whatsminer M21

WhatsMiner M21 Operation Guide（Simplified Version)V1.0

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Catalog

1. Introduction of M21 Integrated Machine

WhatsMiner M21 integrated machine

     Blockchain Server Artifact

     Product ParameterIntroduction as below：

HashRate：28TH/s ±5%

Power：1680W±10%

Power Rate：60W/T

Power Supply：WhatsMiner Power Supply P5（220V,2200W ±10%）

Environment Temperature：-5℃~40℃

Product Size：380mm*130mm*220mm

2.Mine wiring, safety warning for operation on the shelf

2.1.Matters needing attention in connection of Mine Machine

Mine machine 12V power line, power supply control line, fan line must be

2.1.1.Points for attention in connection of Control Panel 12V Power Line

When connecting the power cord of the control board, the plug of the power cord and the clasp at the two ends of the power outlet of the control board must correspond to each other, and the plug of the power cord cannot be inserted into the control board socket by force. If backplugged, power on could burn down the control board and burn out the signal wiring

Correct connection of power cord plugs and sockets:
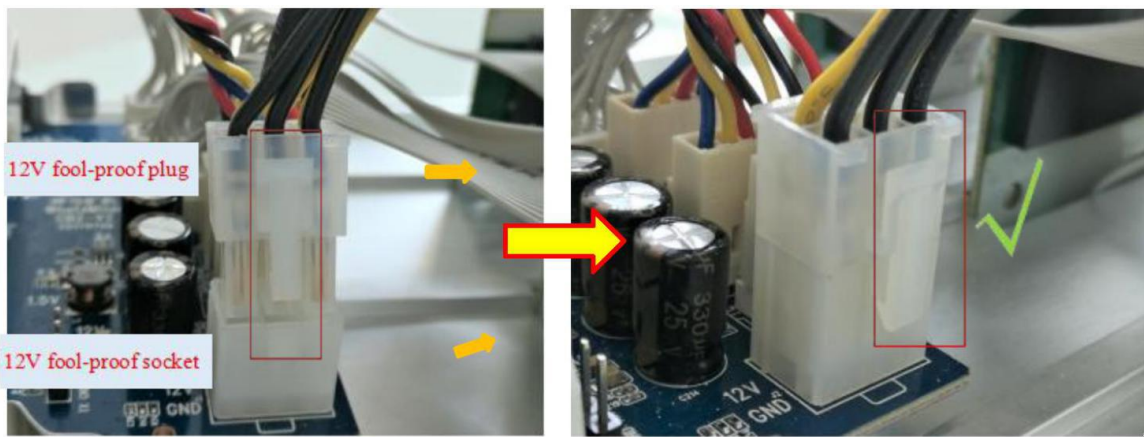
Wrong connection of power cord plugs and sockets:
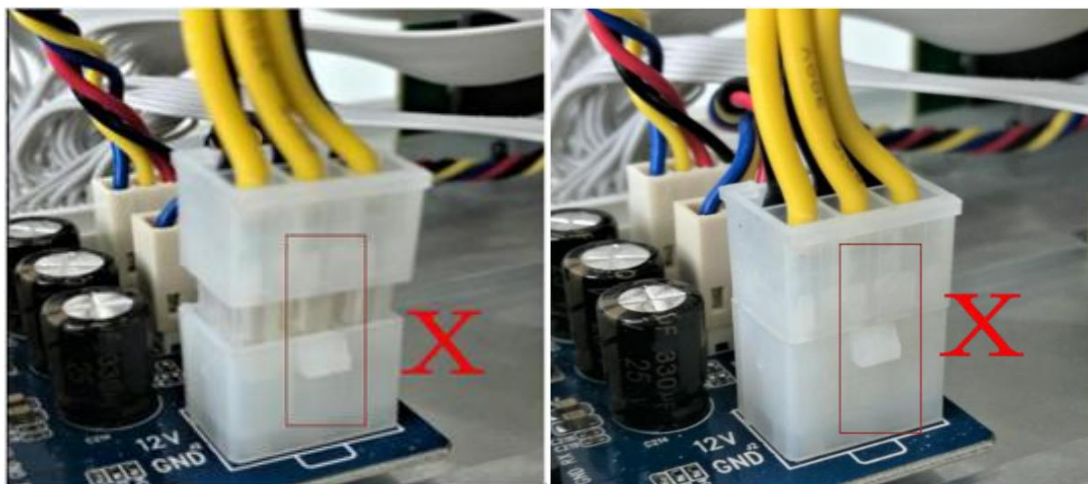
2.1.2.Matters needing attention in connection of Power supply Control Line

The power supply control line is 3pin red, black and yellow wire, 3 small ports face out, the slot is inserted relative bit:
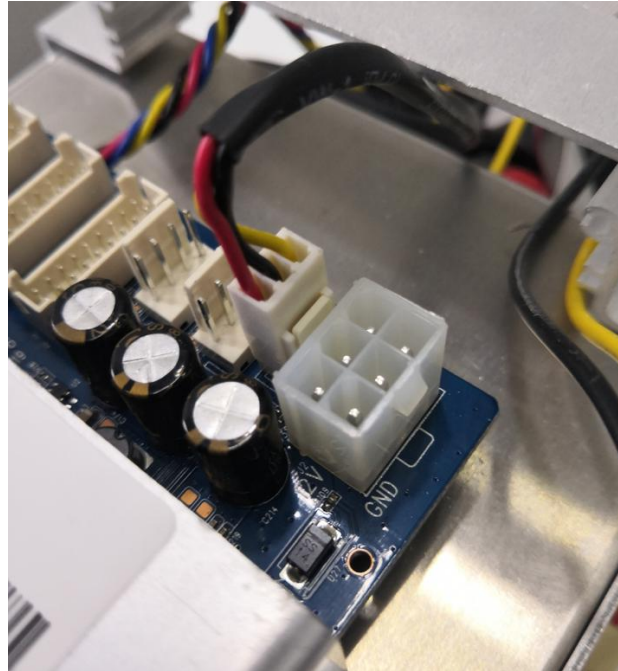
2.1.3.Matters needing attention in connection of Fan Line

Fan line is 4pin blue, yellow and red black line, 4 small mouth outside, card slot relative bit insert:
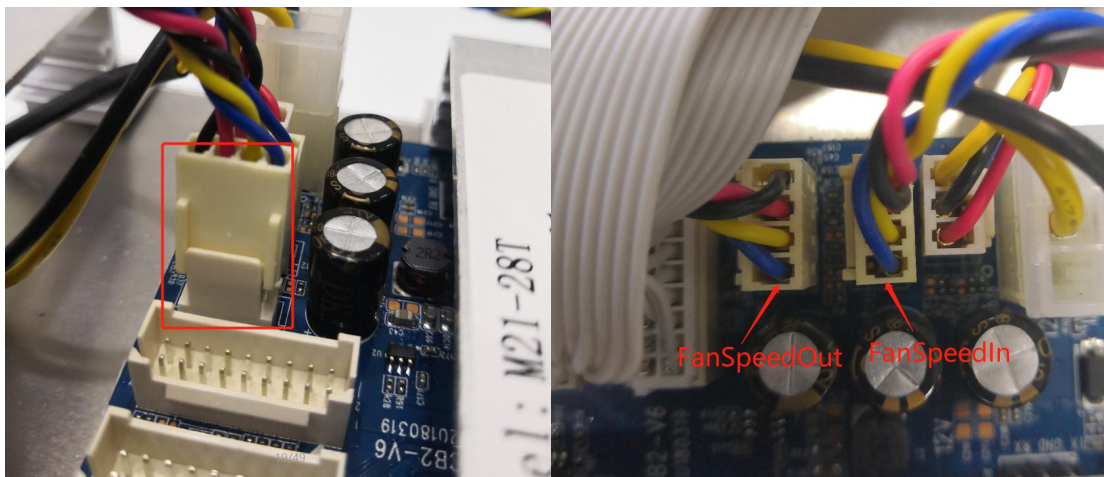
2.1.4.Matters needing attention in data wiring connection of Force Plate
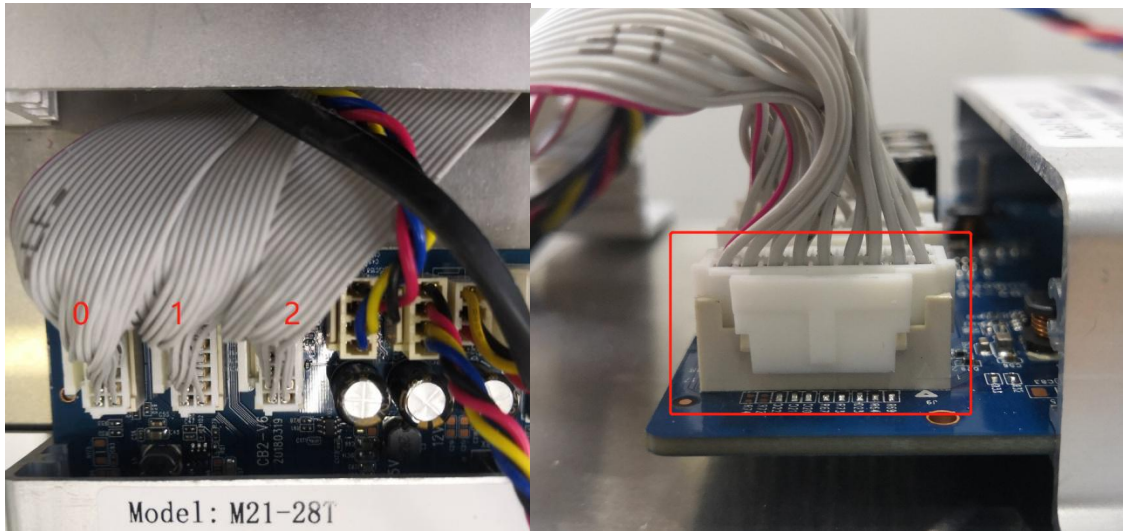
2.1.5.Matters needing attention in connection of 12V Power Line with Power Plate

When connecting the power cord of the force board, the power cord connecting post and terminal must correspond to each other (yellow power cord is connected to the red cable, and the red pole is connected to the positive pole (V);). The black power cord is connected to the black pole, and the black pole is connected to the negative pole (V-), which is tightened with screws. If the connection is reversed, the power supply may burn down the machine.

Correct connection method of power cord connecting post and terminal:
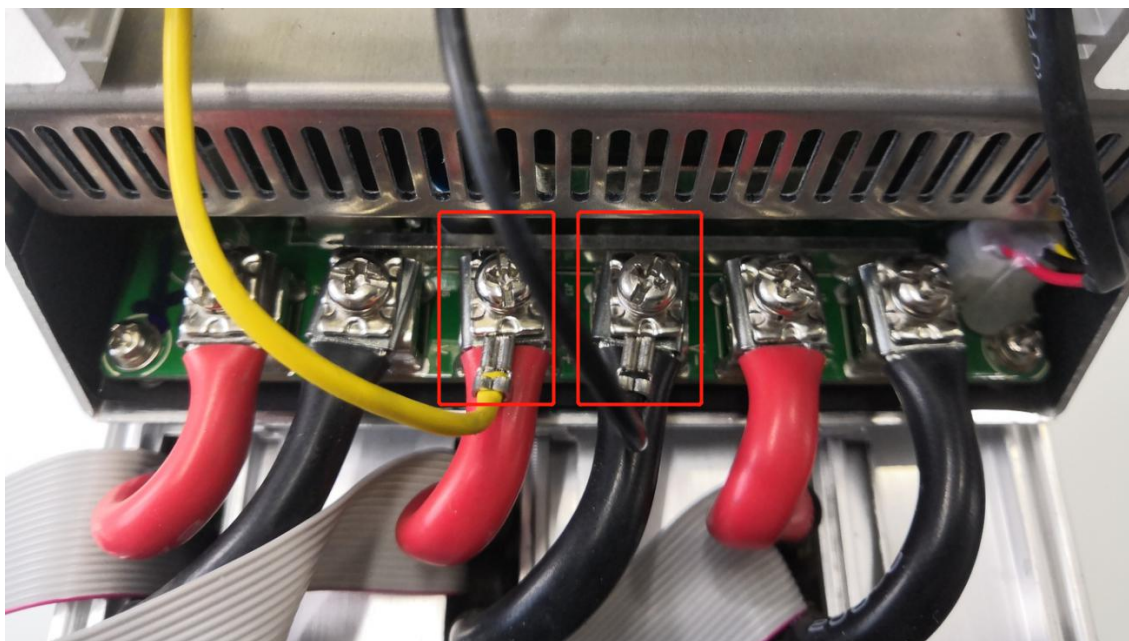
2.1.6.Machine wiring inspection

After all mine connections are connected, check again to confirm that the connection is correct.

2.2.Mining machine handling, on the shelf operation points for attention

In the process of ore machine handling and loading, data wire arrangement, power control line, fan wire are strictly prohibited as lifting handle, lifting machine and power supply. By connecting the teena machine and the power supply, the connection will be damaged, the connection will be loosened, and the control board will be physically damaged over the carrying capacity. The resulting hardware damage and failure will not belong to the scope of warranty!

3. Mine machine configuration environment preparation

3.1.Mine machine configuration equipment list

#	Tool	Numb	Use	Remark
1	Computer	1pc	Miner configuration	
2	Miner Power Supply	1pc	Power the miner	
3	Switch	1pc	Configuring miner and configuration computer network communication	The switch can connect to the Internet.
4	DHCP/NTP Server/Router	1pc	1、 Provide a dynamic IP address for the initial power up of the miner 2、 Provide NTP network time for miner	It defaults to DHCP to obtain a dynamic IP address when the miner leaves the factory.

3.2.Mining machine network environment
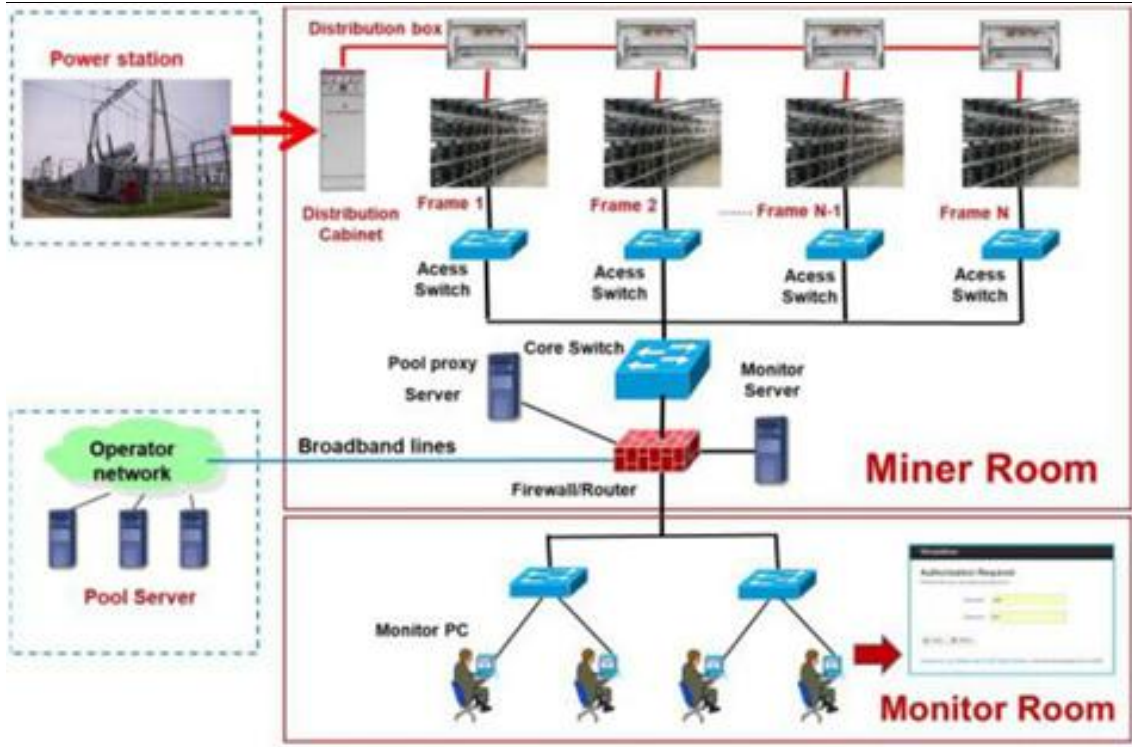
By default, DHCP acquires dynamic ip, by default, so DHCP servers must be configured in the mine network, or the dhcp dynamic ip address service must be turned on by the router. The running time of mine machine and the correctness of calculation force statistics depend on the network ntp time. By default, the mine machine has multiple ntp server addresses of public network. In order to speed up the speed of obtaining network time by ntp and improve the time precision, It is recommended that a local ntp server be configured in the mine network.

4.Mine machine connection and check before power on

(1) Before connection and electrification, the miner shakes the mine machine in accordance with the warning signs on the side of the mine machine to check whether any radiator or other device is off, to ensure that there is no radiator or other period of abscission before connection and power up.
(2) The mine machine is connected to the power cord, the network port is connected to the switch, the control line of the power supply is connected to the I2C socket of the control board, and the signal wiring, the power control line and the fan control line are checked, so as to ensure that the connection is correct, In order to power the mine.

Note:
(1) 12V power cord connection post and terminal, control board power cord socket outlet corresponding to ensure the correct connection of the power source positive and negative pole, otherwise the power line positive and negative pole connection, it is possible to burn the power board, control board or power supply, Hardware damage due to power cord connection is not covered by warranty.
(2) The power supply control line must be connected between the control board and the power supply, otherwise, the problem of low calculation force may be caused by the failure to control the output of the power supply voltage. (3) the control panel must be reliably connected with the fan line. If the fan line falls off or the connection is bad, it may cause the miner to be unable to cool down, and the load plate can be operated at lower frequency. In 2003, the calculation power decreased.

5.Mine data configuration (configured on the web page)

5.1.Query dynamic ip address obtained by mining machine
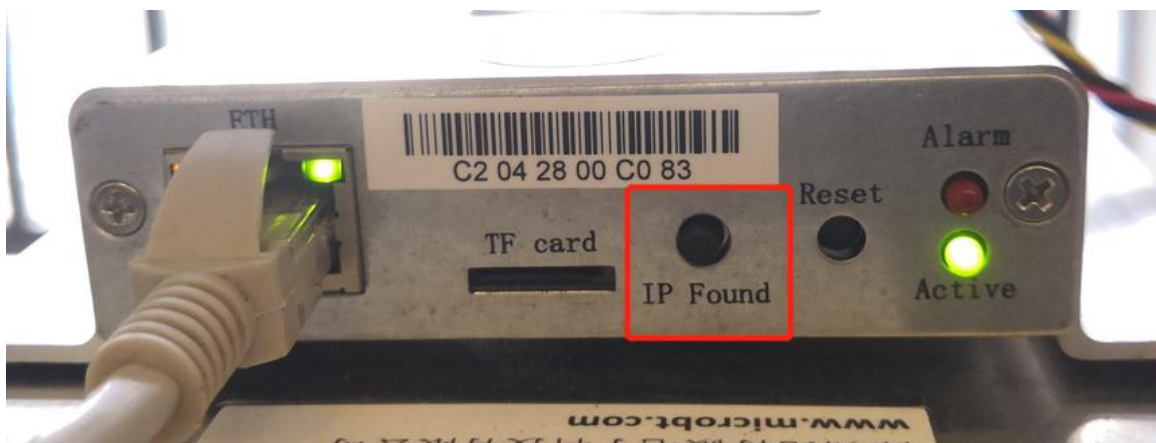
5.1.1.Running WhatsMinerTools Software

The data of mine machine is configured with PC connected to the same network where the miner is located, running the WhatsMinerTools software on PC, selecting the "probe ip" tab, setting the room number, rack number, layer number on the rack, and position number of the layer in which the mine machine is located. Click start。
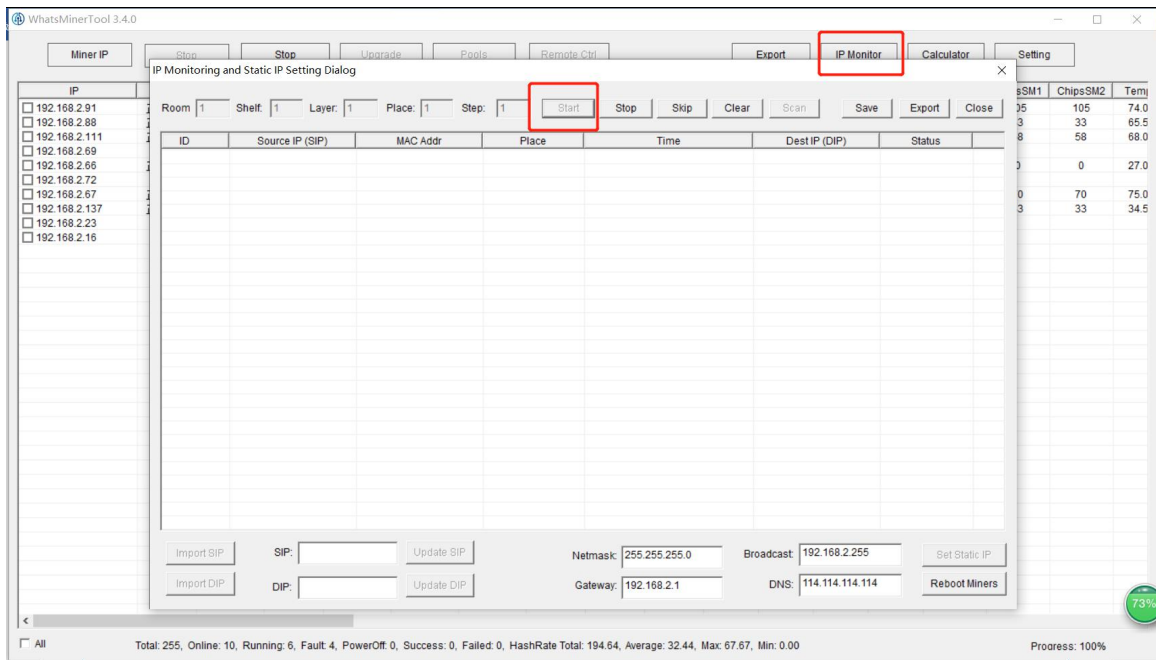
5.1.2.Query the ip address reported by the mine machine

The main results are as follows: (1) after 30 s, the yellow light and green light of the net are always on and the green light twinkles under normal conditions. When the IPFOUND function button (prominent long button) is pressed on the panel of the mine machine control board, the two LED indicator lights on the right flicker several times, indicating that the mine machine has broadcast the IP and MAC addresses of the mine machine to the network.

（2）In the WhatsMinerTools software to view the dynamic access to the mine machine reported IP,MAC address, mining machine location.
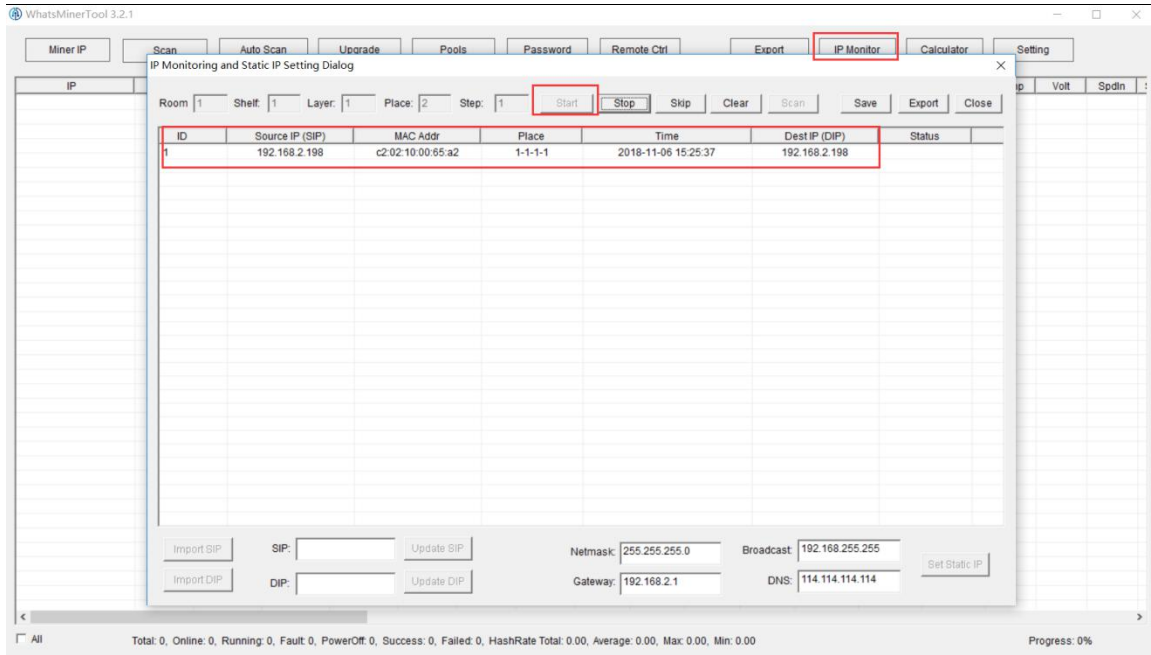
Notes：

（1）If all the lights on the panel of the machine control panel are not lit after power-on, please check whether the power supply of the 220V power cable and the 16A power cable are reliable and the connection is correct.

（2）If the indicator on the right side of the panel of the machine control panel is on, but the network port is not lit, or the green light is not flashing, check whether the switch is normal, the network cable connection is reliable, and the quality of the network cable is faulty.

（3）The computer and miner running the WhatsMinerTools software must be on the same network segment. Otherwise, the software may not receive the broadcast message from the machine, so that the ip address and mac address information reported by the machine ipfound button cannot be queried.

（4）If the computer and the mine machine are on the same network segment, and the DHCP service is enabled in the network, after the mining machine ipfound button, WhatsMinerTools software does not query the IP of the machine, long press the reset button on the machine panel for more than 5s to recover Factory default configuration, then power off the mine machine and then power on and restart, power on 30s and then press the ipfound button to detect the mine IP address.

（5）If the computer is running WhatsMinerTools software, click "Start", without manually pressing the ipfound button, the software automatically finds the IP address and mac address of the machine. At this time, the ipfound button of the miner may be stuck by the panel, find the software. Display the miner corresponding to the mac address (the mac address bar code is attached to the miner panel), power off the corresponding miner, and then re-install the control board to ensure that the control panel buttons and indicators are exposed to the mounting holes, and are not stuck.

5.2.Mine Pool & Miner data and configuration NTP Server address

5.2.1.Mine Pool & miner disposition

(1) After logging in, go to the Cgminer configuration page.

(2) In the Cgminer configuration interface, modify mine pool address, miner name, and after modification, click "Save & Application" in the lower right corner to save the modified configuration.

　　（2）After the mine pool configuration is modified, the modified configuration must restart the cgminer program or the control panel before the modified configuration can take effect.

　　（3）Restart cgminer, to check that configuration changes take effect. In the mine machine interface, select: Status- > CGMinerStatus, into the CGMiner running state interface.
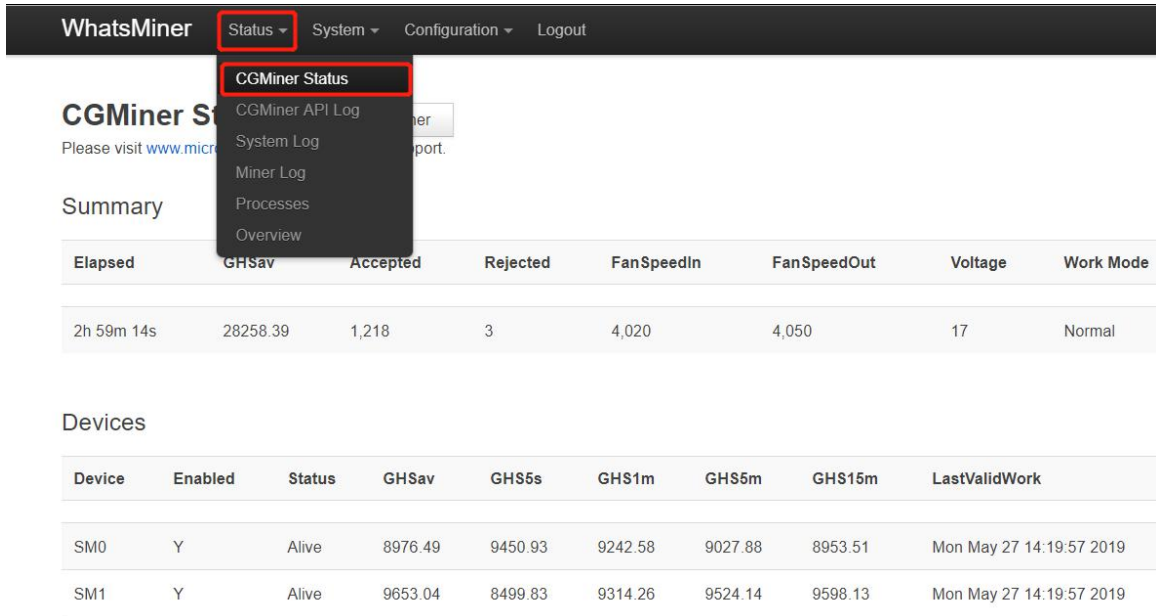
In the cgminer status interface, click RestartCGMiner to restart the cgminer process.
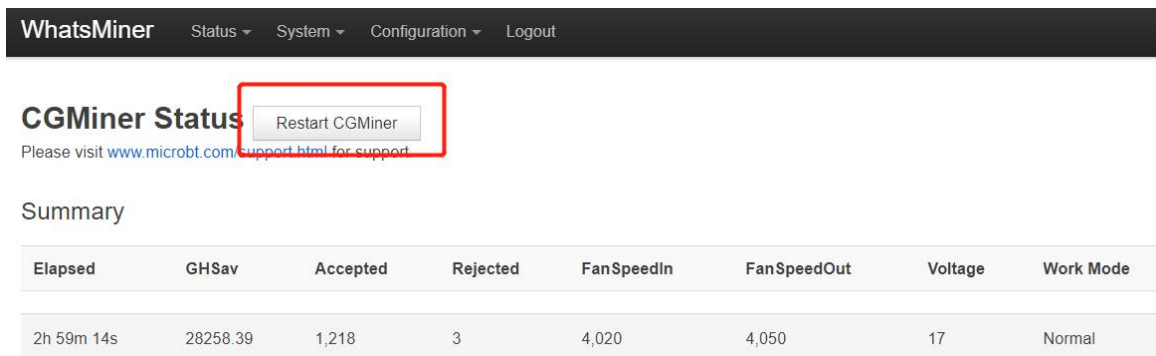
(4) Restart the control panel and check whether the configuration changes are effective. (if you do not choose to restart cgminer, configuration changes saved, you can also restart the control panel, so that the configuration takes effect) in the system interface, click "Reboot".

In the restart screen, click Perform reboot for restart confirmation.

After restarting about half a minute, the mine machine system will automatically jump to the login interface.
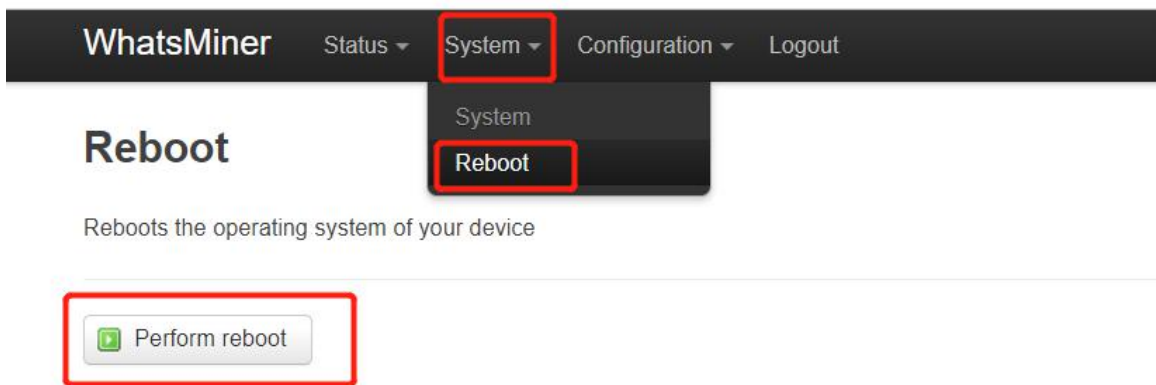
5.2.2.Modify the address of the ntp synchronization server (optional)

（1）After logging in, select System->>System Configuration in the interface to enter the Cgminer configuration page.
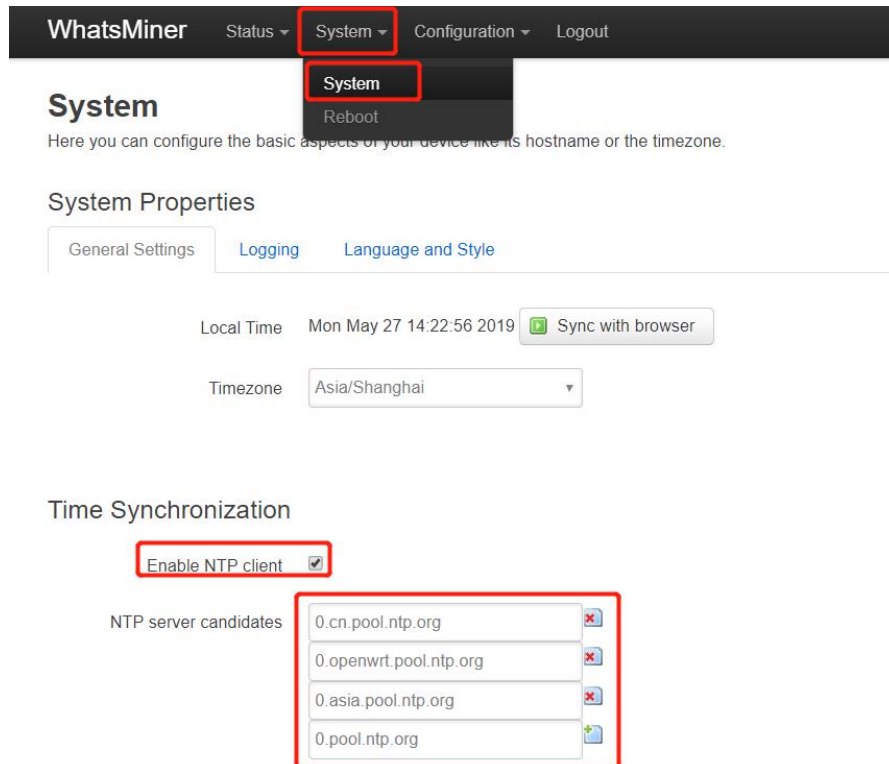
（2）In the cgminer configuration interface, add or modify the NTP server address. The miner has been configured with four NTP server addresses by default. You can modify or add the NTP server address to the local NTP server address according to the mine situation.

（3）After modifying the NTP server address, click "Save & Apply" in the lower right corner.

5.3. Configure mine machine static IP address (optional)

The IP address obtained by mine machine DHCP is modified to static IP address of mine operation network planning.
(1) Input the queried mining machine dynamic ip, in the browser with admin user, default password: admin, login mine machine interface.
(2) After logging into the mine machine, select: Configuration- > Interfaces, to enter the configuration interface of the network interface in the mine machine interface.

(3) In the "Configuration" interface, click "Edit"

(4) In the interface modification interface, the protocol (protocol) selects "Static address" and then clicks "Switch protocol".

(5) In the static address configuration interface, the IP address, mask, gateway, broadcast address and DNS address are changed to the actual planned address of the mine. Click "Save & Apply" in the lower right corner after modification.

After saving the application, you need to re-use the newly set static IP address to log in to the mine machine (otherwise, the page appears loaded until the load fails).

5.4. English and Chinese language switching of Mining Machine Page

6.Mine machine running condition check

After the ore machine is connected to the running network, log in the mine machine and check the running state of the mine machine.

(1) In the mine machine interface, choose: Status- > CGMiner Status, to enter the cgminer running state interface.

(2) Check the whole calculation force of mine machine, the speed of fan before and after, connect mine pool, single board calculation force, single board temperature and so on.

Elapsed	GHSav	Accepted	Rejected	FanSpeedIn	FanSpeedOut	Voltage	Work Mode
13m 20s	28195.94	222	0	3,300	3,300	18	Normal

Devices

Device	Enabled	Status	GHSav	GHS5s	GHS1m	GHS5m	GHS15m	LastValidWork
SM0	Y	Alive	8812.65	9574.45	9161.68	8690.39	6700.86	Mon May 27 14:54:09 2019
SM1	Y	Alive	9671.38	10427.93	9874.03	9475.22	7448.88	Mon May 27 14:54:09 2019
SM2	Y	Alive	9708.47	10577.39	9957.80	9482.71	7313.18	Mon May 27 14:54:09 2019

Device	Frequency(avg)	UpfreqCompleted	EffectiveChips	Temperature
SM0	863	1	33	70.00
SM1	927	1	33	70.50
SM2	911	1	33	70.50

Pools

Pool	URL	Active	User	Status	Difficulty	GetWorks	Accepted	Rejected	Stale	LST	LSD
0	stratum+tcp://btc-vip-3dcoa7jxu.ss.poolin.com:443	true	microbtinit	Alive	65536	29	222	0	0	Mon May 27 14:53:44 2019	65536
1	stratum+tcp://stratum.bixin.com:3333	false	microbtinit	Alive	0	0	0	0	0	Never	0

Note:

(1) If the connection of the mine machine is correct and the network is normal, the frequency search test will begin automatically after the mining machine is powered on. The frequency search test phase will take about 15 minutes. After the frequency search is over, it will only enter the formal mining stage. What is shown here is the calculation force of normal operation. If the search frequency is not over, see the calculation force will be lower than the normal operation of the calculation force.

(2) If the temperature of the outlet is above 85 degrees and the speed of the fan is more than 6100 revolutions, the miner will run at a lower frequency and the calculating force will be lower than the normal one. Ventilation and cooling measures should be done to ensure the mine operation environment. The ambient temperature of the machine is below 40.

(3) If the fan line is not reliably connected to the control board, the corresponding fan rotation speed in the mine machine interface is 0, which leads to the excessive temperature of the mine machine, the reduction of the frequency of the force plate and the decrease of the calculating force.

(4) If the temperature is not detected in the state interface and the temperature is not detected, it is necessary to lower the electric power line of the mine machine and reinsert the power line of the corresponding force plate, and the two ends of the data wire arrangement (one end of the control board and one end of the force board) to ensure the reliability of the connection.

7.Batch data configuration, status check, firmware upgrade

You can use the WhatsMinerTool software to carry out batch data configuration, status check and firmware upgrade of the mining machine. For details, please refer to the "Whats Miner WhatsMinerTool Operation Guide".

# 8.Disassembly and installation of integrated machine

8.1. Disassembly and installation of Power supply

8.1.1.Power disassembly machine

1）Unplug three load board connections , two fan lines and one power line before removing the power supply. After drawing, as shown in the figure:
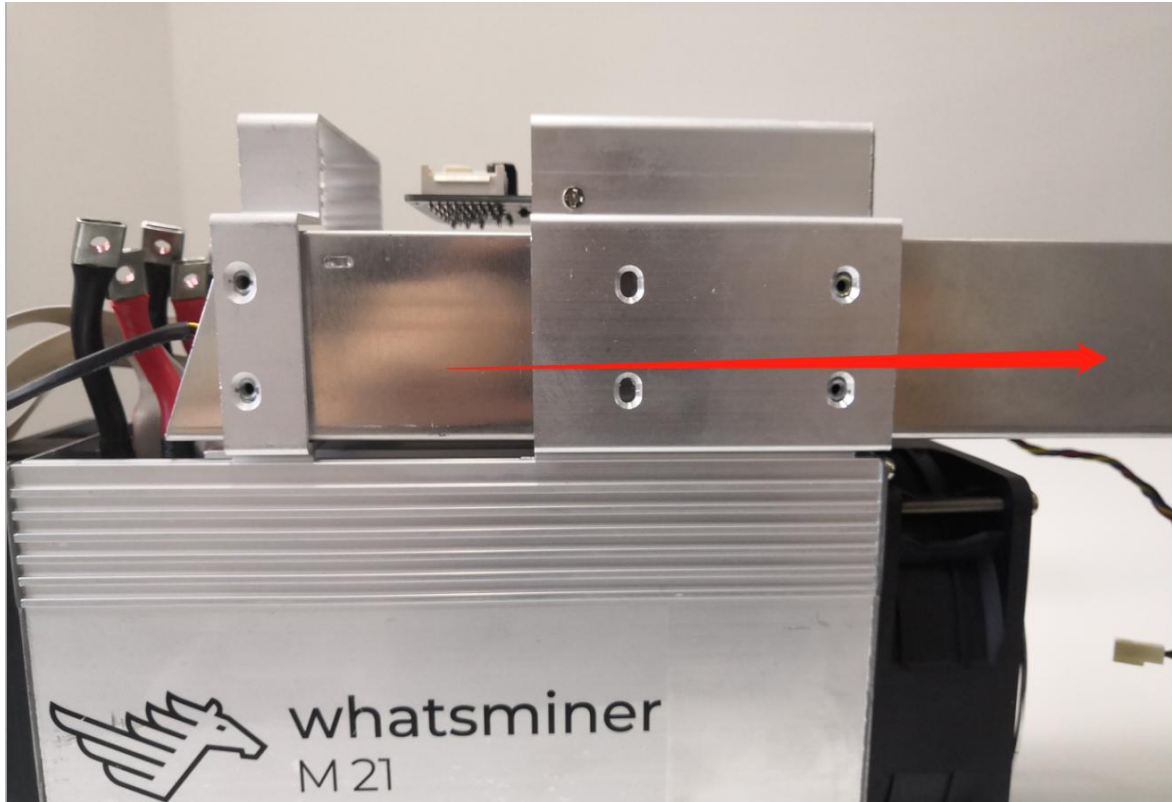
2) Separate load plate connection columns are removed (at the outlet side) in turn, as shown in thefigure:
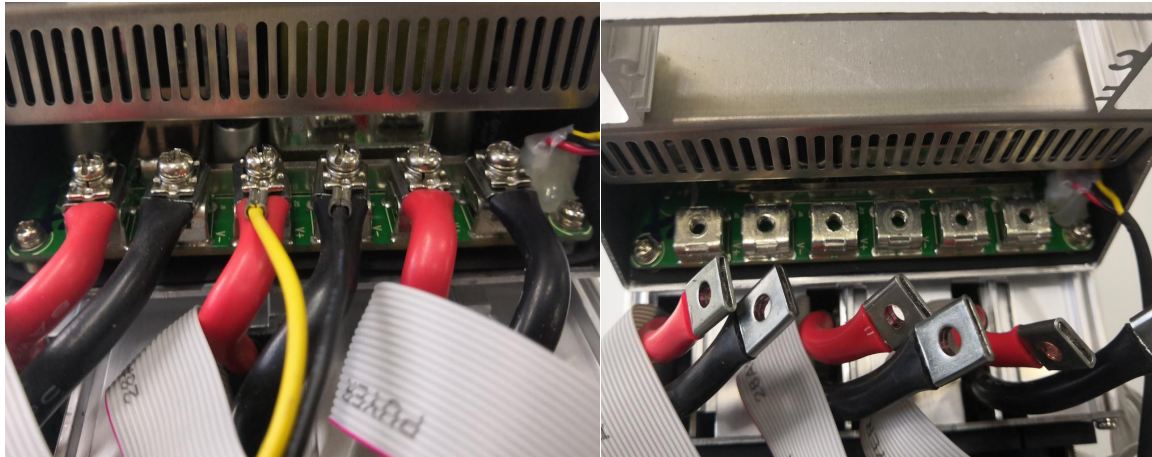
3) The third step is to remove the eight screws on both sides of the fixed power supply, as shown inthefigure:
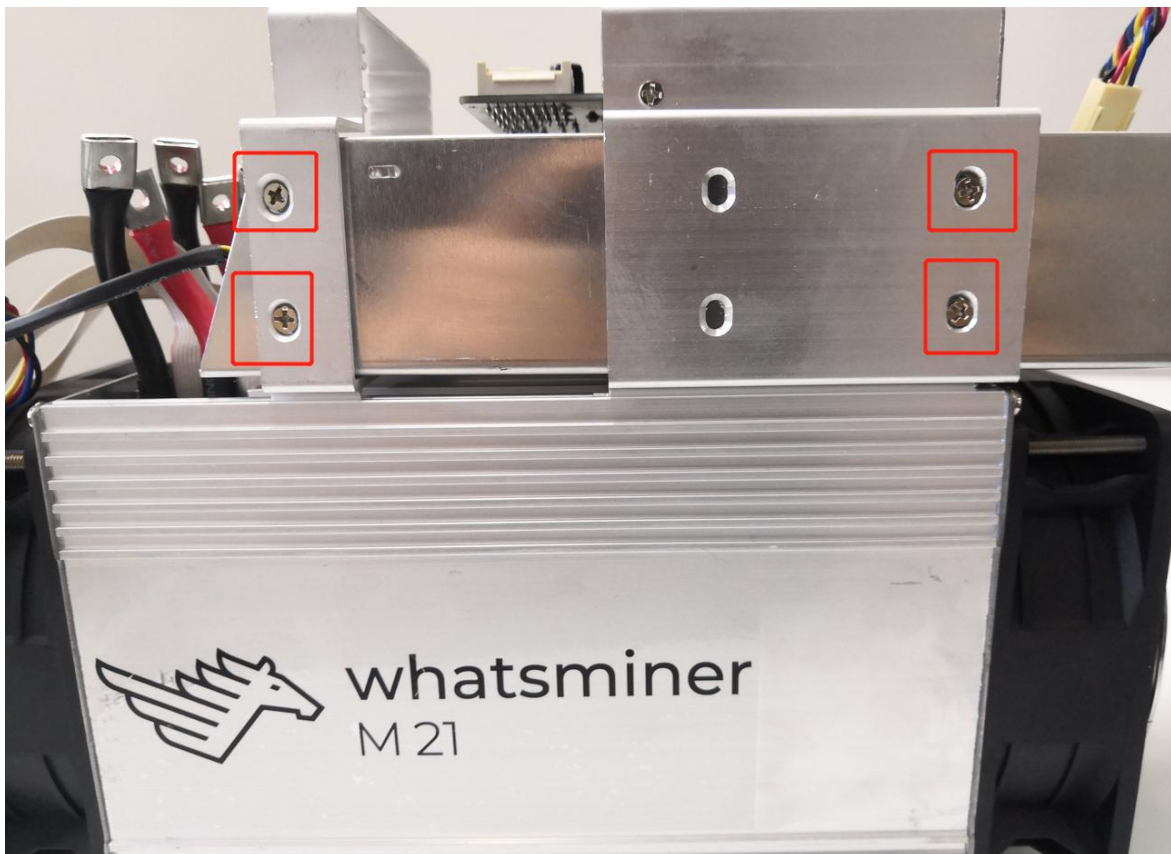
4）Pull out the power supply from left to right (note that the power cord is not broken), as shown in the figure:
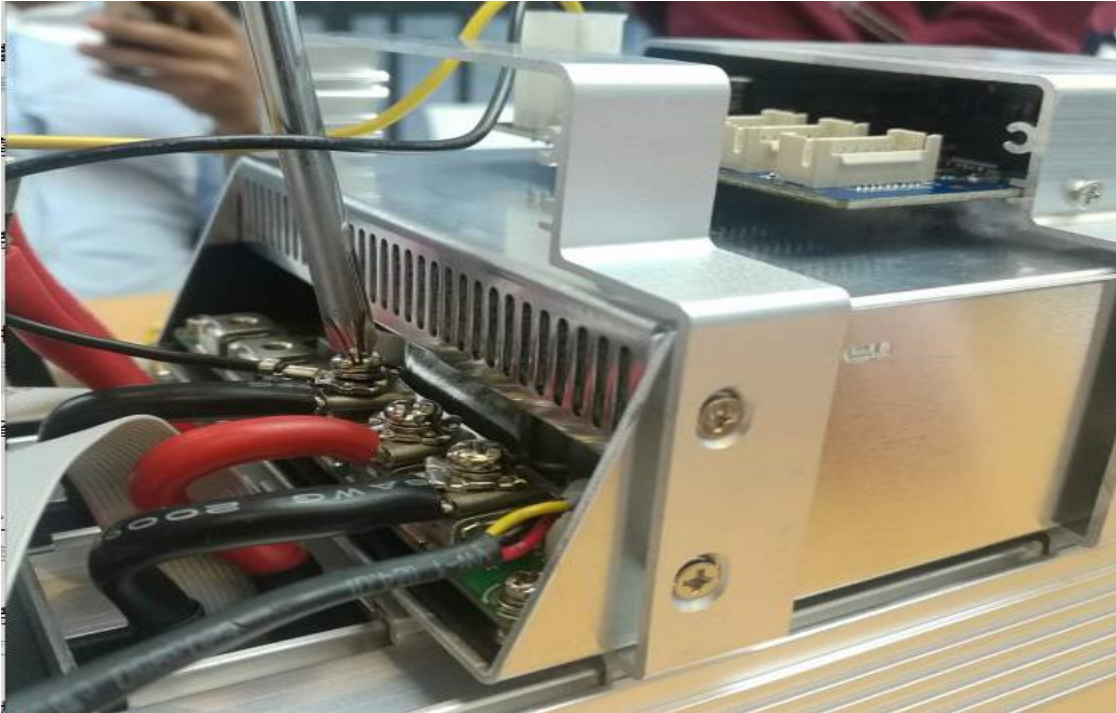

8.1.2.Installation of power supply

1）When installing the power supply, fix the 4 screws of the control panel cover bracket first, then adjust the position of the armrest support and then tighten the screw, as shown in figure:
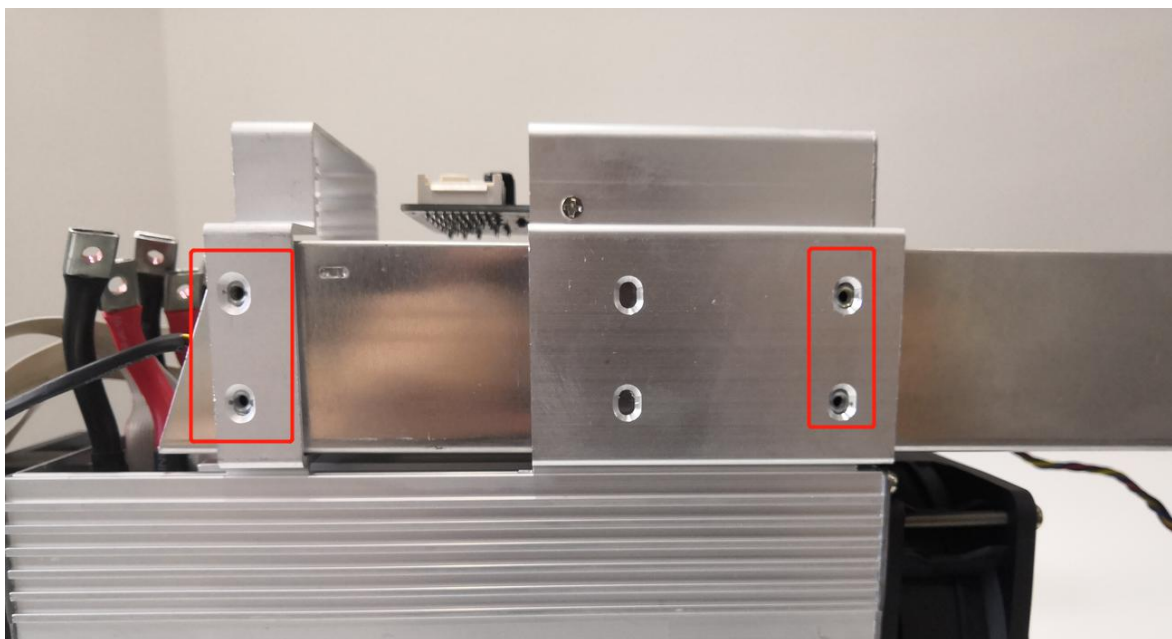
2）Make sure to tighten the screws when connecting the bar with the terminal, otherwise it will affect the calculation force, as shown in figure:
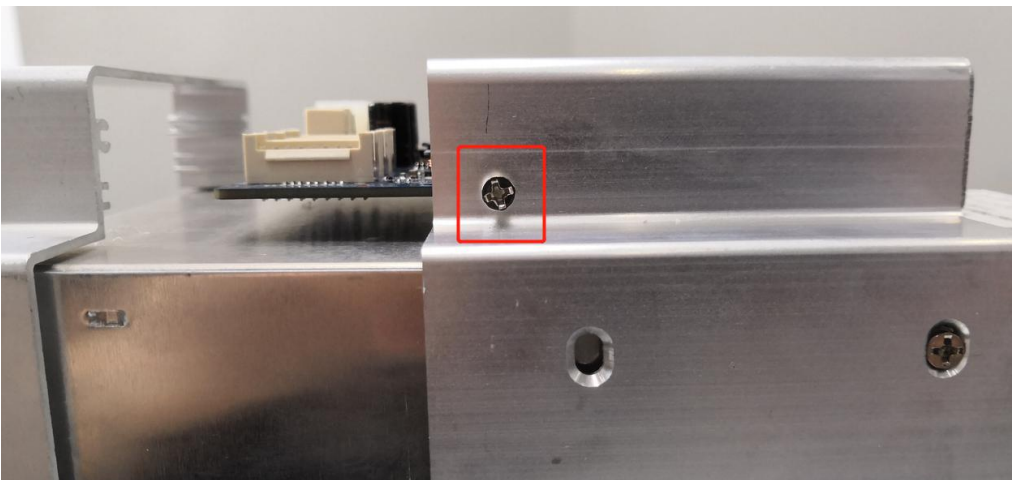

3）The control board of the line corresponding to plug-in, the power installation is complete.

8.2.Disassembly and installation of Control Panel

8.2.1.Disassembly of control panel

1）Remove the 2 screws of the fixed control and the 4 screws of the support of the fixed control plate respectively, as shown in the figure:

2）Then move the control board from front to back, through the handle, the control board can be removed.

8.2.2.Installation of control panel

The mounting direction of the control panel is arranged in reverse order according to the control board removal, and the screws are tightened accordingly to prevent the control board from loosening.

8.3.Disassembly and installation of Force Plate

8.3.1.Disassembly of force plate

1）There are three force plates on each machine, and the corresponding relationship between the control board and the control board is shown in the figure.:
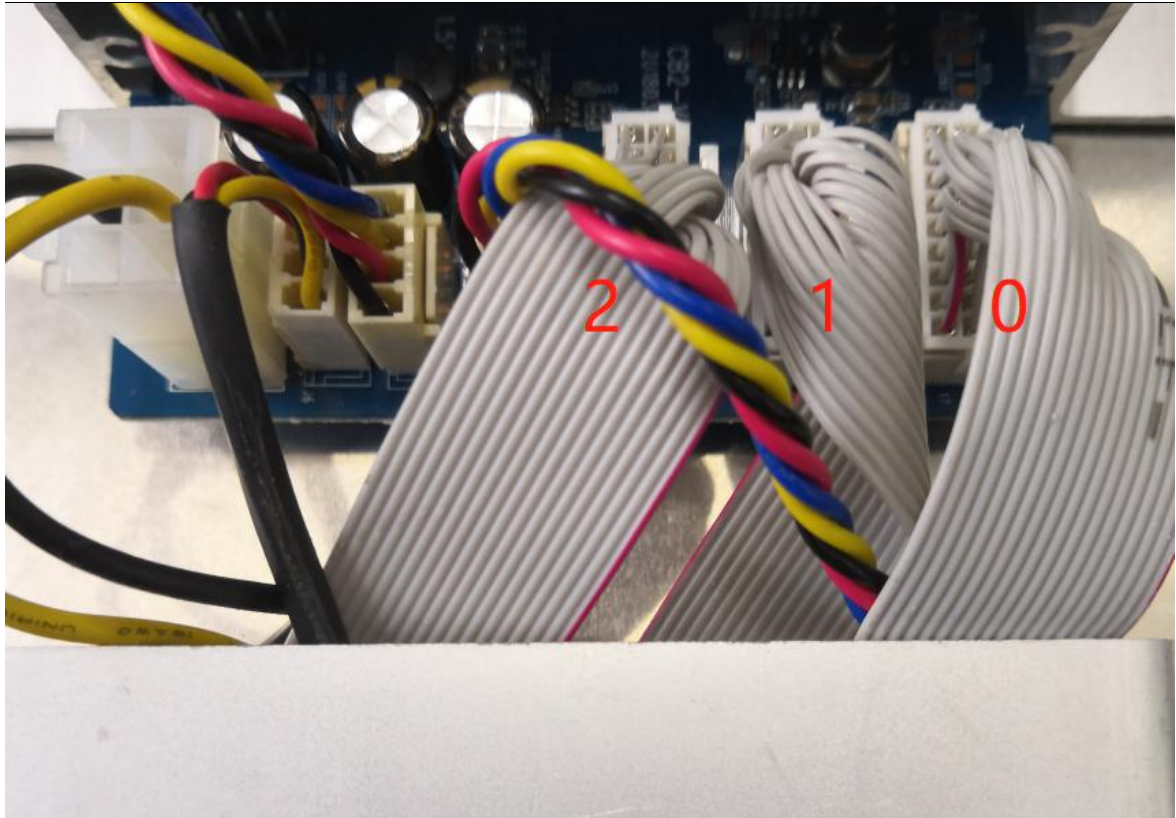
2）To remove the problematic force plate, the four baffle screws and the corresponding connecting posts for the fixed outlet fan need to be removed, as shown in the figure:

3）After the connection column corresponding to the fan and the force plate is removed, the faulty force plate is extracted, as shown in the figure:
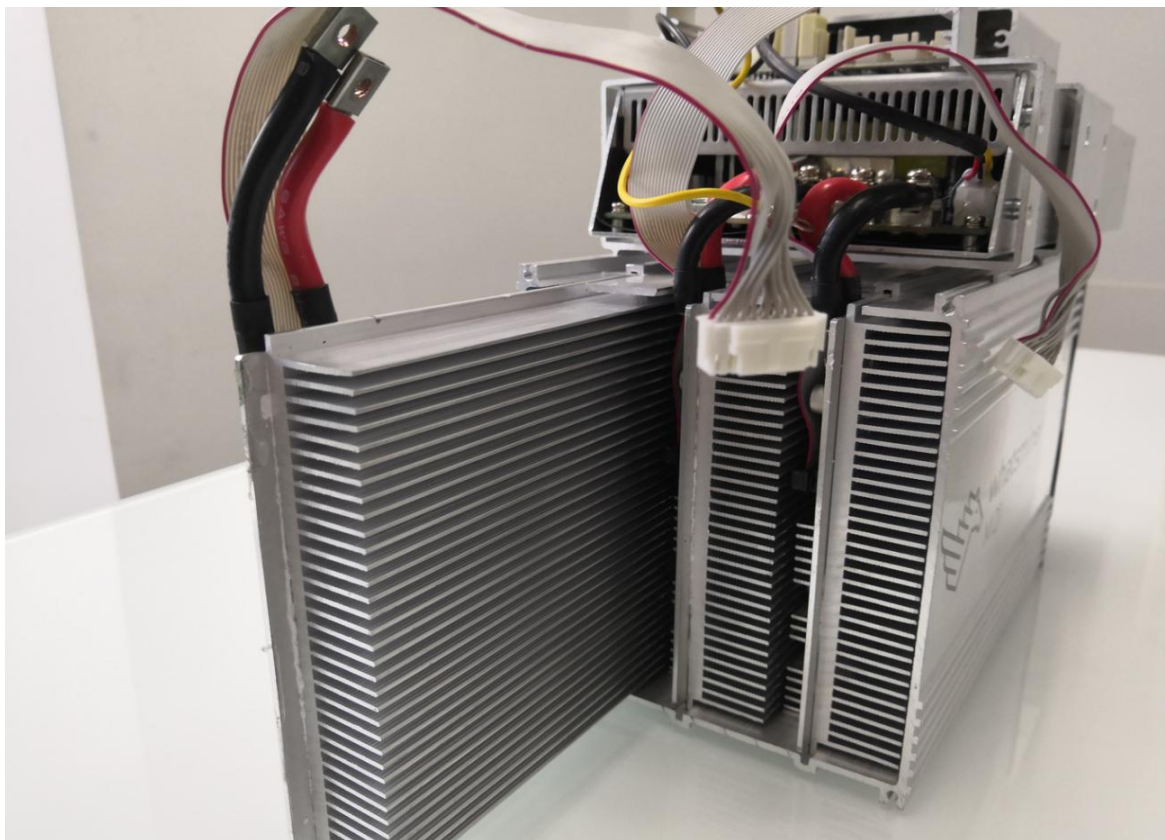

4）After taking out the hash board, record the serial number above or use WeChat "sweep" to scan the power board serial number and provide it to the relevant after-sales technician, as shown:

8.3.2.Installation of force plate

1）When the force plate is loaded into the chassis, one hand holds the force board into the force board slot, a portable starting force board connecting column and the force board connection line, and the sequence enters the chassis, as shown in figure:
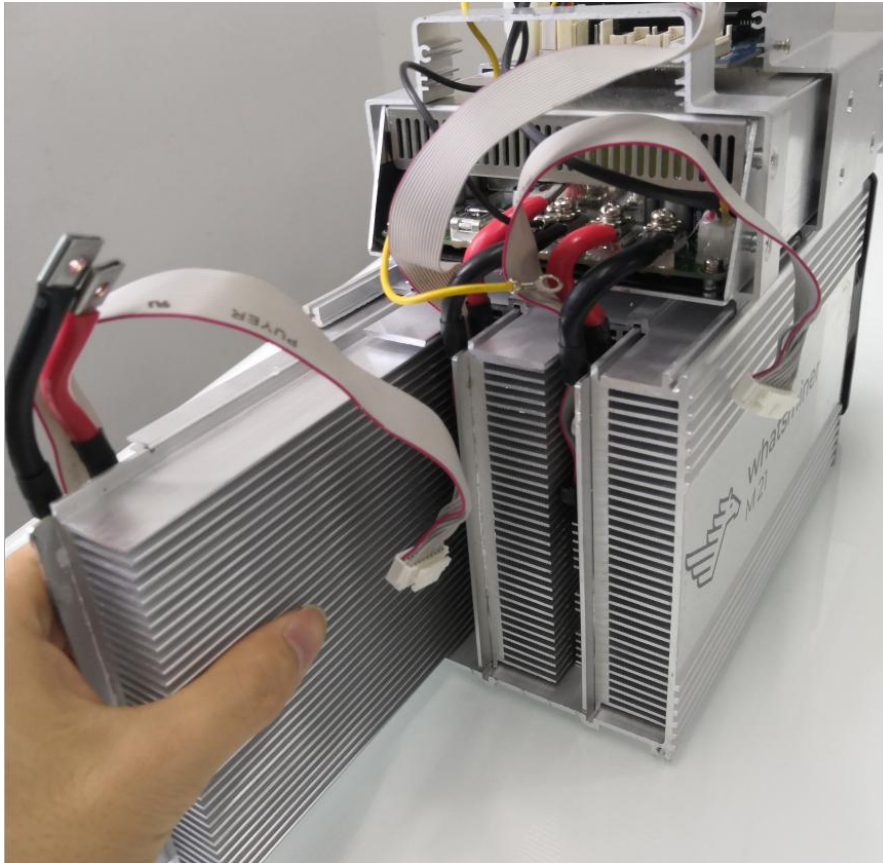
2）After the installation of the force plate, install the fan. When installing the fan, pay attention to the fan connection line on the right, be careful of the wrong direction, or you will need to reinstall, as shown in the figure: