X12 ULTRA V3

OCTOMINER™

System Troubleshooting Guide

Welcome

Thank you for purchasing the OCTOMINER™ X12 ULTRA™ mining system.
Every X12 is thourougly tested before shipping.
This guide will help you troubleshoot the issues you might encounter while
setting up the machine.

Initializing System diagnostics.

X12 ULTRA has an integrated system diagnostics mode for system health monitoring.
OCTOTEST has been built to verify that the system is running nominally and to pinpoint issues
with an error code on the monitor. This troubleshooting guide will go through the error
messages and help you fix these issues.

To enter the system diagnostics wait for the system to initialize. The system will reboot several
times at first, wait until the system bios has initialized.

To test the fans make sure you have the original SSD that shipped with the system.
1. Hold the down arrow on the keyboard until you get to the boot selection.
2. Select OCTOTEST from the boot selection and press enter.
3. Choose the correct test option by typing the number correspondind to your system.

For X12 Ultra, select an approptiate 12GPU option for your system:

3W is for systems with 140mm fans
2W is for systems with 120mm fans
3PSU stands for systems with 3 power supplies
2PSU stands for systems with 2 power supplies
1400W is for systems with DELL power supplies

For example, for a system with 3 power supplies you would select the option:
0) 12GPU_3W_3_PSU

Power Delivery System, Power Supplies, Compatible cables and PDU

OCTOMINER X12 and X8 come with various configurations of power supplies ranging from one to four units with ratings ranging from 460W up to 1800W per unit. Verify the specification of your power supply and calculate the rating based on your mains voltage as 110-250v output has different wattage ratings. The system consumes up to 200W at 100% fan speed. Leave at least 10% power surplus for optimal operation.

The accessories include power splitter cable. The C13 ends are meant to be plugged in to the power supplies. On the other end you'll find a C20 inlet that is compatible with properly rated cables and PDU's (Power Delivery Unit).
C20 inlets are rated at 16A/250VAC international and 20A/250VAC North America whereas C13 is rated at 15A/250V in North America and international at 10A/250V.
Due to the higher rating of the C20 inlet, a properly rated cable and PDU combination must be used. If such a power delivery option is not available to you it is possible to use individual C13 cables for each of the power supplies.

Troubleshooting power delivery

Refurbished server power supplies provided by OCTOMINER and tested in stress test cabinets before they get installed in your machine. In addition to stress testing, the output voltages are measured to be within optimal range. However here are a few tips to pinpoint if you are having any issues with your power delivery.

Make sure your graphics cards power requirements don't exceed the rated output of the power supplies. Power output of the power supplies is dependent on the supplied input voltage. Check the label on the power supply to match your AC voltage to the output rating and add 200W for the system running with fans at 100%. It's strongly recommended to not run your system over 90% of the maximum power output.

* Check that the 6 pin cable labeled as PSON is firmly connected on the motherboard and PSU backplane.
* Make sure each power supply is inserted properly and the status LED is working.
* If the system keeps crashing remove all but one power supply and remove all but one GPU.
* If still facing the same issue replace that single power supply and replace the graphics card
   with a different one.
* Reseat RAM into another slot, make sure it's properly seated.
* Unplug the Systems Controller PCIe cable, disabling the fans.

Display doesn't work/ Blue LED blinks slowly.

Here are some of the troubleshooting steps to fix an issue in the case of a malfunctioning or non functioning display.

1. Make sure that the power supplies turn on at the same time from a PDU (Power Delivery Unit) Plugging in the power supplies one at a time may interfere with the normal functioning of the systems controller.

2. Make sure that the green LED on the power supplies is working. If the light is not turned on try taking a power supply from a different slot and see if the LED turns on and that the testmode is working. If this is the case then the issue is most likely with the power supply. However if after swapping the working power supply it also doesn't light up the LED then the issue is with the power supply backplane. Inspect the pins of the backplane to see if any of them are bent.

3. Make sure that the 4 pin cable is firmly connected to the display.

Test Fails with the following error message:

FAN 0 MAX RPM <4200
FAN 0 50% PWM >3500
> Issue: The rightmost fan has PWM issues. The issue might be a loose connector
> a defective fan, something blocking the airflow or a temporary issue with the testmode.
> Solution: Rerun the testmode. If the result is the same then
> make sure the Connector Labeled as " FAN 0" on the diagram
> is firmly attached.

FAN 2 MAX RPM <4200
FAN 2 50% PWM >3500
> Issue: The second fan from the right has PWM issues. The issue might be a loose connector
> a defective fan, something blocking the airflow or a temporary issue with the testmode.
> Solution: Rerun the testmode. If the result is the same then
> make sure the Connector Labeled as "FAN 2" on the diagram
> is firmly attached.

FAN 4 MAX RPM <4200
FAN 4 50% PWM >3500
> Issue: The third fan from the right has PWM issues. The issue might be a loose connector
> a defective fan, something blocking the airflow or a temporary issue with the testmode.
> Solution: Rerun the testmode. If the result is the same then
> make sure the Connector Labeled as "FAN 4" on the diagram
> is firmly attached.

FAN 6 MAX RPM <4200
FAN 6 50% PWM >3500
> Issue: The fourth fan from the right has PWM issues. The issue might be a loose connector
> a defective fan, something blocking the airflow or a temporary issue with the testmode.
> Solution: Rerun the testmode. If the result is the same then
> make sure the Connector Labeled as "FAN 6" on the diagram
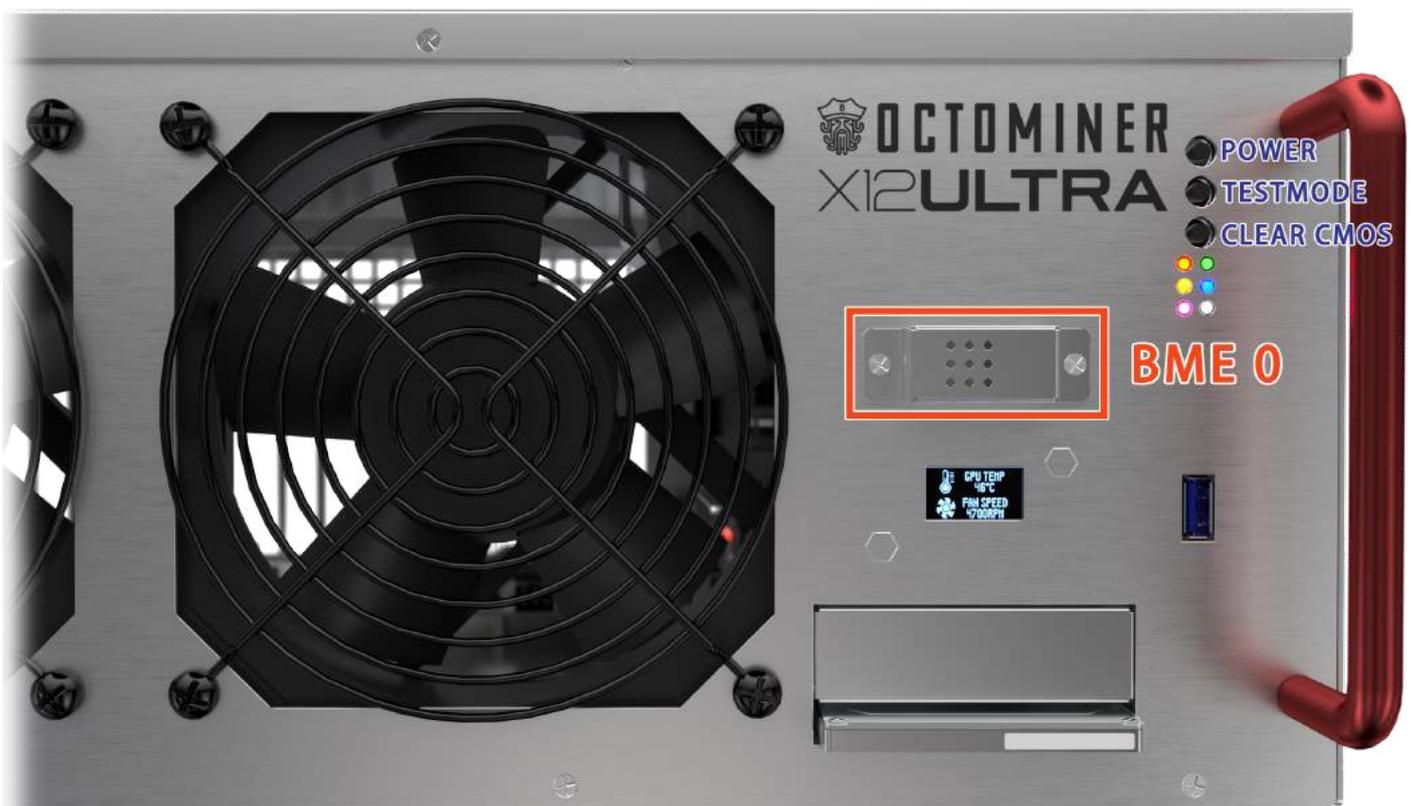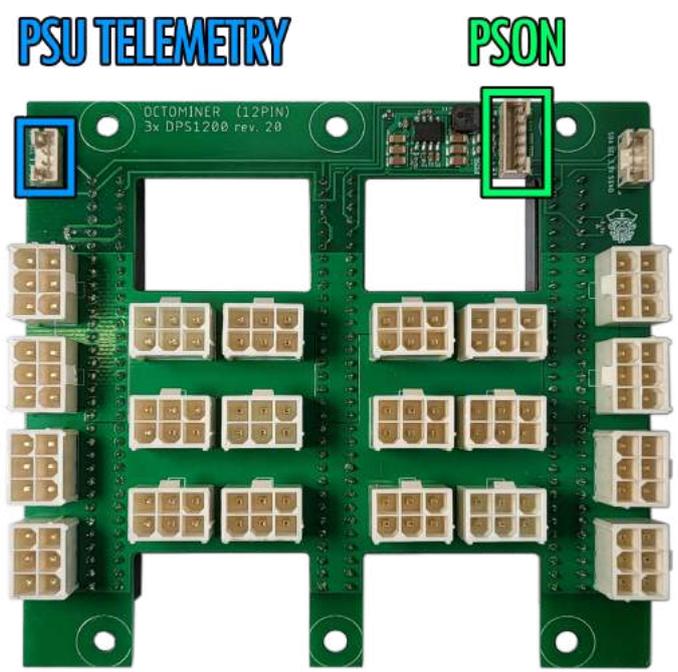> is firmly attached.

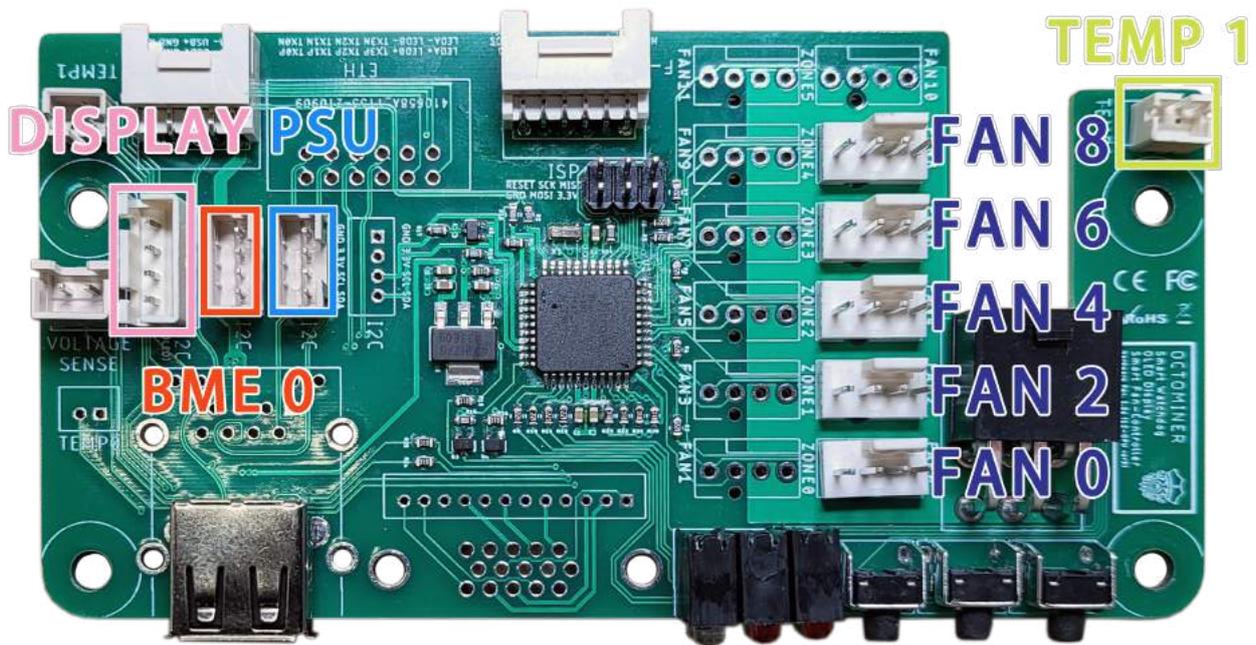FAN 8 MAX RPM <4200
FAN 8 50% PWM >3500
> Issue: The leftmost fan has PWM issues. The issue might be a loose connector
> a defective fan, something blocking the airflow or a temporary issue with the testmode.
> Solution: Rerun the testmode. If the result is the same then
> make sure the Connector Labeled as   "FAN 8" on the diagram
> is firmly attached.

If none of the fans are working make sure that the PCIE power cable is firmly connected to the systems controller and the power supply backplane. Check for "PSU" labeled in blue in the graphic on the next page.

PSU 0   PSU 1   PSU 2

TEMP 1

PSU TELEMETRY

PSON

OCTOMINER (12PIN)
3x DPS1200 rev. 20

OCTOMINER
X12ULTRA

POWER
TESTMODE
CLEAR CMOS

BME 0

GPU TEMP
46°C
FAN SPEED
4700RPM

SYSTEM CONTROLLER

BME 0 out of range

Issue: The Temperature sensor located at the lower center of the front of the machine is not reporting the correct temperature.

Solution: Make sure the Connector Labeled in light blue as "BME 0" on the diagram is firmly attached.

Temp 1 out of range

Issue: The Temperature sensor located at the rear of the machine is not reporting the correct temperature.

Solution: Make sure the Connector Labeled in dark blue as "TEMP 1" on the diagram is firmly attached.

PSU AC out of range

Issue: The systems controller can't communicate with the power supply, the power supply is not firmly connected, the power cable is broken or the power delivery unit doesn't work.

Solution: Make sure the Connector Labeled on the diagram above in blue as "PSU" on the systems controller is firmly attached.

Make sure the other end of the cable is securely attatched to the power supply backplane shown on the diagram below.

PSU DC out of range

Issue: The systems controller can't communicate with the power supply, the power supply is not firmly connected, the power backplane has a bent pin or the power supply is not functional.

Solution: Make sure the Connector Labeled on the diagram above in blue as "PSU" on the systems controller is firmly attached.

Make sure the other end of the cable is securely attatched to the power supply backplane shown on the diagram below.

System Won't Start, No Video.

To find a cause in a case when the system just won't start it's best to begin with the simplest of probable reasons and working your way to the more time consuming/ complex ones, eg. it's best to check if the power stip is on before changing the RAM.

*Make sure the power supply LED's are on.
If not make sure the power supply is fully inserted. Try with just one power supply first.

* Is the PSON cable connector firmly fastened on the motherboard and the power supply back-plane?
The motherboard is responsible for turning on the power delivery. If the 6 pin cable connecting the power supply backplane and the motherboard is not securely connected the system won't turn on.

*Are the status LED's on the front panel working?
The Systems Controller is powered by the motherboard.

*Check if the CPU fan is spinning.
 If not, press the power button on the front panel or the one on the motherboard.

*Did you connect VGA properly? Is the monitor powered?

System keeps rebooting.

* Make sure each power supply is inserted properly and the status LED is working.
* If the system keeps crashing remove all but one power supply and remove all but one GPU.
* If still facing the same issue replace that single power supply and replace the graphics card
   with a different one.
* Reseat RAM into another slot, make sure it's properly seated.
* Unplug the Systems Controller PCIe cable, disabling the fans.

SSD

Each octominer is tested before shipping. Issues with the boot media are most likely shipping related or can happen when the SATA cable gets disturbed during initial set up.
If the boot drive is not detected try disconnecting and connecting the drive. In case that doesn't help make sure that both of the SATA cable connectors are securely fastened.
If the machine is still booting into the bios screen reconnect the sata cable to a different SATA header on the motherboard.

The machine can't connect to the internet

.
After making sure the modem and the ethernet cable works proceed to checking if
the gray ethernet cable labeled in gray as "6" is firmly connected on both the
motherboard and the systems controller. If this doesn't solve the issue see if the port
on the rear of the machine works.

Other issues with the front panel:
Some issues can not be displaid through the systems controller Testmode, The following issues that might happen are:

No image displaid on the status display.
This issue can occur when the display cable has come loose. Make sure that the connector labeled in mint green as "7" is firmly connected on both the oled panel below the systems controller, as well as on the systems controller itself.

The USB on the front panel is not working.
This issue is most likely related to the Black USB cable between the motherboard and the systems controller. Make sure the cable Labeled in green as "USB" is firmly connected.
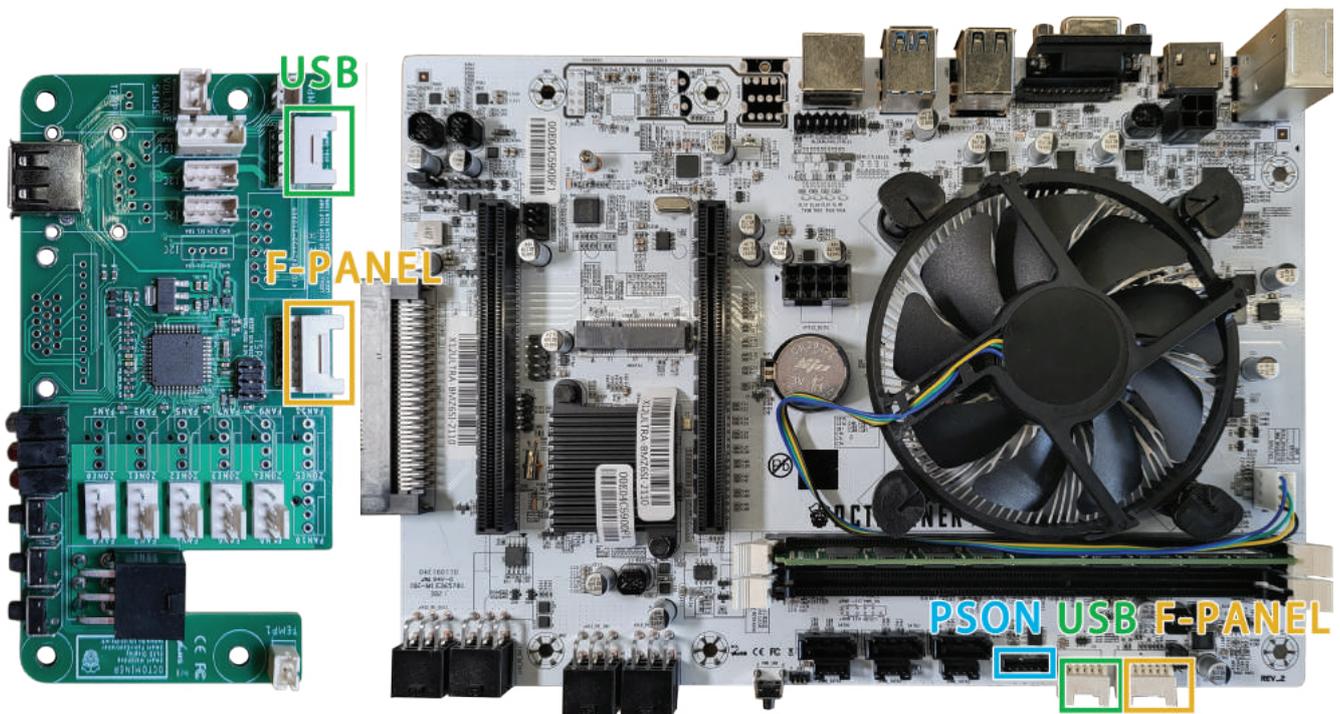
The reset and power button are not working.
This issue is caused by the power header cable being loose or damaged. Make sure the red tipped cable labeled in red as "3" is firmly connected on the motherboard as well as on the systems connector.

The system doesn't turn on.

This issue can be caused by loose Front Panel connector. Check for the graphic on the next page and see if the cable labeled in mustard yellow as "F-Panel" is firmly connected between the motherboard and the system controller.
Check that the 6 pin cable labeled as PSON is firmly connected on the motherboard and PSU backplane.

Getting access to motherboard connectors CPU and RAM

In order so troubleshoot some of the issues removing of the power supply guide bracket is required. In order to do so first remove the power supply by pushing down on the rubber tab and pulling out.
Pull out the power supply and unscrew the 6   screws on the right side of the machine, as shown on the diagram. Carefully remove the guide bracket to gain access to the motherboard.
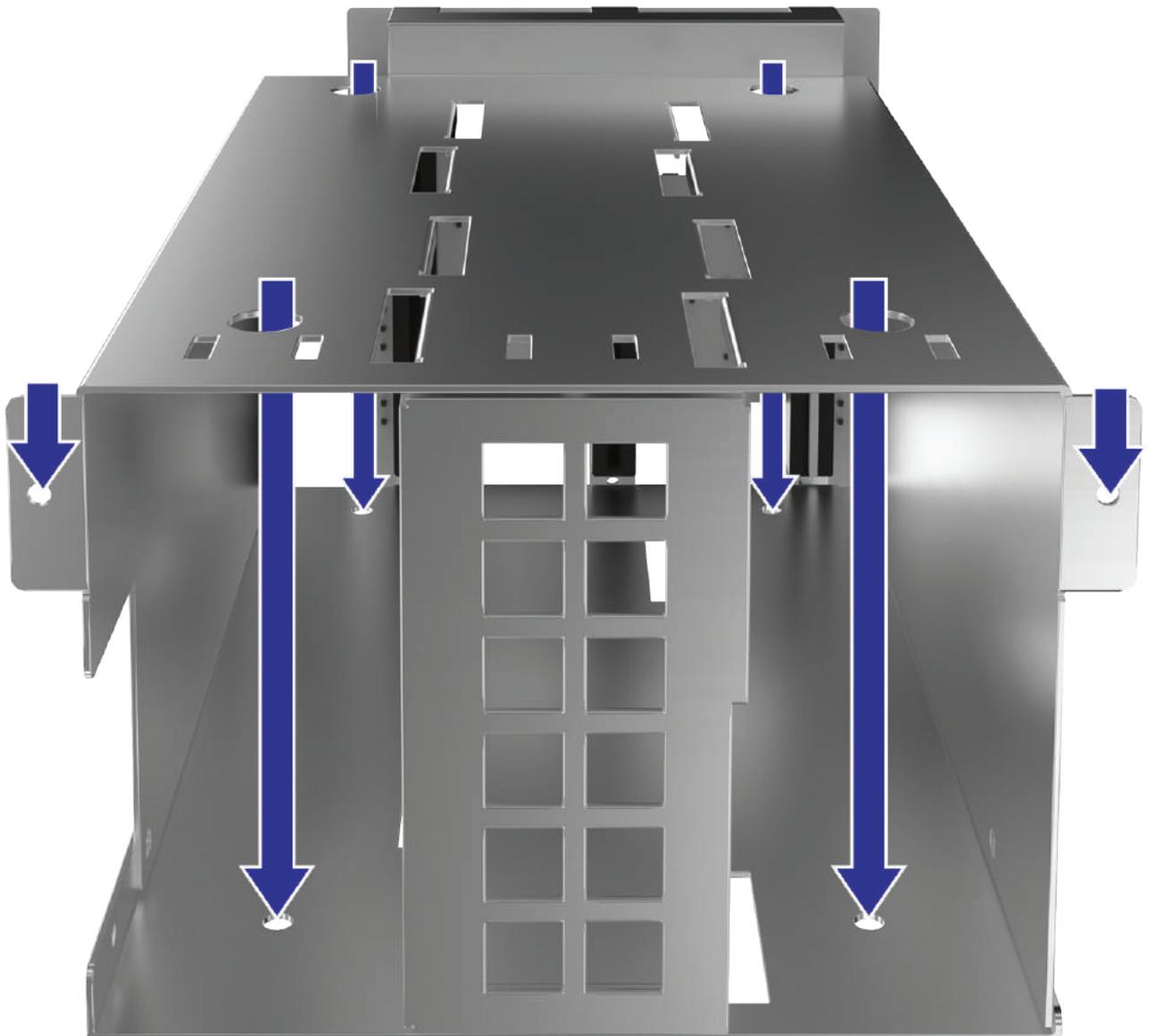
Five fast beeps on Boot.

While the machine beeping on startup is normal five fast beeps right after turning on the machine might mean the RAM module is either loose or defective.
Remove the Power supply guide bracket and re insert the RAM. Make sure the connector clicks on both sides and at the same time. If it doesn't work after that it is worth trying again, just to make sure it's a RAM and not just a connection issue.

Detection of Graphics Cards.

Octominer X12 Ultra supports all available PCIe graphics cards, provided driver support for the OS.

If none of the cards are detected the issue is most likely related to drivers. If updating drivers is not solving the issue go to the BIOS by pressing DEL key on boot and change the PCIe version to Gen 2.

If one or a few of the cards are not detected.
To find the graphics cards that are not being detected, boot the system with a single card first and keep adding one card at a time for each boot. Once a non functioning PCIe slot/GPU is found try a different GPU and PCIe power cable. If there's still no card detected contact OCTOMINER support.

Systems controller not working

After power on, the motherboard boots and sends a signal to the Systems Controller. You should see the Blue LED light up for a moment, after which the OLED will display the start screen.

The Systems controller won't turn on if the motherboard is not turned on. Try clearing the CMOS by pressing the clear CMOS button on the front panel.

If the Systems Controller is not turning on even though the motherboard is working try disconnecting the USB header from the Systems controller and plug it back in. You should see the blue LED on the front panel light up for a moment followed by the OLED turning on.

If the OLED is not turning on disconnect the front BME temperature sensor and the 4 pin power supply backplane data cable. Remove and reconnect the Systems Controller USB header.

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