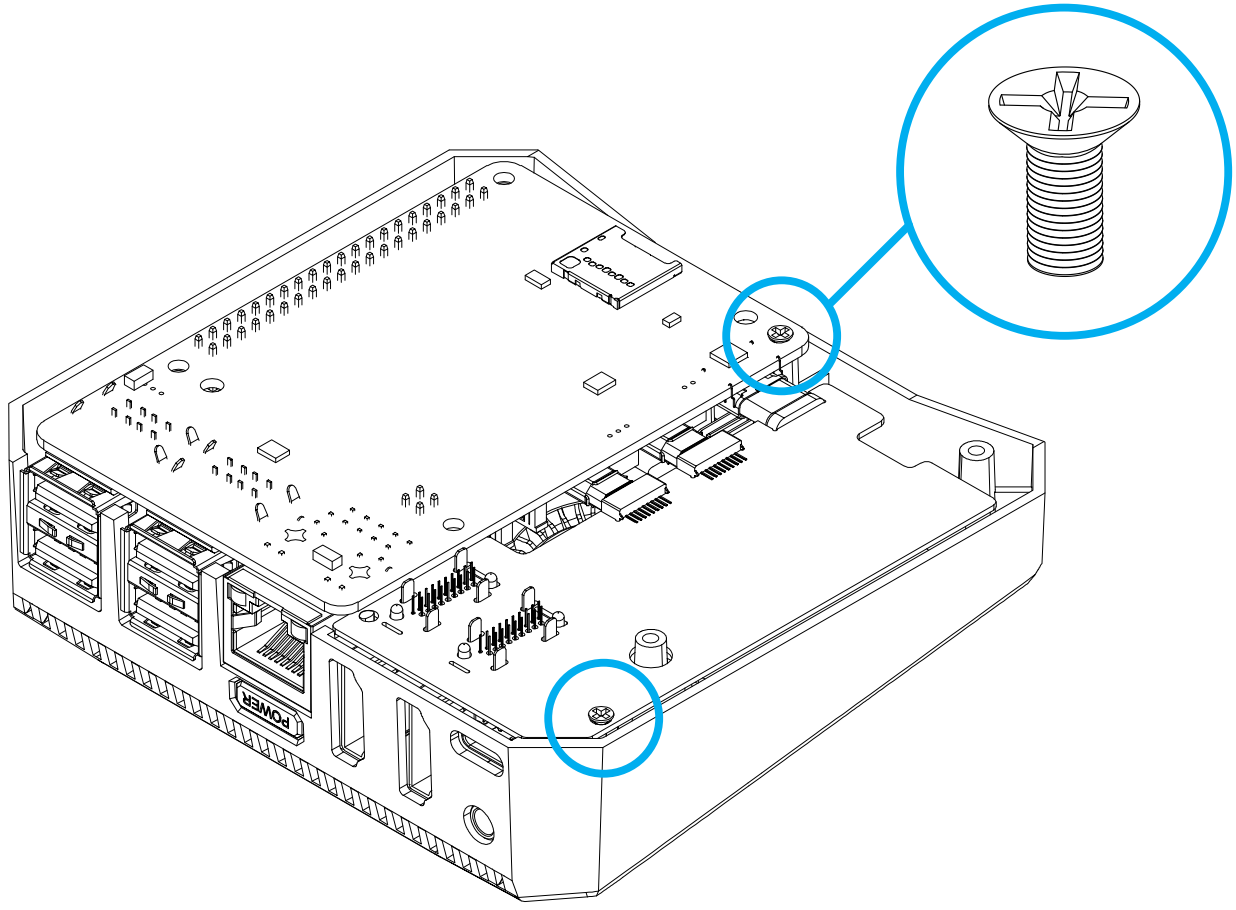
Please make sure that the microSD Card is **NOT INSERTED** to the Raspberry Pi during assembly.



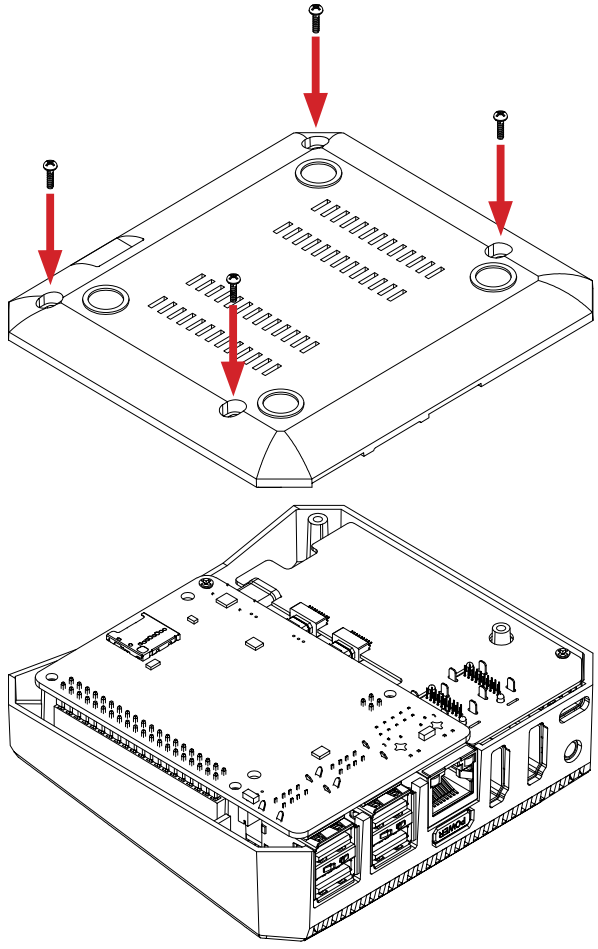
FOR ARGON ONE V3 M.2 NVMe PCIe

Please connect the PCIe Pipe Flat Flex cable **with COPPER SIDE FACING UP** as shown in the image.

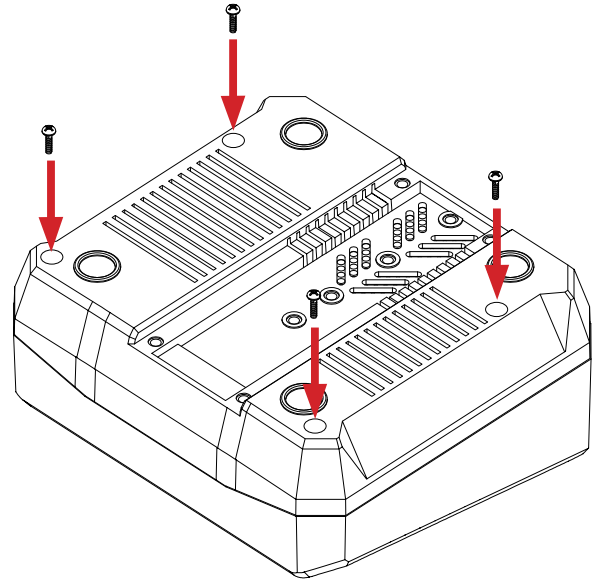
6. Secure **flat head screws** to fasten Raspberry Pi® 5 and HDMI-Power Board assembly to top case.



7. Fasten the bottom cover of the **Argon ONE V3 / M.2 NVMe PCIe** using the **round head screws.**



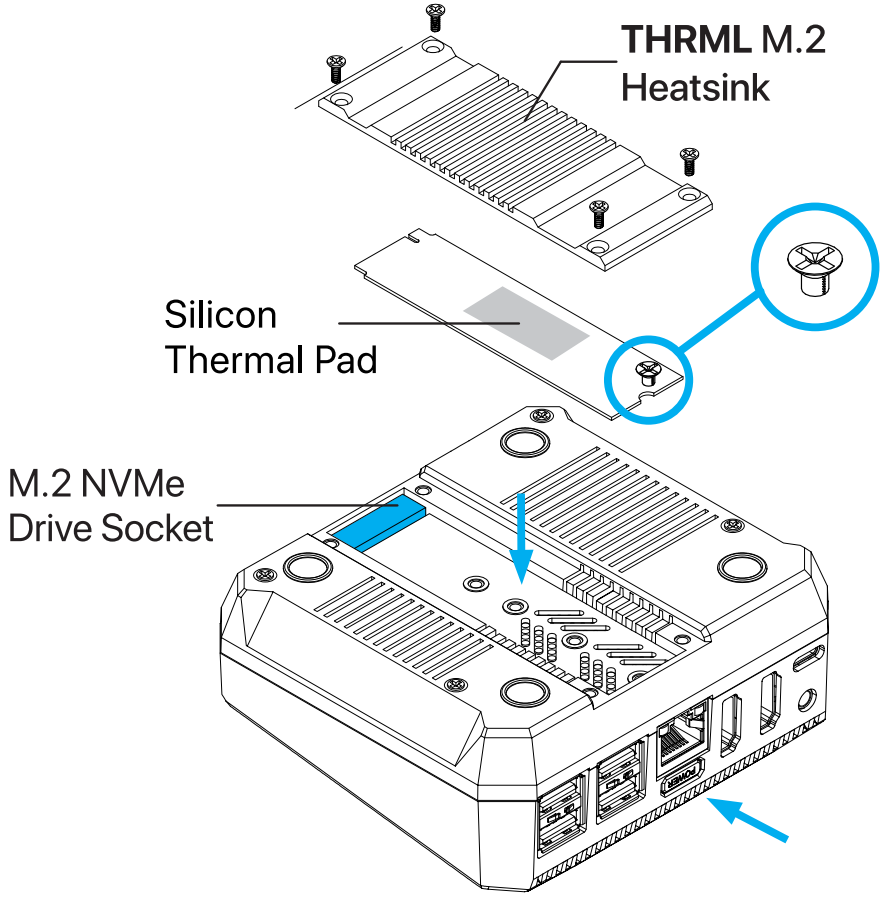
ARGON ONE V3



ARGON ONE V3
M.2 NVMe PCIe

To ensure that the NVMe Drive is powered correctly via the POGO PINS make sure that the **Case Bottom** is **SCREWED TOGETHER** with the **Case Top.**

8. Connect your **M.2 NVMe Drive** to the **Argon ONE V3 M.2 NVMe PCIe Expansion Board**. This Board will accept **M.2 Key M** and **M.2 Key B+M** NVMe Storage Drive.



This Board is **NOT compatible** with **M.2 SATA** Storage Drives.

You may move the screw point on the Board to the appropriate size of your Storage Drive.

PRESS the **POWER Button** to **TURN ON** after assembly and connecting the Power Supply

E. INSTALL ARGON ONE V3 POWER BUTTON AND FAN CONTROL SCRIPT

STEP 1: Configure the EEPROM Setting to optimize power and boot from NVMe.

1. Connect to the Internet, make sure Raspberry Pi Time is updated and execute in the Terminal.

```
curl https://download.argon40.com/argon-eeprom.sh | bash
```

2. Reboot.

STEP 2: Install the Argon Control Script and Config.txt Settings

1. Connect to the Internet and execute in the Terminal.

```
curl https://download.argon40.com/argon1.sh | bash
```

2. Reboot.

UNINSTALL

To uninstall the **Argon ONE V3** script you may do so by clicking the **Argon ONE V3 Desktop icon**.
You may also remove the script via Terminal Shell by typing:

```
argonone-uninstall
```

Always reboot after changing any configuration or uninstallation for the revised settings to take effect.

F. AUTOMATED SETTINGS IN ARGON ONE V3 SCRIPT

The **ARGON ONE Script** automates the installation of all the libraries, programs and EEPROM and Config settings necessary for the **RP2040** in the **Argon ONE V3 Case** to be able to communicate with the **Raspberry Pi 5** and perform the various functions like Active Cooling and Power Management.

Below are the SETTINGS that were automated by the Argon ONE Script.

	EEPROM Config	**config.txt**
Argon ONE Power Button	PSU_MAX_CURRENT=5000	usb_max_current_enable=1
Argon ONE V3 M.2 NVME PCIE	BOOT ORDER=0xf416 PCIE_PROBE=1	dtparam=nvme dtparam=pciex1_gen=3
Argon BLSTR DAC		dtoverlay=hifiberry-dacplus,slave

G. DEFAULT ARGON ONE V3 POWER BUTTON AND FAN SETTINGS

Upon installation of the **Argon ONE V3** script by default, the settings of the **Argon ONE V3 Power button** and **cooling system** are as follows:

ARGON ONE V3 STATE	ACTION	FUNCTION
OFF	Short Press	Turn ON
ON	Long Press (>= 3 s)	Soft Shutdown and Power Cut
ON	Short press (<3 s)	Nothing
ON	Double tap	Reboot
ON	Long Press (>= 5 s)	Forced Shutdown

CPU TEMP	FAN POWER
55 C	30%
60 C	55%
65 C	100%

However, you may change or configure the FAN to your desired settings by clicking the **Argon ONE V3** Desktop icon.

Or via Teminal Shell by typing and following the specified format:

```
argon-config
```

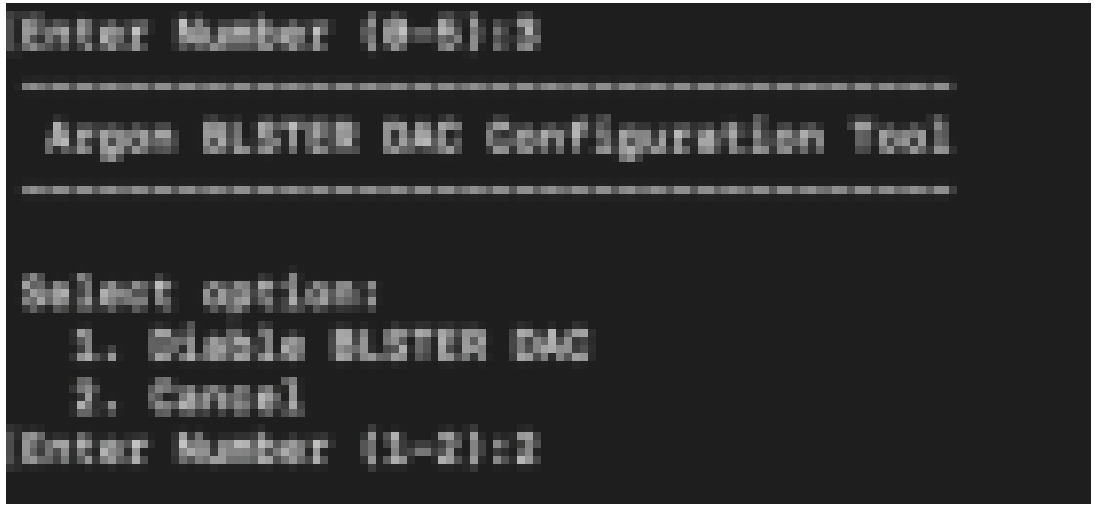
H. CONFIGURE ARGON BLSTR DAC FOR RASPBERRY PI OS

1. Make sure you have installed the **Argon Configuration Script** into your by running in the **Terminal Shell**:

```
curl https://download.argon40.com/argon1.sh | bash
```

2. To enter the **Argon Configuration Tool** type **argon-config** in the Terminal Shell. Enter number 3 to install **Argon BLSTR DAC** Configuration.

3. Once installed you will be able to see this.



4. If you want to configure manually the **ARGON BLSTR DAC** just add the setting in the config file located at **/boot/firmware/config.txt**

```
dtoverlay=hifiberry-dacplus,slave
```

5. Then **Reboot**.

For more information please visit: **https://argon40.com/blogs/argon-resources**

I. SET UP BUILT-IN INFRARED RECEIVER

The latest version has a programmable Infrared Receiver installed that can turn ON and OFF the device using the proprietary **Argon 40 IR Remote**.

To configure the **Infrared Receiver ON/OFF signal of Argon ONE V3** type in the Terminal Shell:

```
argonone-ir
```

Then follow the instructions as indicated.

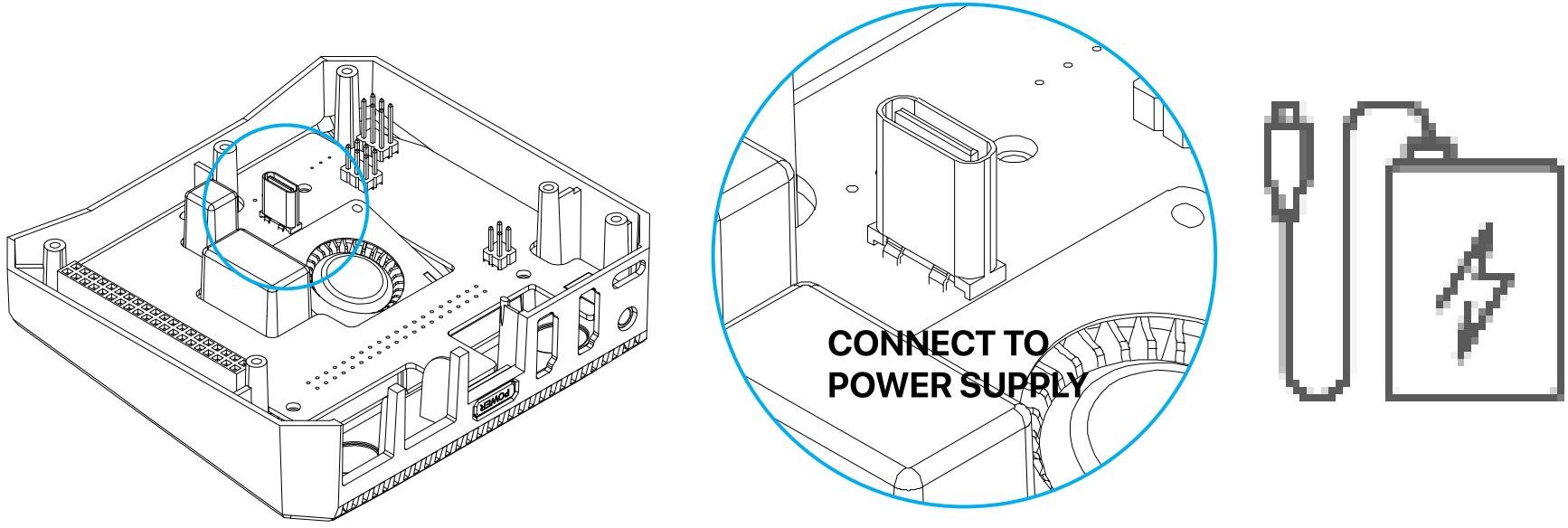
RECOMMENDED IR REMOTE & POWER SUPPLY

Argon IR Remote
https://argon40.com/products/argon-remote

Argon PWR GaN 27W Power Delivery
https://argon40.com/products/argon-pwr-gan-usb-c-pd-power-supply-27-watts

J. ARGON ONE V3 BASIC HARDWARE TEST

1. **Connect** the **internal USB-C** socket on the RP2040-Fan Board to a 5V Power Supply.
2. **Press** the Power **ON Button**.



3. This would initiate the internal **FAN to RUN** for **5 SECONDS** and then **STOP**.
4. This would indicate that the RP2040 is able to communicate properly with the Power Button and the internal FAN and that the board is fully functional.

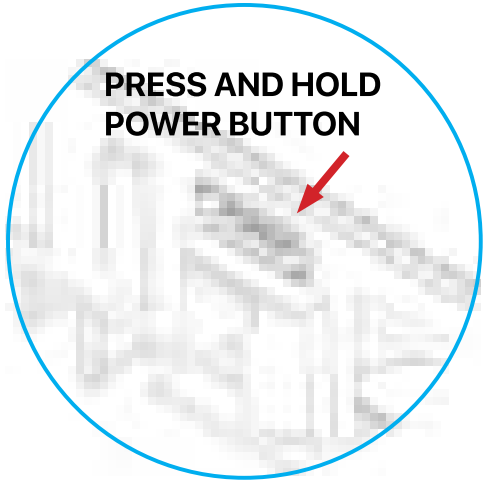
K. UPDATE ARGON ONE V3 FIRMWARE

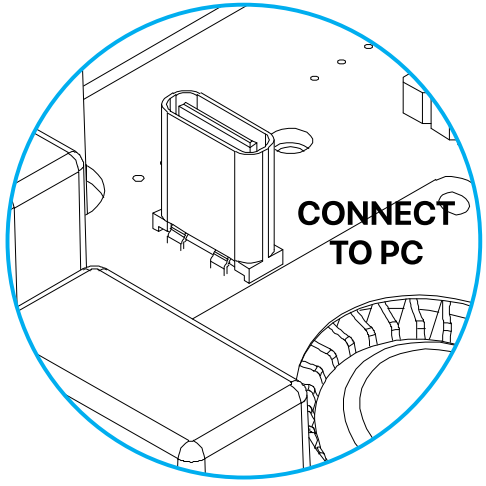
1. Download in your PC or Raspberry Pi Computer the latest Argon ONE V3 Firmware from the link below:

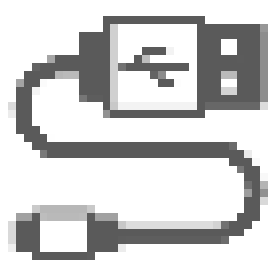
   https://download.argon40.com/firmware/ArgonOne.uf2

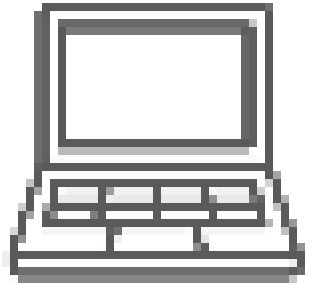
2. **PRESS** and **HOLD** the **Argon ONE V3 POWER BUTTON** while you **connect internal USB-C** with **Data cable** to your **PC** or **Raspberry Pi computer.**

3. This puts the RP2040 into USB mass storage device mode.









4. Then you can **DRAG** and **DROP** your **LATEST compiled .uf2 firmware file** to the USB mass storage device.

5. Eject device when completed.