

(Review/Guide) WhatsMiner M3X 12.0 Th/s, 2100W Bitcoin (SHA-256) ASIC miner

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The most up-to-date version of this review/guide is available at Bitcointalk.org forum:

<https://bitcointalk.org/index.php?topic=3322593>



Figure 1 WhatsMiner M3X. Picture copyright (c) WhatsMiner.

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1. General information, other items needed

WhatsMiner M3X is a Bitcoin (SHA-256) ASIC miner using 28nm ASIC chip technology, manufactured by **WhatsMiner** (headquarters in Shenzhen, China).

Their official overseas distribution arm is called **Team Pangolinminer**. This unit was received as a sample unit from Team Pangolinminer for this review. (www.pangolinminer.com)

WhatsMiner M3X is a standalone miner with a built-in controller board and you don't need a separate controller unit to run it.

What is new in this miner compared to the previous model (M3), is that this one comes with a 2100W built-in power supply unit.

The power supply unit is called WhatsPower P5.

You need 180-240 V mains voltage to be able to run it, it won't work in a 110-120V mains voltage system.

This built-in power supply unit design kind of reminds me of the AvalonMiner 761 model, which was sold in mainland China and South Korea only.

The technology is pretty much the same as in the WhatsMiner M3, but there is a small improvement in the miner performance.

According to the official technical specifications, the nominal hashrate is from 12.0 to 13.0 Th/s with a nominal power consumption of 1800-2100 Watts.

It weights 7.15 kg and outer dimensions are 440mm x 200mm x 300mm.

```
WhatsMiner M3X

Hash rate: 12.0 Th/s
Power consumption: 2100W
Power efficiency: 0.175 J / Gh/s
AC voltage input for the power supply: 180 - 240 VAC
DC voltage input for the miner: 12 VDC
ASIC chip type: SMTI 1700 (28nm SHA-256 ASIC chip)
ASIC chip quantity per unit (miner): 189 chips
Number of hash boards per unit: 3 hash boards
Cooling: 2x 120mm x 38mm 12VDC 2.8A fan, model: KZ12038B012X (front and back, in a push-pull configuration).
Weight: 7.15 kg
Dimensions: 440mm x 200mm x 300mm
```

Figure 2 Technical specifications.

Other items needed:

- C13 power cord suitable to your country's electrical socket. Make sure that it is a good quality one and able to handle the over 2kW load
- Ethernet cable to go from the controller to your router/switch.
- Computer to set initial pool and configuration settings.

2. Unpacking

Team Pangolinminer handles their order system fast and smooth, and keeps you updated about your order status.

This miner was sent from Hong Kong in April 9 and it arrived in Finland in April 12. It took only three working days, so we can see that using **DHL** or other fast courier service is a great idea for long distance shipping.

The packaging was simply great and robust.

There is a custom carved styrofoam which protects the miner inside a plastic bag from impacts. There is no extra space inside the cardboard box which is good, because you don't want the goods to move inside the box during shipping.

This packaging design is good, as it makes very little room for possible damages during the shipping.

Inside the cardboard box you can find the miner with the built-in power supply unit and also a C13 to Type I power cord (3x1.5mm² wiring, good amp rating).

They say that pictures say more than 1000 words, so here we go:



Figure 3 Packaging material.



Figure 4 Packaging material.

3. Overview

Here is a nice set of pictures showing the miner and the built-in power supply unit.

You can click these pictures individually to show a high resolution version of the picture located in a [Imgur.com](#) picture album.



Figure 5 WhatsMiner M3X picture set 1.



Figure 6 WhatsMiner M3X picture set 2.



Figure 7 WhatsMiner M3X picture set 3.

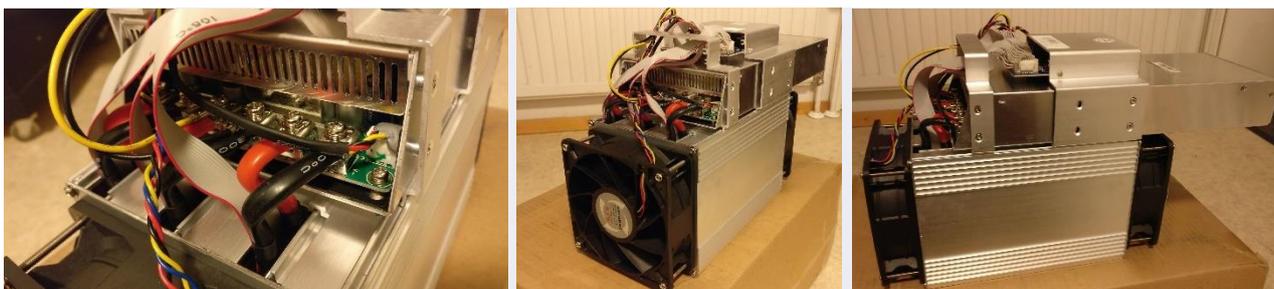


Figure 8 WhatsMiner M3X picture set 4.



Figure 9 WhatsMiner M3X picture set 5.



Figure 10 WhatsMiner M3X picture set 6.

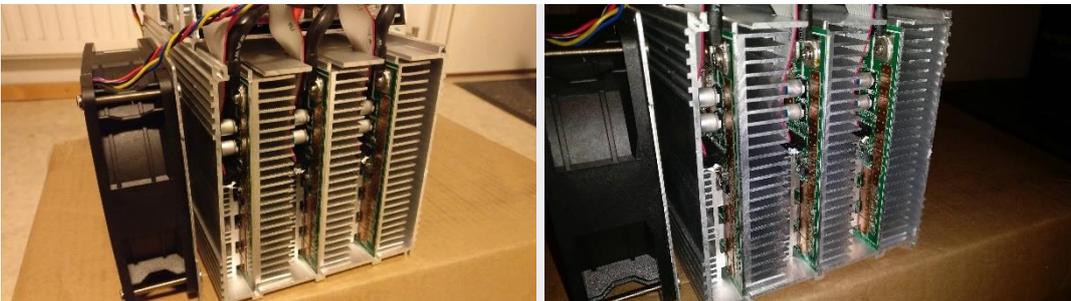


Figure 11 WhatsMiner M3X picture set 7.

Here is also an additional set of pictures taken by the Team Pangolinminer.



Figure 12 WhatsMiner M3X picture set 8.



Figure 13 WhatsMiner M3X picture set 9.



Figure 14 WhatsMiner M3X picture set 10.

4. Installation

The installation process is done in most simple way as possible.

Since there is now a built-in power supply unit, you don't have to install the power supply yourself.

You need to connect the Ethernet cable to your miner and the other end to the router or switch device.

And then you need a good quality C13 power cord which fits into your electrical power socket.

Please make sure that it is able to handle the over 2kW power load '24/7/365'.

The miner network settings is to the DHCP mode as default and it will acquire an IP address automatically.

You can find out the IP address fairly easy by accessing your router configuration page IP address list or by using a specific tool program for it.

Team Pangolinminer also offers an official IP found program called "WhatsMinerTool" at their website.

This way you can use the miner's IP found function and figure out the miner IP address.

WhatsMinerTool User Guide & Software:

<https://drive.google.com/open?id=1XthbZPFc0S-FvMi9MqpLOJlUaFAC4auW>

Knowing the miner IP address makes the next **Configuration** chapter possible.

If you want, you can also follow these tutorial videos for more help.

WhatsMiner M3X introduction video

<https://www.youtube.com/watch?v=86govBilEAO>

WhatsMiner M3 tutorial video

<https://www.youtube.com/watch?v=e-Cj3QckFnI>

You can also find support documentation and other downloadable material at the Team Pangolinminer website.

Whatsminer M3 User Guides & Solutions

<https://pangolinminer.zendesk.com/hc/en-us/articles/360001263394-Whatsminer-M3-User-Guides-Solutions>

5. Configuration

First you need to go the miner IP address with your web browser.
Then you login to the configuration page.
Username is **root** and the password is **root** by default.

You can click these pictures individually to show a high resolution version of the picture located in a [Imgur.com](#) picture album.

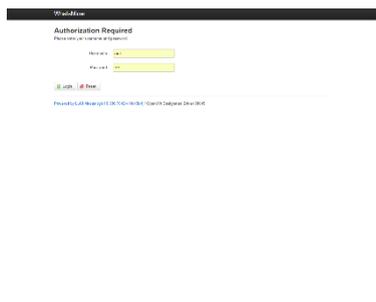


Figure 15 Login screen.

If your miner default language is set to Chinese, you can easily change it to English.



Figure 16 Setting the language at system properties page.

Now it is time to setup mining pool settings.
Go through menus and find the Cgminer configuration page.
Click the drop down list and you are able to setup a custom pool address of your choice.
You can set this miner to mine any SHA-256d algorithm based cryptocurrency in any mining pool of your choice.

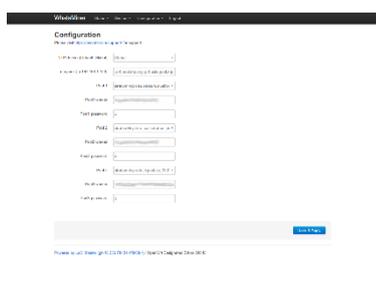


Figure 17 Cgminer configuration page.

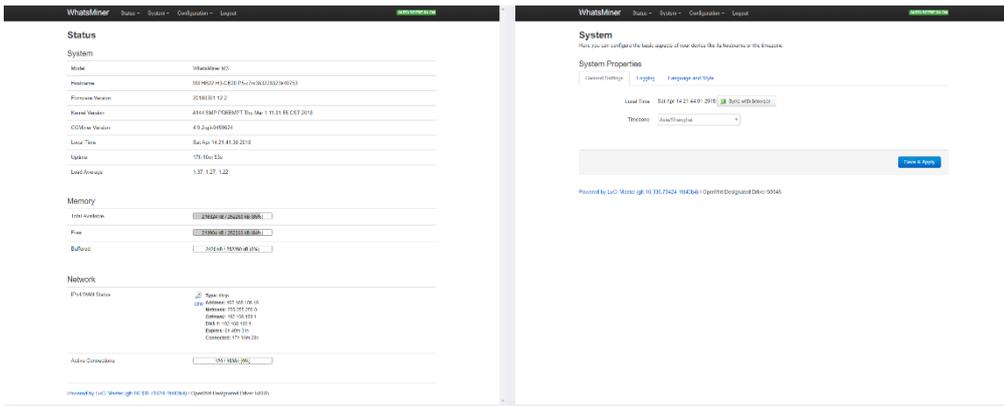


Figure 20 System information and System properties.

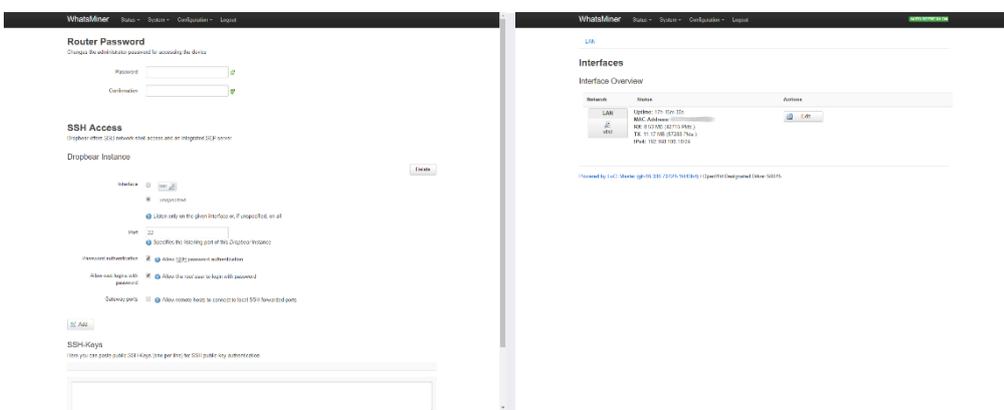


Figure 21 Administration page and Interfaces page.

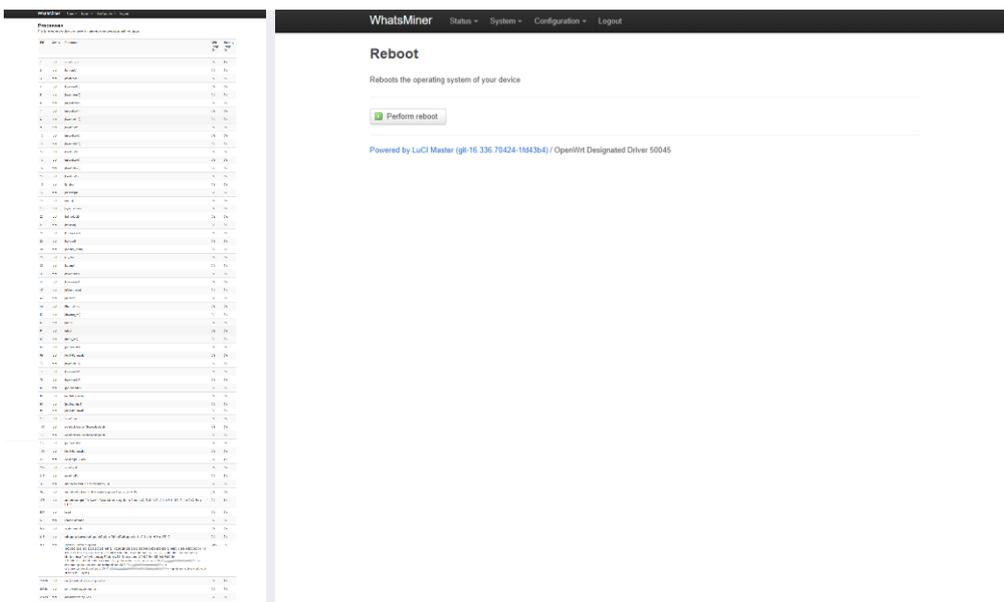


Figure 22 Processes page and Reboot page.

6. Performance test

When all the settings were set properly, it was time to test the miner.

After the miner was ready with the startup process, the hash rate rose quickly to about 12.0 Th/s and stayed at that level.

Here is the miner status page view after 16 hours of mining.

The screenshot shows the CGMiner status page with the following data:

Device	Device	Power	Temp	Speed	Temp	Temp	Temp	Temp	Temp
GPU 0	GPU 0	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
GPU 1	GPU 1	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
GPU 2	GPU 2	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00

Additional metrics shown include:

- Hash rate: 12.0 Th/s
- Power: 120.00 W
- Temperature: 40.00 C

Figure 23 Miner status page.

As usual, the power measurement was done with Perel E305EM6-G energy meter.

Technical specs data sheet (.pdf document):

<https://www.perel.eu/downloads/22/e305em6e305em6ggbnlfresdptpl.pdf>



Figure 24 Perel E305EM6-G.



Figure 25 Power measurement.

A stable result for the power consumption at wall was 2323 W, when the average hash rate after 16 hours of mining was 12.04 Th/s.

With these results we can calculate the power efficiency **at wall**.

$$2323 / 12040 = 0.1929 \text{ J per Gh/s}$$

7. Conclusion

WhatsMiner M3X is a nice piece of gear in the current Bitcoin ASIC miner hardware market and their miner design ideas are very competitive with rest of the current generation competitor miners.

The power consumption is quite high and using the 28nm process node technology it is not able to achieve as good power efficiency numbers as competitors.

I believe that this could be a different story, if they would had a 16nm or smaller process node tech available.

The miner price per hash rate is quite competitive at the moment when you compare it with the market prices.

This machine performed just as advertised, I got 12.04 Th/s hash rate and the nominal rate is between 12.0 and 13.0 Th/s.

Power consumption is high up in the 2kW area, but cooling design does its job properly.

There are big sized heat sinks with high rev cooling fans and the miner doesn't get too hot in normal operating conditions.

This is a very loud miner as most of the modern ASIC miners are, you don't want this in your bed room.

All in all I think that this miner is a nice small upgrade compared to the previous M3 model and I'm looking forward to see what WhatsMiner has to offer in the future!

I would like to thank Team Pangolinminer and especially Laurent big time for giving this miner as a sample unit

and for the chance for me to give a review for it here at the forum.

If you got any questions you'd like to ask, feel free to drop them in the [Bitcointalk.org](https://bitcointalk.org) forum thread. I will try to give my best answer.

8. How to order

You can make an order simply by visiting the webshop.
See more details at the official overseas distribution arm **Team Pangolinminer** website.

Team Pangolinminer
www.pangolinminer.com