![MicroBT logo]

whatsminer
M 21S

WhatsMiner M20S Operation Guide（Simplified Version)V1.0

MICROBT
比特微

Shenzhen MicroBT Electronics
Technology Co.,Ltd

Catalog

1. M10S Product Introduction

Whats Miner M20S

Blockchain Server Artifact

Product ParameterIntroduction as below：

HashRate：68TH/s ±5%

Power：3264W±10%

Power Rate：48W/T

Power Supply：WhatsMiner Power Supply P21（220,3500W±10%）

Environment Temperature：-5℃~40℃

Product Size：390mm*155mm*240mm

2.Whats Miner Connection and Racking Safety Notes

2.1.Miner Connection Notes

Check over the miner's power supply control wire and adapter board control wire and fan control wire to make sure connections are correct,the damage of control board、hash board、transfer board、fan, etc. caused by incorrect connection will

2.1.1.Power Supply Control Wire Connection Notes

The power control wire is 14pin, and the card slot is inserted relative:
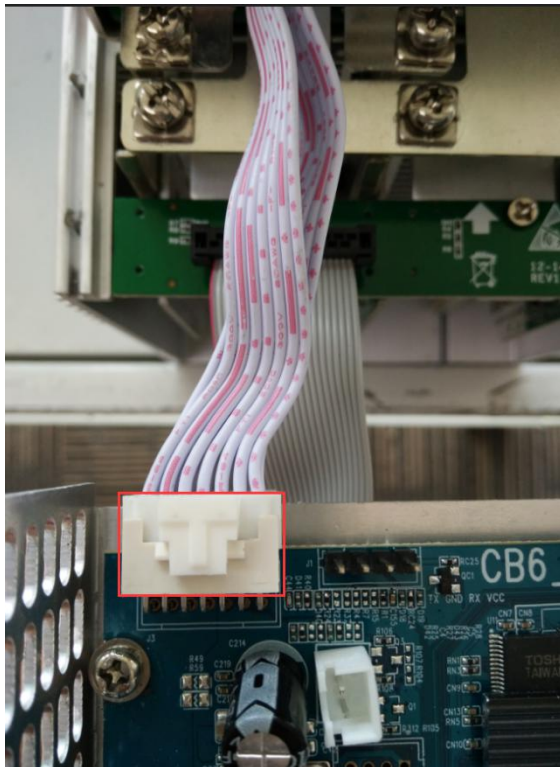
Correct Connection：   **Incorrect Connection：**
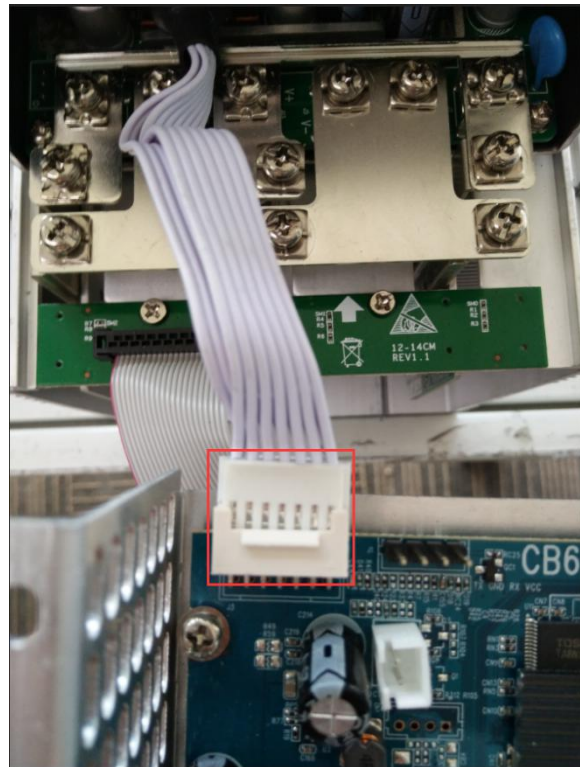
2.1.2.Adapter Board Control Wire Connection Notes

The adapter board control wire is 22pin, and the card slot is inserted relative:

Correct Connection：
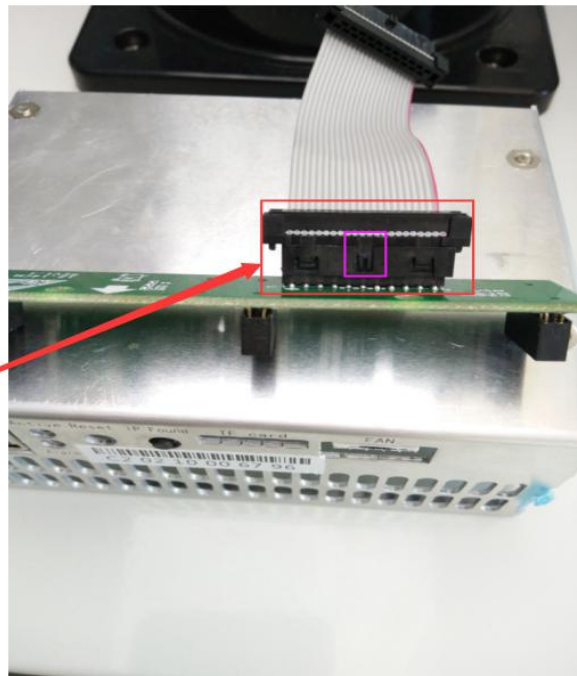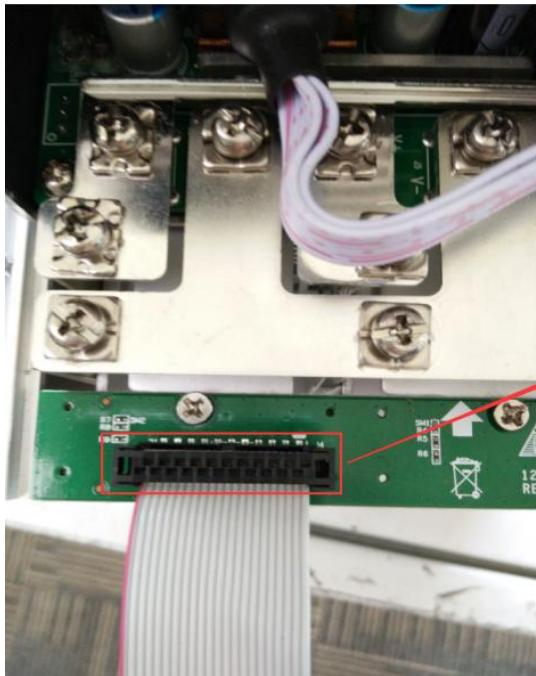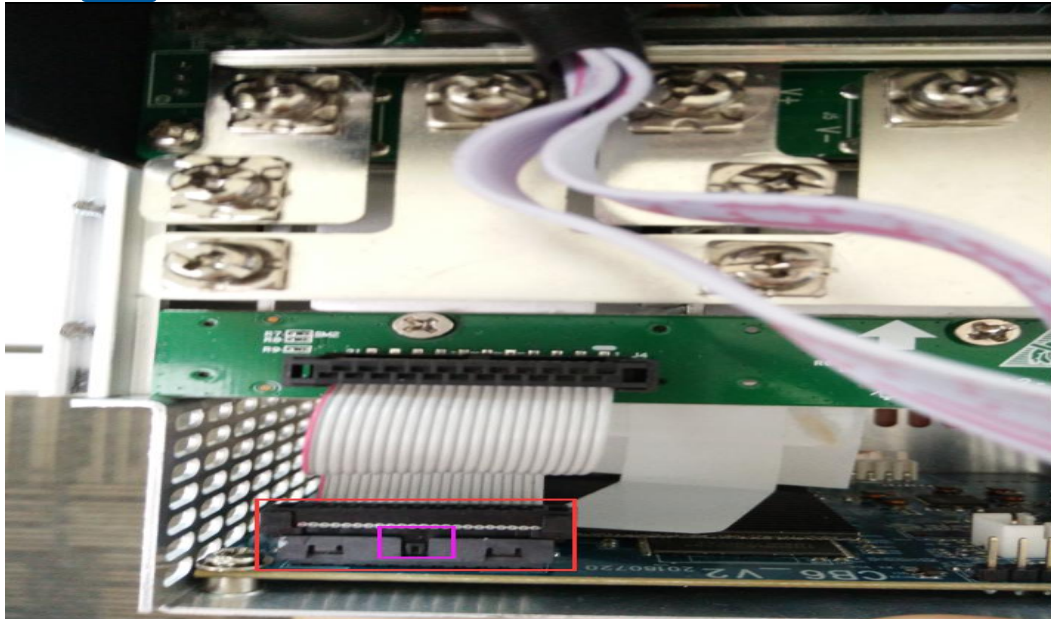
Incorrect Connection：
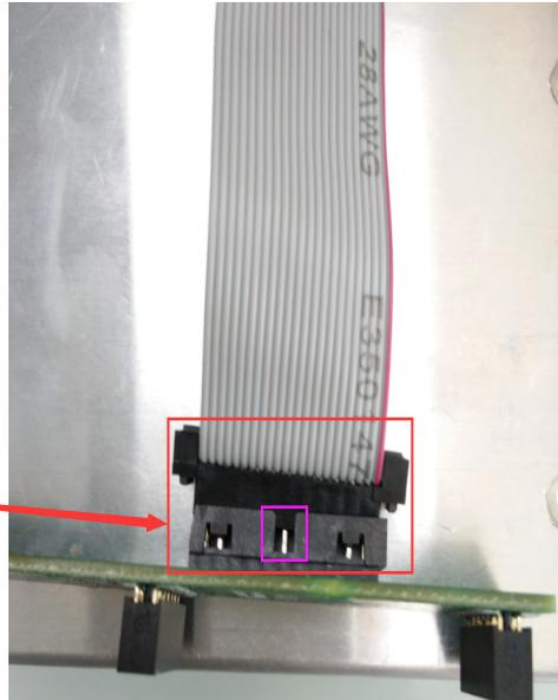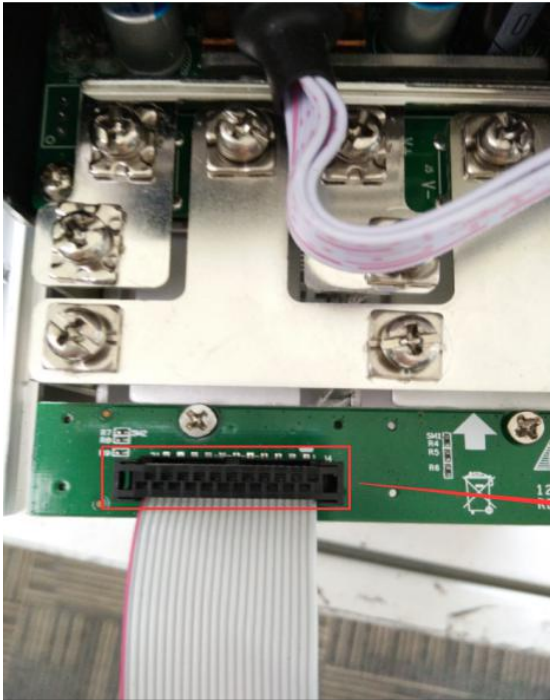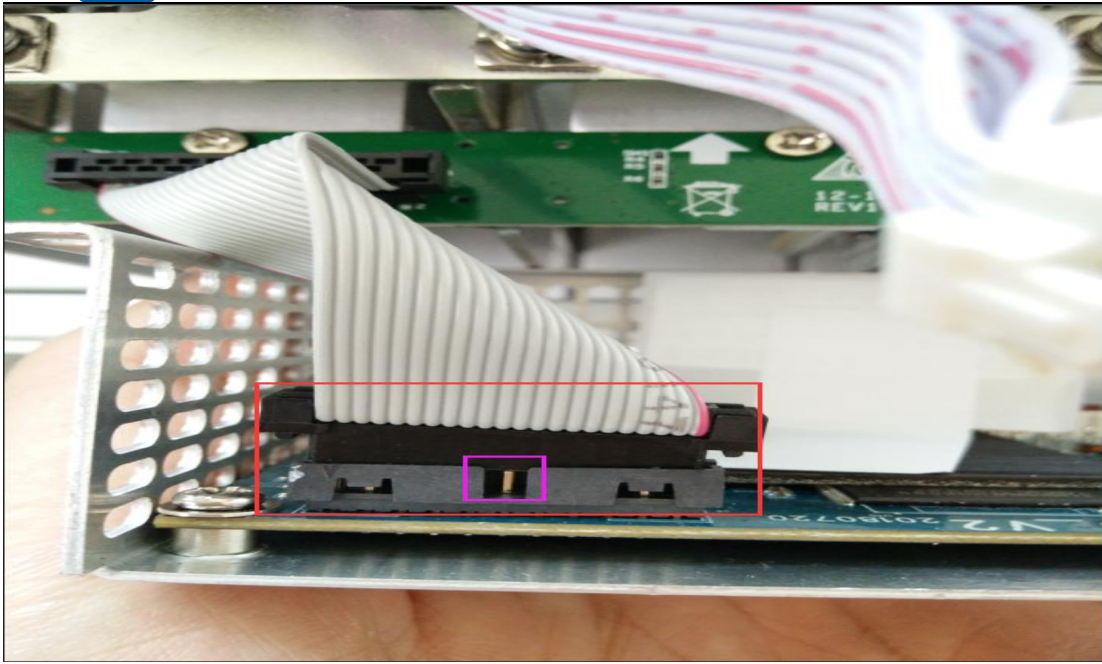
2.1.3.Fan Connection Notes

The fan wire is 6pin, and the card slot is inserted relative:

Correct Connection：
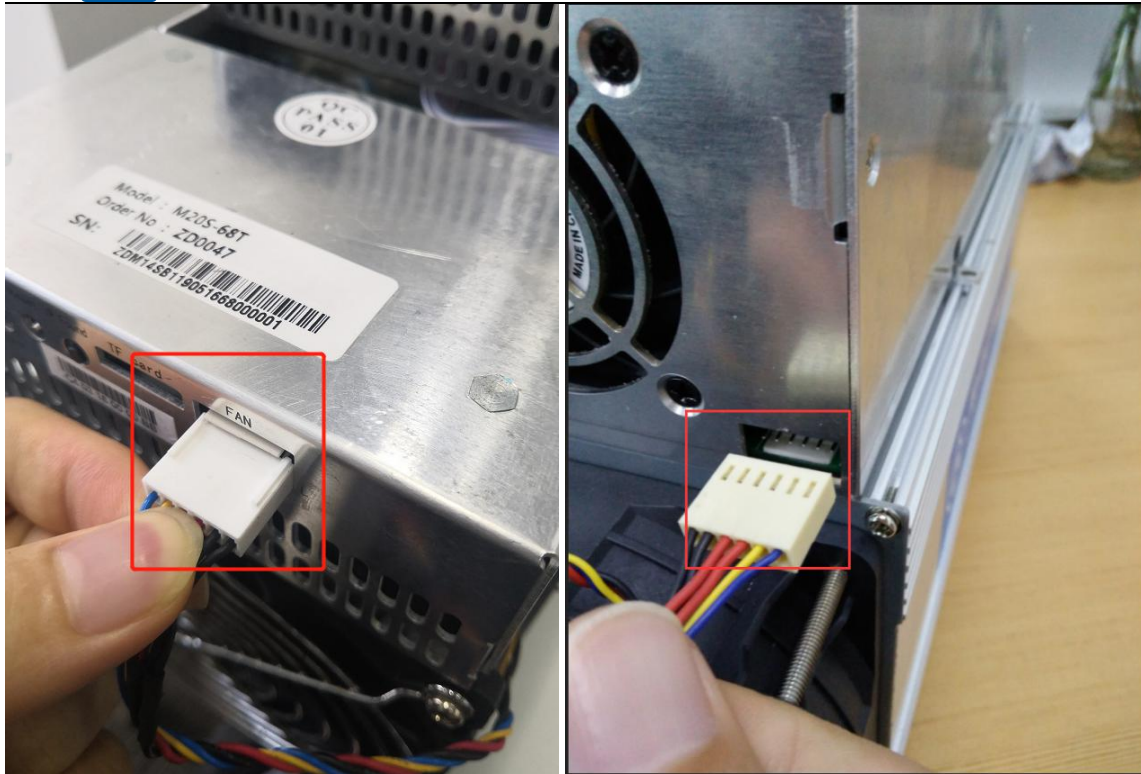
Incorrect Connection：
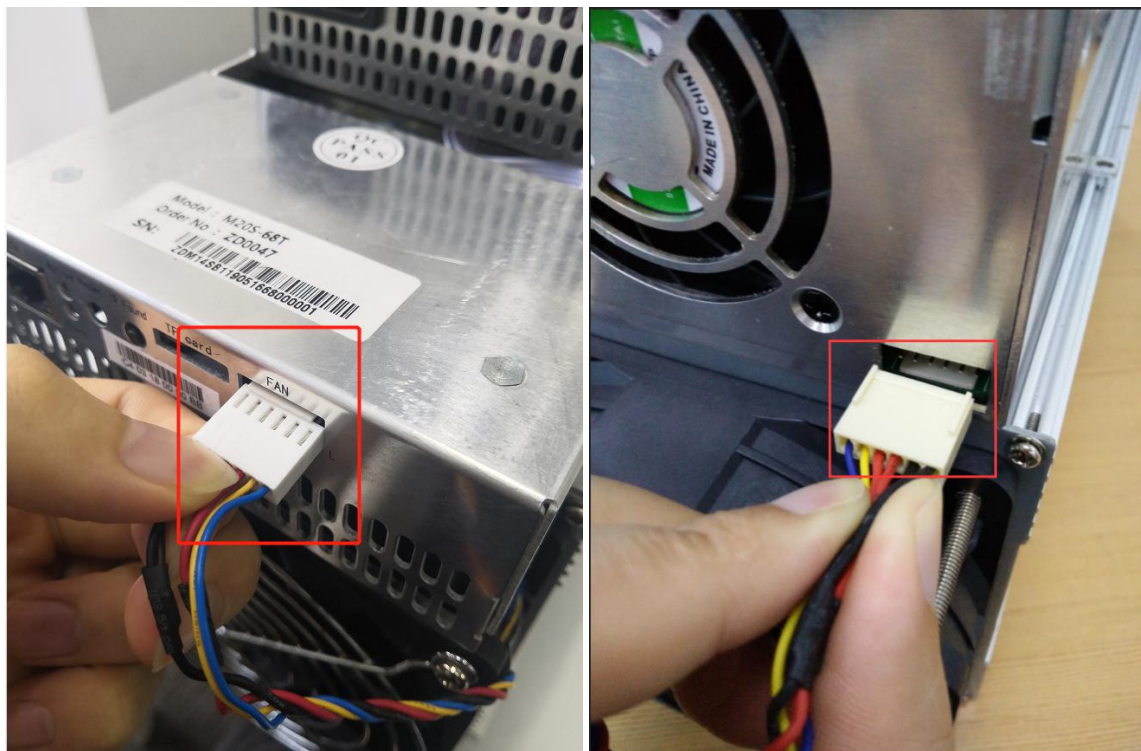
2.1.4.Hash Board and Adapter Board Connection Notes

<mark>The socket of the adapter board and the pin of the hash board must be installed in place to avoid other problems caused by contact problems!</mark>

Correct Connection：
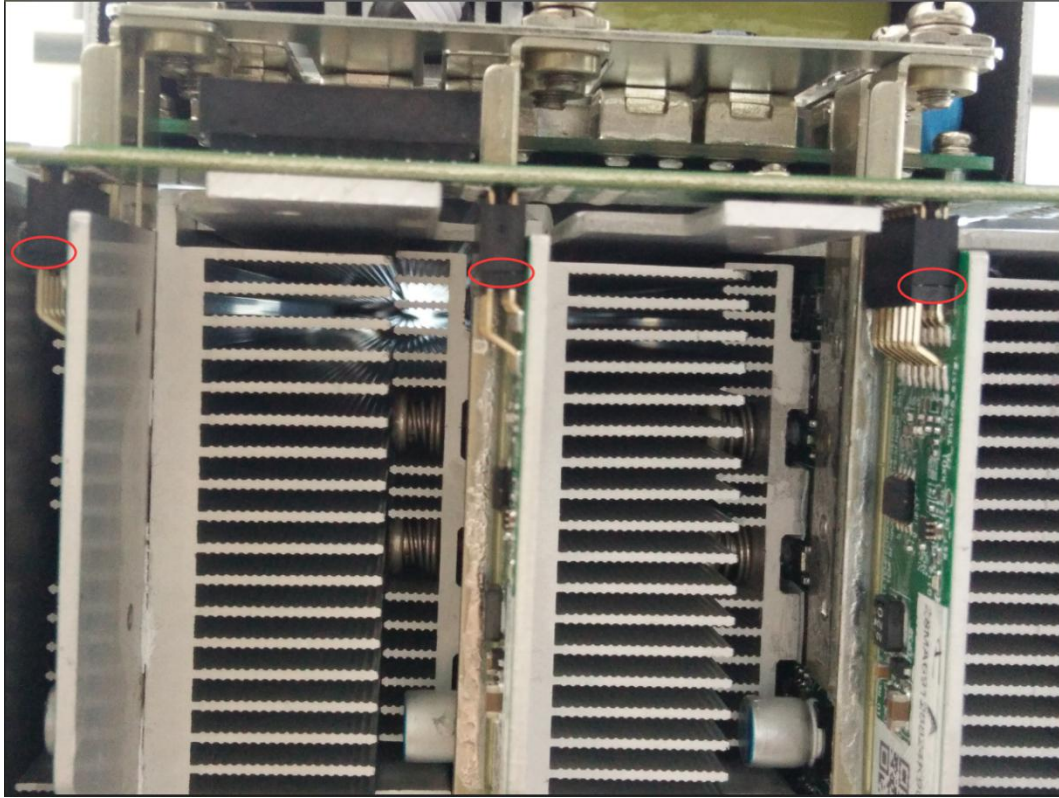
Incorrect Connection：

2.1.5.Power Supply Copper Busbar Connection Notes

When the power supply copper busbar is connected to the hash board, the positive and negative poles of the copper busbar cannot be connected incorrectly, and the screw washers of the fixed copper bar must be aligned in parallel with the edge of the copper bar. Otherwise, the machine may be short-circuited and burned when the power is turned on, and the fixed screw must be fixed. Tighten to avoid the machine not working properly due to poor contact with the copper bar!

Correct Connection：
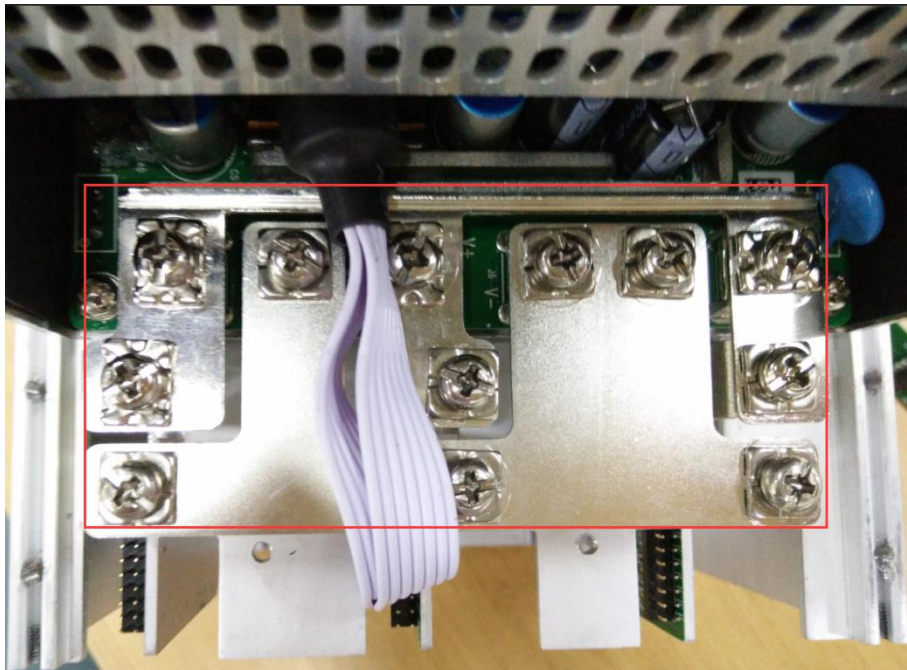
Incorrect Connection：
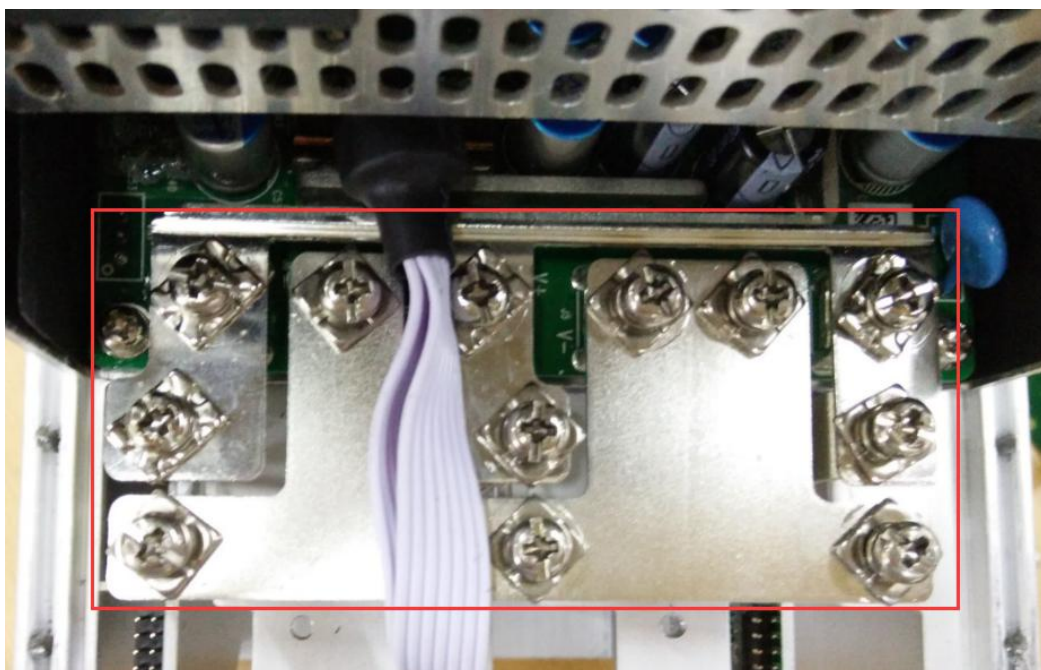
2.1.6.Product Connection Check

After all the connections of the miner are connected and all the screws are tightened, check again to confirm that the connection is correct.

2.2.Miner Handling and Racking Notes

In the process of handling and racking of the miner, it is strictly forbidden to use the data cable, the power supply control wire and the fan wire as the load-bearing handle of the miner, and to pick up the machine and the power supply. Lifting the machine and power supply through the connection will result in damage to the connection, loose connection, and physical damage to the control panel beyond its capacity. The resulting hardware damage and malfunctions will not be covered by the warranty!
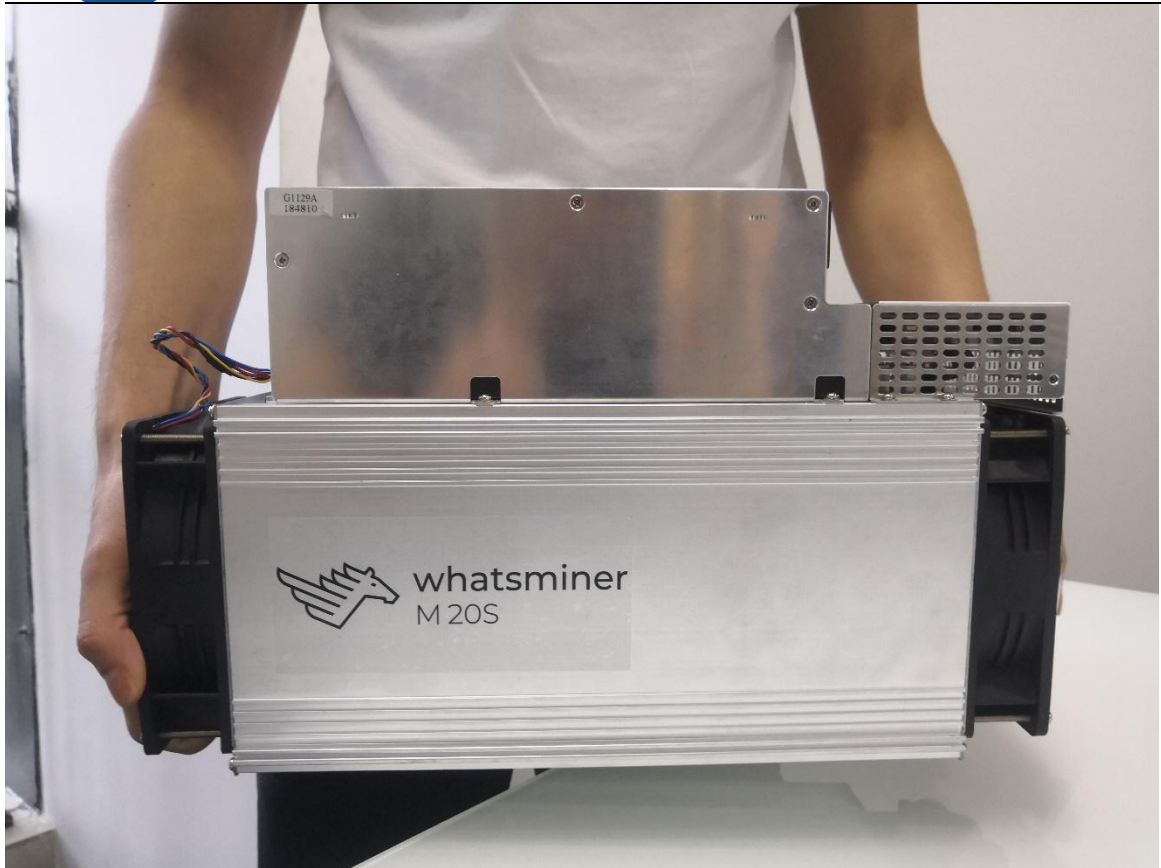
3. Miner Configuration Environment Preparation

3.1.Miner 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.Miner Network Environment
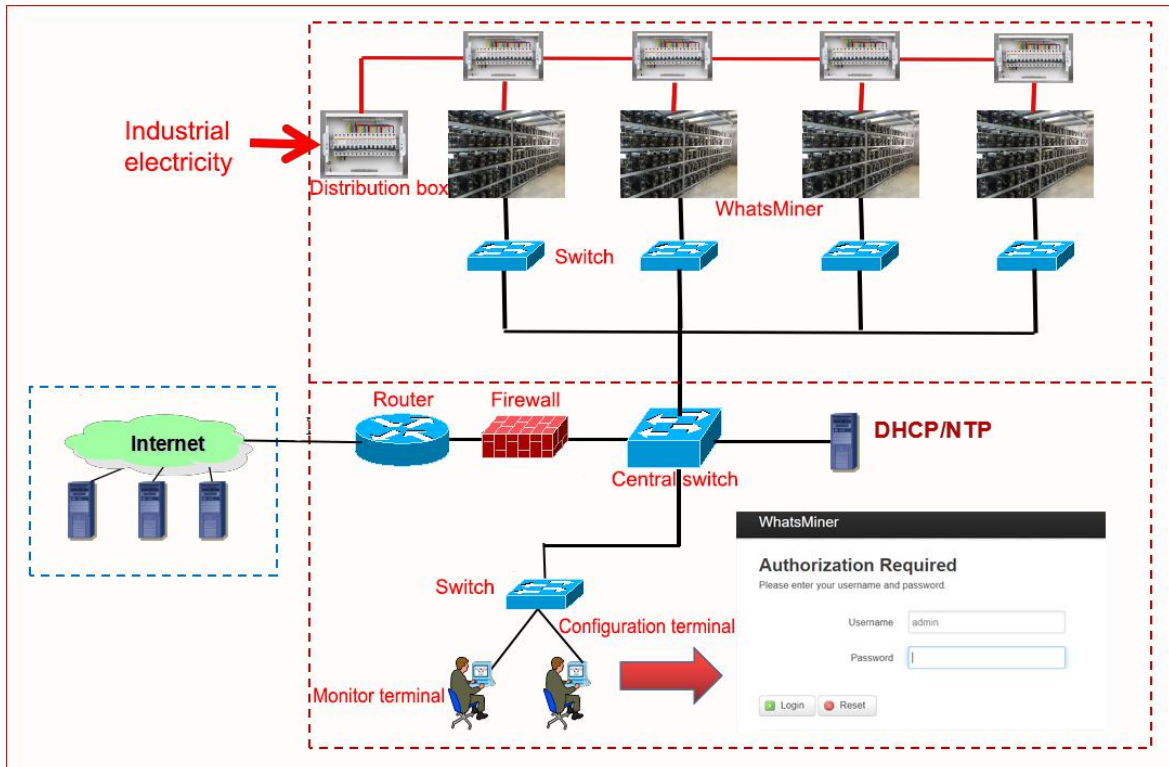
The miner defaults to DHCP to obtain dynamic ip. Therefore, the mine network must be configured with a DHCP server, or the router can enable dhcp to dynamically allocate the IP address service. The running time of the miner, the correctness of the calculation statistics, etc. depend on the network NTP time. The mining machine itself is configured with multiple NTP server addresses of the public network by default. In order to speed up the acquisition of network time and improve the time precision, it is recommended to mine the network. Configure a local NTP server.

4.Miner Connection and Pre-Power Check

（1）Before the wiring and power-on of the machine, according to the warning signs on the side of the machine, shake the machine to check whether there is a radiator or other components falling off, to ensure that there is no radiator or other period to fall off before wiring and power-on.

（2）The machine is connected to the power wiring, and the network port is connected to the switch. Check that the power control wiring, fan control wiring, adapter board control wiring, and fan control wiring are not loose, and the copper line is connected correctly before powering on the machine.

Notes：

（1）When the power copper busbar is connected to the hash board, the positive and negative poles of the copper busbar are not connected incorrectly, and the screw

5.Miner Data Configuration（Configuration on the web page）

5.1.Query the dynamic IP address obtained by the miner

5.1.1.Run WhatsMinerTools software

Miner data configuration PC Connect to the same network segment network where the machine is located, run WhatsMinerTools software on the PC, select the "Detect IP" tab, set the room number, rack number and layer number of the rack where the mining machine is located. , the location number of the layer, click "Start".
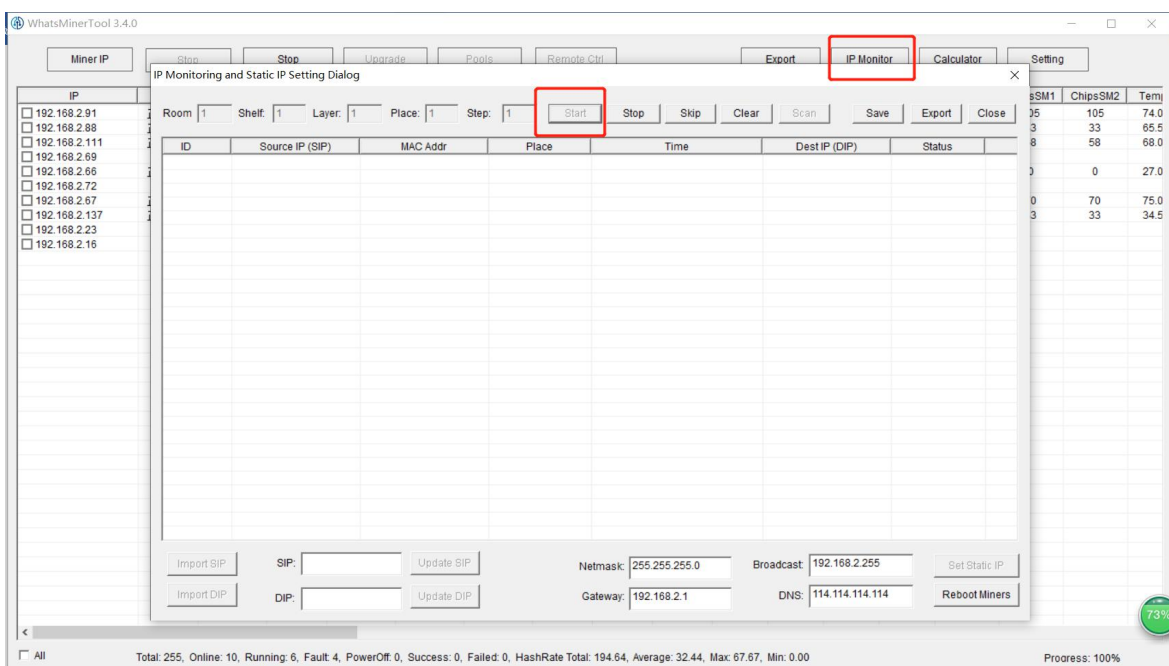
5.1.2.Check the IP address Reported by the Miner

（1）After the machine is powered on for about 30s, under normal circumstances, the yellow light of the network port is always on and the green light is blinking. Press the IPFOUND function button (long button highlighted) on the miner control panel for more than 5s, the two LEDs on the right will flash a few times, indicating that the machine has broadcast the IP and MAC address of the unit to the network.

（2）View the dynamically obtained IP, MAC address, and miner position reported by the machine in WhatsMinerTools software.
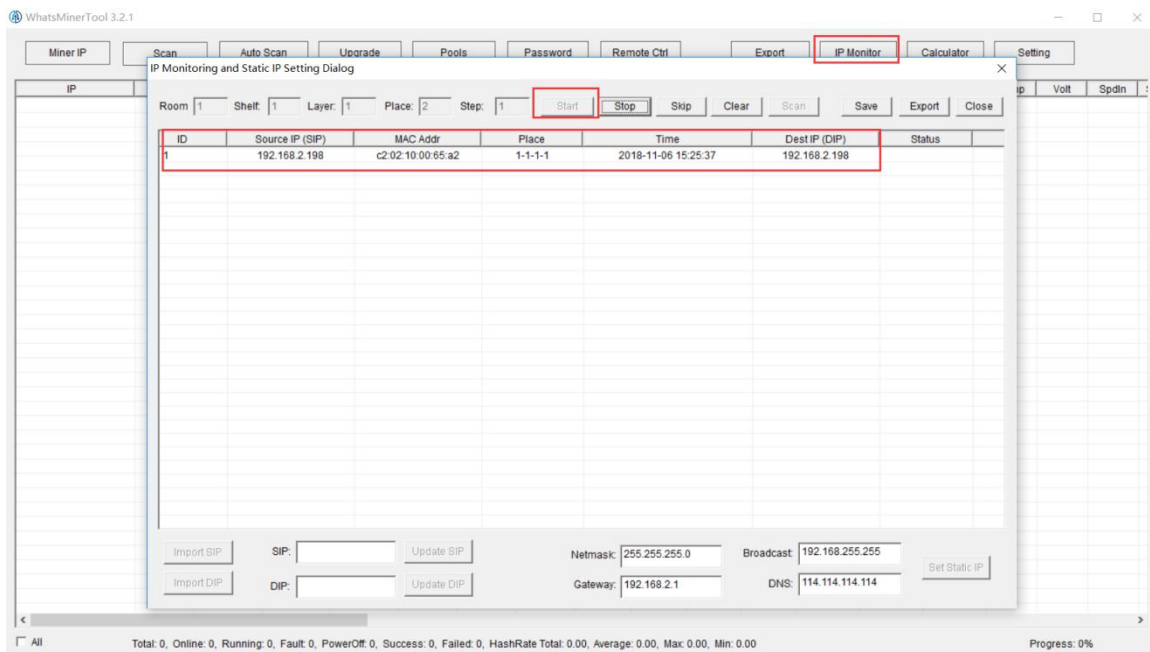
Notes：
（1）**If all the lights on the panel of the machine control panel are not lit after power-on, please check whether the power supply of the 220V power cable and the 16A power cable are reliable and the connection is correct.**
（2）**If the indicator on the right side of the panel of the machine control 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.Configuration Pool&Worker Data and NTP Server Address

5.2.1.Configuration Pool&Worker

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

（2）In the configuration-Cgminer configuration page,modify the mine pool address,mine worker name,after modifying, click "Save & Apply" in the lower right corner to save the modified configuration.

After the configuration of the mining pool is modified, the modified configuration must be restarted after the cgminer program is restarted or the control panel is restarted.

（3）Restart cgminer to check whether the configuration modification takes effect.

In the miner interface, select: Status-"CGMinerStatus" to enter the CGMiner running status interface.

In the cgminer status interface, click on "RestartCGMiner" to restart the cgminer process.

（4）Restart the control board and check whether the configuration modification takes effect. (If you do not choose to restart cgminer, after the configuration is modified and saved, you can also restart the control board to make the configuration take effect.)

In the system interface,click on"Reboot".

In the restart interface, click "Perform reboot" to confirm the restart.

After restarting for about 30s, the machine system will automatically jump to the login interface.

5.2.2.Modify the NTP Synchronization Server Address (optional)

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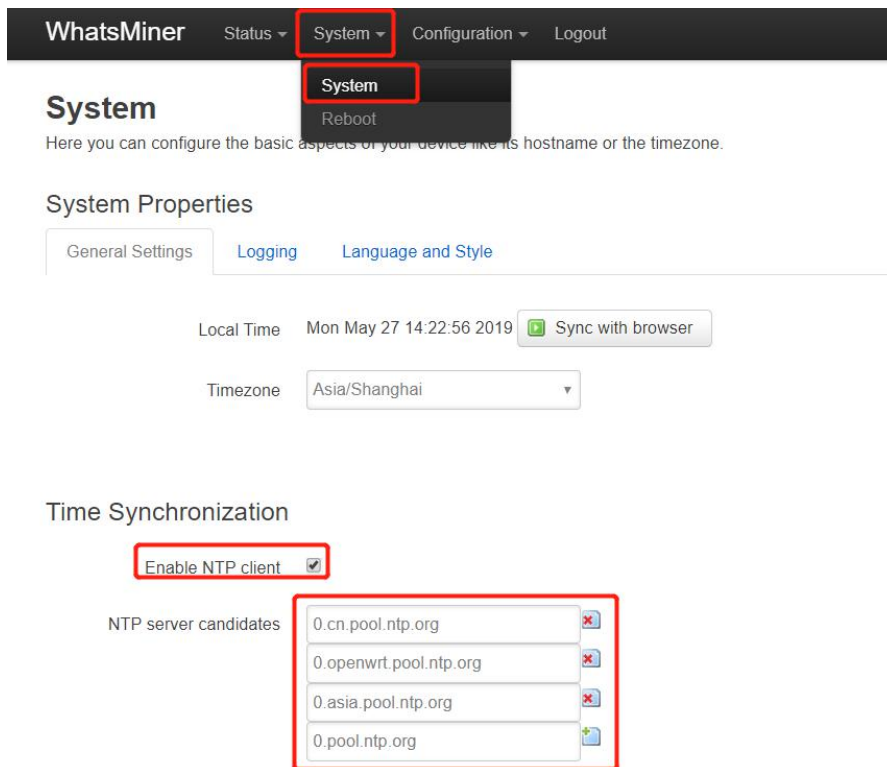
（2）In the cgminer configuration interface, add or modify the NTP server address. The miner has been configured with four NTP server addresses by default. You can modify or add the NTP server address to the local NTP server address according to the mine situation.

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

5.3.Configuration the Static IP Address (optional)

Modify the IP address obtained by the mining machine DHCP to the static IP address of the mine operation network planning.

（1）Enter the machine dynamic IP in the browser and log in to the mine interface with the admin user and the default password admin.

（2）After logging in to the machine, in the miner interface, select: Configuration->Interfaces to enter the network interface configuration interface.

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

（4）In the interface modification page, select "Static address" for the protocol and click "Switch protocol".

（5）In the static address configuration interface, change the IP address, mask, gateway, broadcast address, and DNS address to the actual planned address of the mine. After editing, click "Save & Apply" in the lower right corner.

After saving the application, you need to re-use the newly set static IP address to log in to the mining machine (otherwise the page will display loading until the loading fails).

6.Miner Operation Status Check

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

（1）In the miner interface, select: Status->CGMiner Status to enter the cgminer running status interface.

（2）View the overall calculation of the mining machine, front and rear fan speed, connection to the mining pool, single board computing power, board temperature and other operating conditions.

WhatsMiner   Status ▾   System ▾   Configuration ▾   Logout

运行时间 总算力   出入口风扇转速

Elapsed	GHSav	Accepted	Rejected	FanSpeedIn	FanSpeedOut	Voltage	Work Mode
18m 6s	68277.17	162	0	4,320	4,350	1,170	Normal

Devices

Device	Enabled	Status	GHSav	GHS5s	GHS1m	GHS5m	GHS15m	LastValidWork
SM0	Y	Alive	22537.68	22427.29	22558.59	22238.77	17476.40	Tue May 28 10:40:36 2019
SM1	Y	Alive	22408.97	22293.89	22420.50	22111.11	17436.00	Tue May 28 10:40:36 2019
SM2	Y	Alive	23325.70	23120.32	23290.02	22933.98	17665.18	Tue May 28 10:40:36 2019

算力板温度

Device	Frequency(avg)	UpfreqCompleted	EffectiveChips	Temperature
SM0	661	1	105	80.00
SM1	661	1	105	78.50
SM2	677	1	105	80.00

Pools 矿池信息

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	131072	41	162	0	0	Tue May 28 10:40:33 2019	131072

Notes:

（1）The mining machine is connected correctly. When the network is normal, the mining machine will automatically perform the frequency search test after power-on. The search frequency test phase takes about 15 minutes. After the search frequency is over, it will enter the formal mining stage. It is the computing power of normal operation. If the search frequency is not over yet, the power of the calculation will be lower than the normal operation.

（2）If the temperature of the air outlet of the power board is higher than 85 degrees and the fan speed is above 6100 rpm, the mining machine will run at a reduced frequency, and the power will be lower than the normal calculation. It is necessary to do a good job of ventilation and cooling measures in the operating environment of the mining machine to ensure that the ambient temperature of the mining machine is below 40.

（3）If the fan wiring is not reliably connected to the control board, the corresponding fan speed in the miner interface is 0, which leads to the mining machine.When the temperature is too high, the power board is down, and the computing power is reduced.

（4）If some of the power board and temperature are not detected in the status interface, the mine machine needs to be powered off, and the power cable and data cable of the corresponding power board are re-plugged and connected (one end of the control board and one end of the hash board) to ensure a reliable connection.

# 7.Miner Batch Data Configuration, Miner 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".

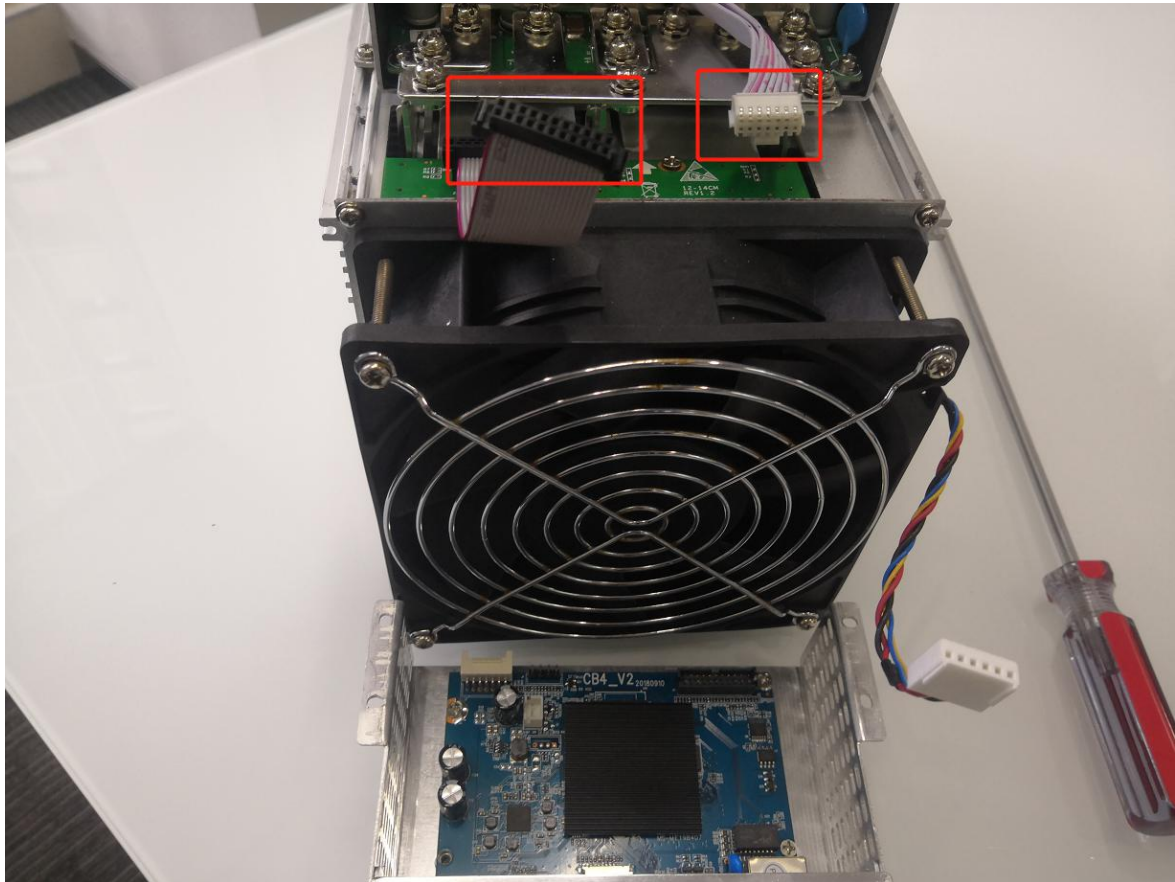# 8.Miner Disassembly and Installation

8.1. Control Panel Disassembly and Installation
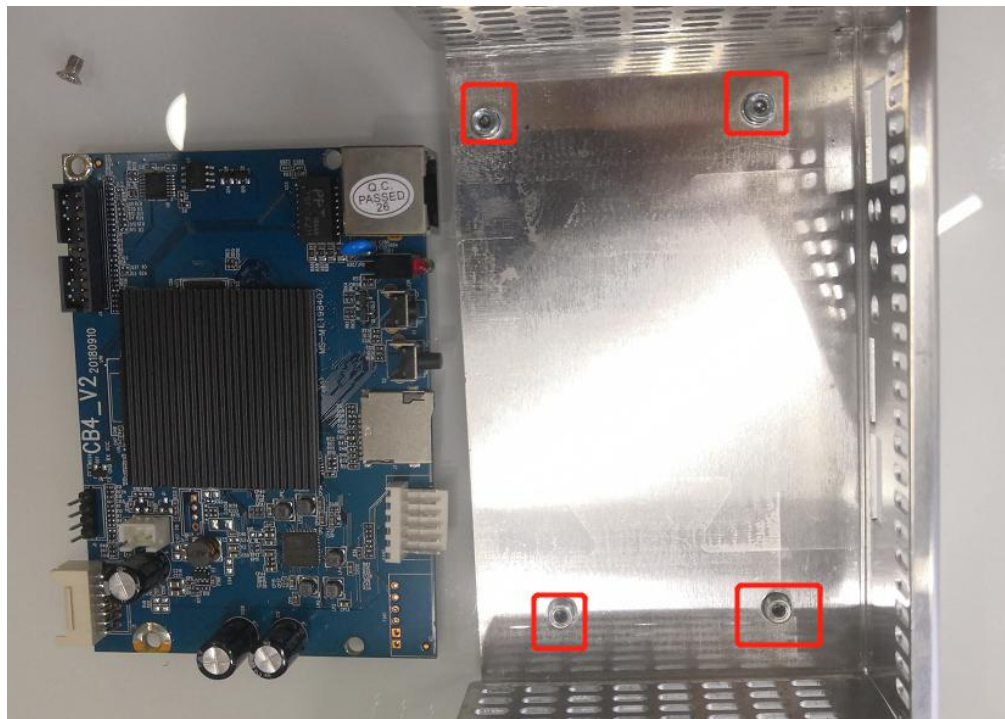
8.1.1.Control Panel Disassembly

1）Unplug the fan cable on the control panel before removing the control board, and then remove the four screws fixed on the chassis.
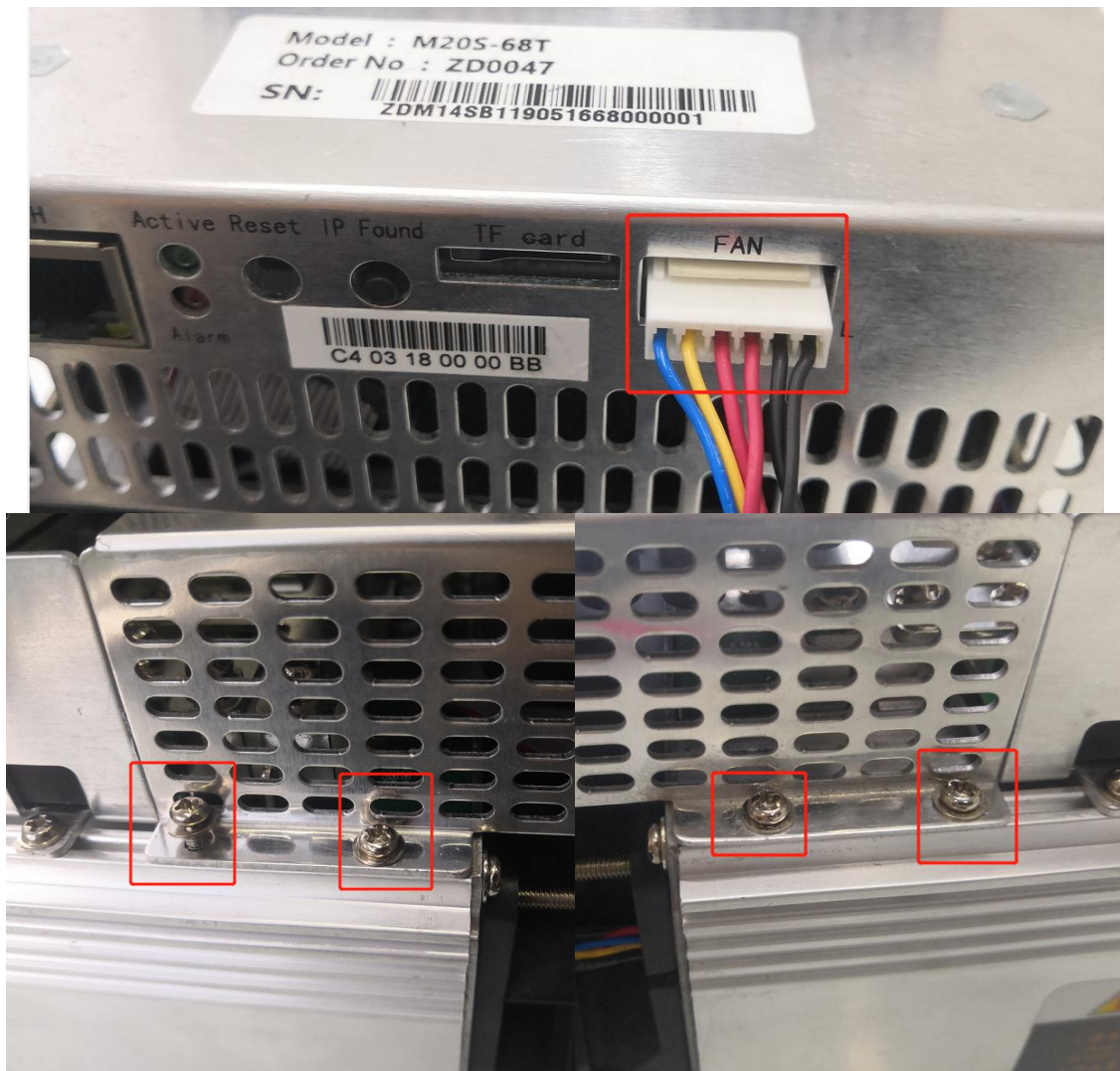
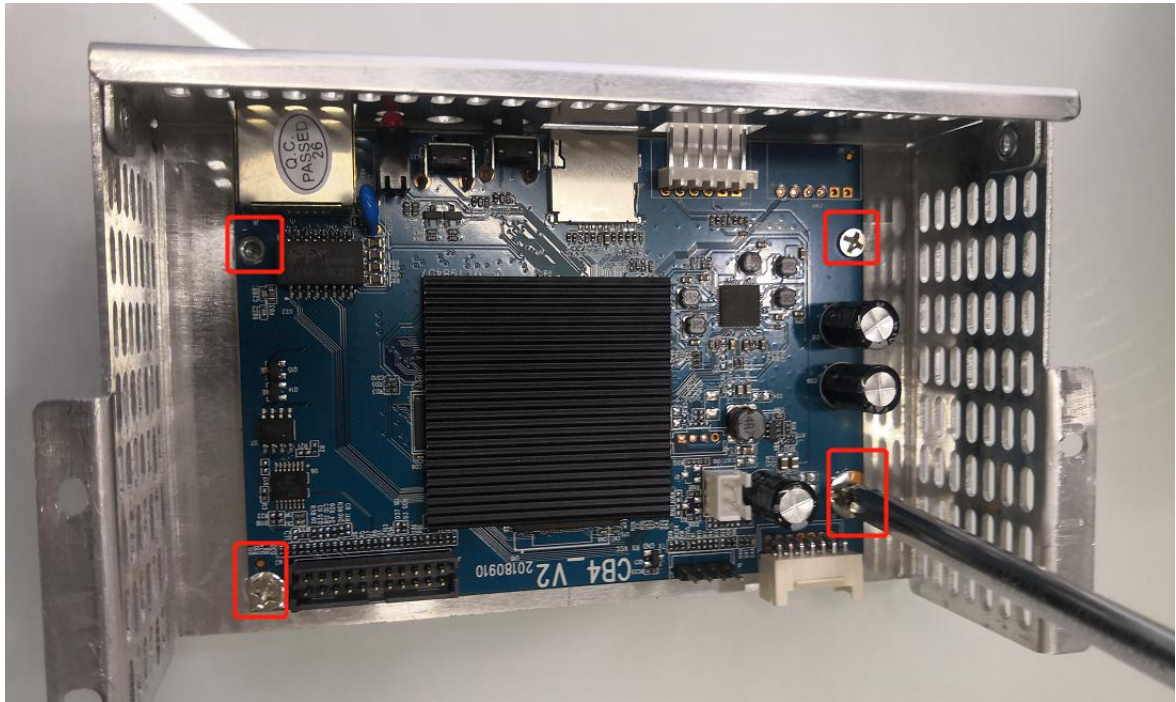2）Unplug the power control cable and the adapter board control cable connected to the control panel as shown：

3）Remove the four screws fixed on the bracket and take out the control panel from the bracket as shown：

8.1.2.Control Panel Installation

1）When installing the control board, first fix the 4 screws on the control board bracket, as shown in the figure：

2）Insert the power control cable and the adapter board control cable into the corresponding slots on the control board, and then fix the bracket to the chassis with screws, as shown in the figure：
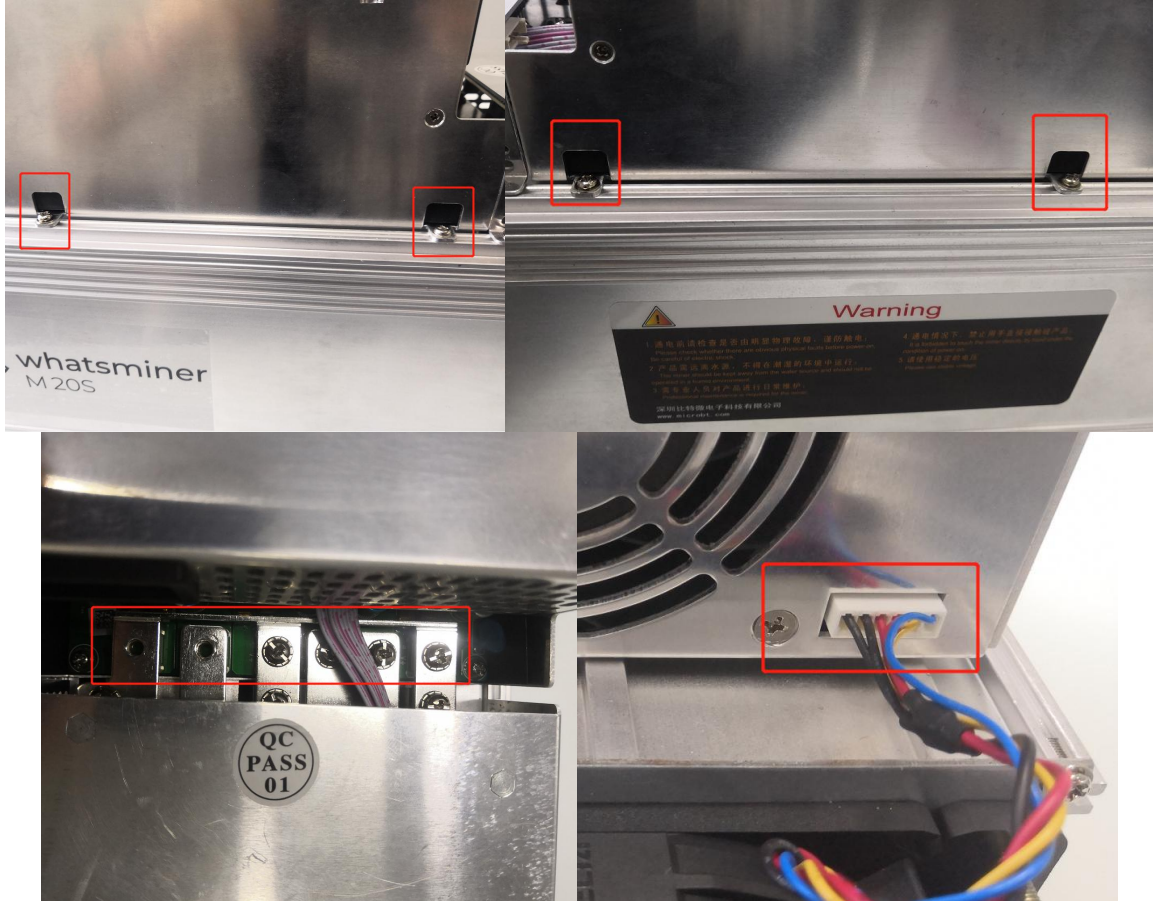
3）Plug the fan cable and the control board is installed.

8.2.Power Supply Disassembly and Installation

8.2.1.Power Supply Disassembly

1）Remove the four screws that secure the power supply on the chassis , and then remove the six screws that secure the copper bars on the power supply. Unplug the fan cable on the power supply .

2）After the above operation is completed, gently pull out the power supply (do not pull out too long, the power control cable is still connected to the control panel), as shown in the figure：
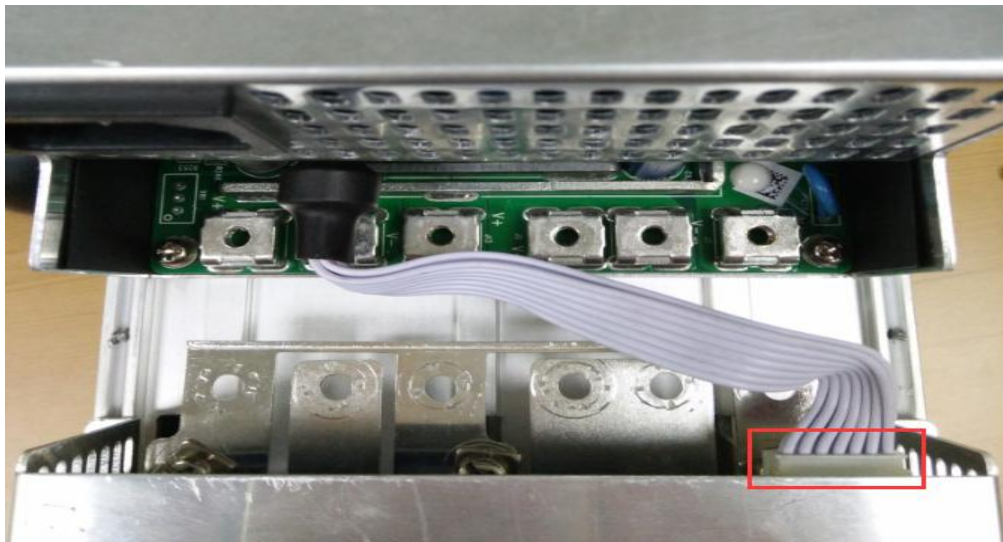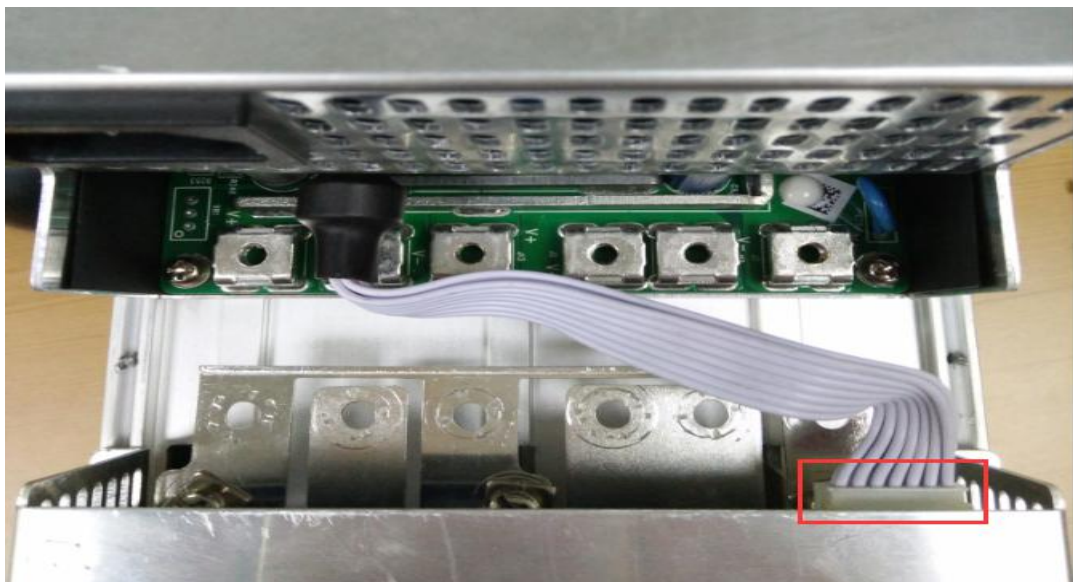
3）Unplug the power control cable on the control panel, remove the power supply, and remove the power supply：


8.2.2.Power Supply Installation

1）First plug the control cable of the power supply into the corresponding slot on the control panel, as shown below：

2）Then connect the 6 positive and negative terminals on the power supply to the copper row one by one, and then install 6 screws in turn. ==The screws should be tightened and the gasket should be aligned parallel to the edge of the copper bar to avoid short circuit burning the power supply or the power board==, as shown below：
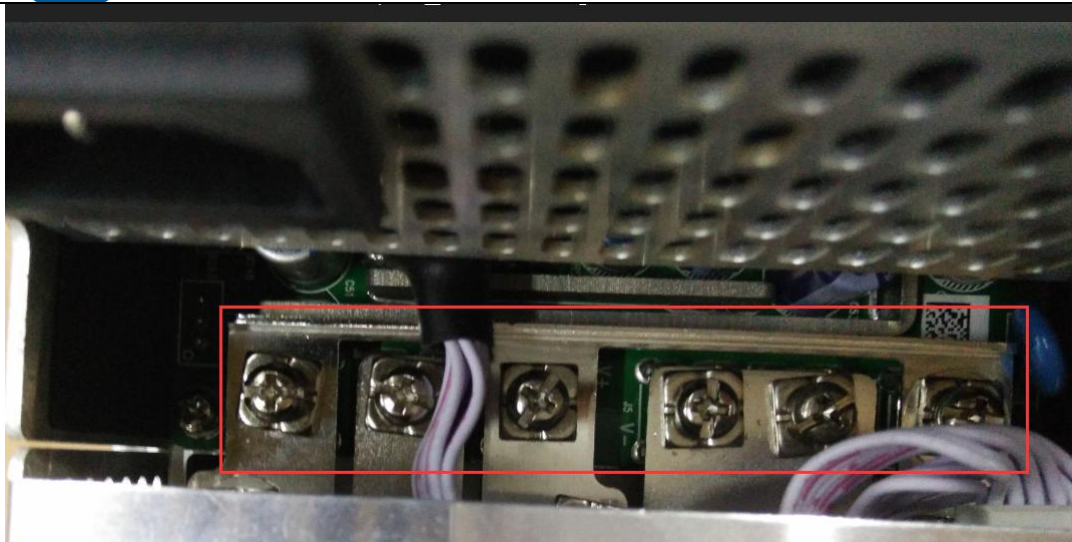
3）Finally, tighten the screws of the four fixed power supplies on the chassis, and the power supply is installed, as shown below：
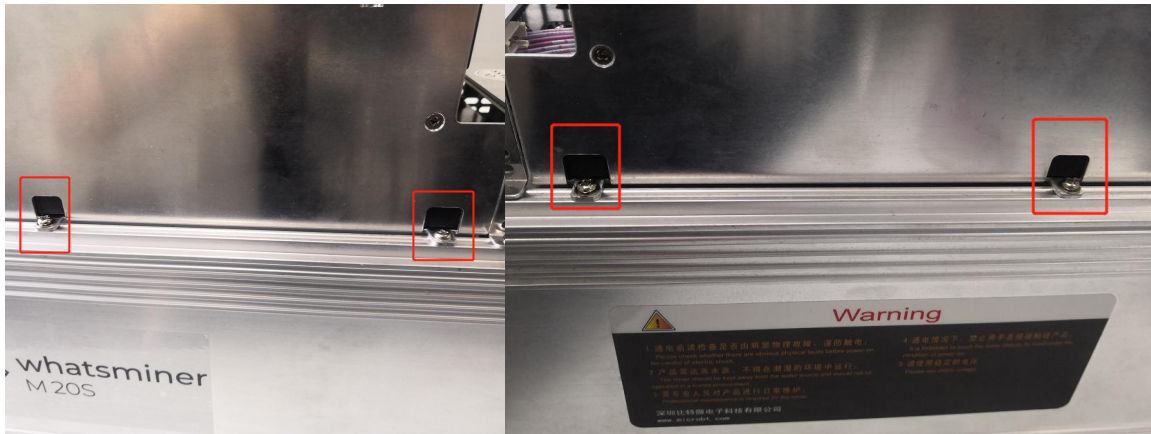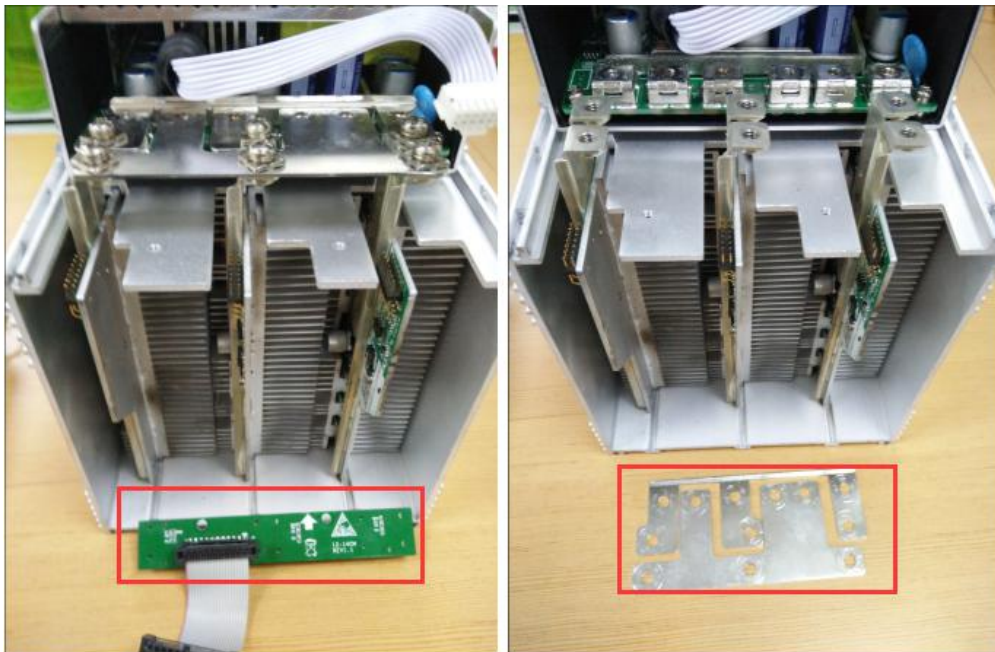

## 8.3.Hash Board Disassembly and Installation

8.3.1.Hash Board Disassembly

1）There are three hash boards on each mining machine (the order number of the hash board is as shown below). Before removing the board, first remove the control board and the inlet fan, as shown below：
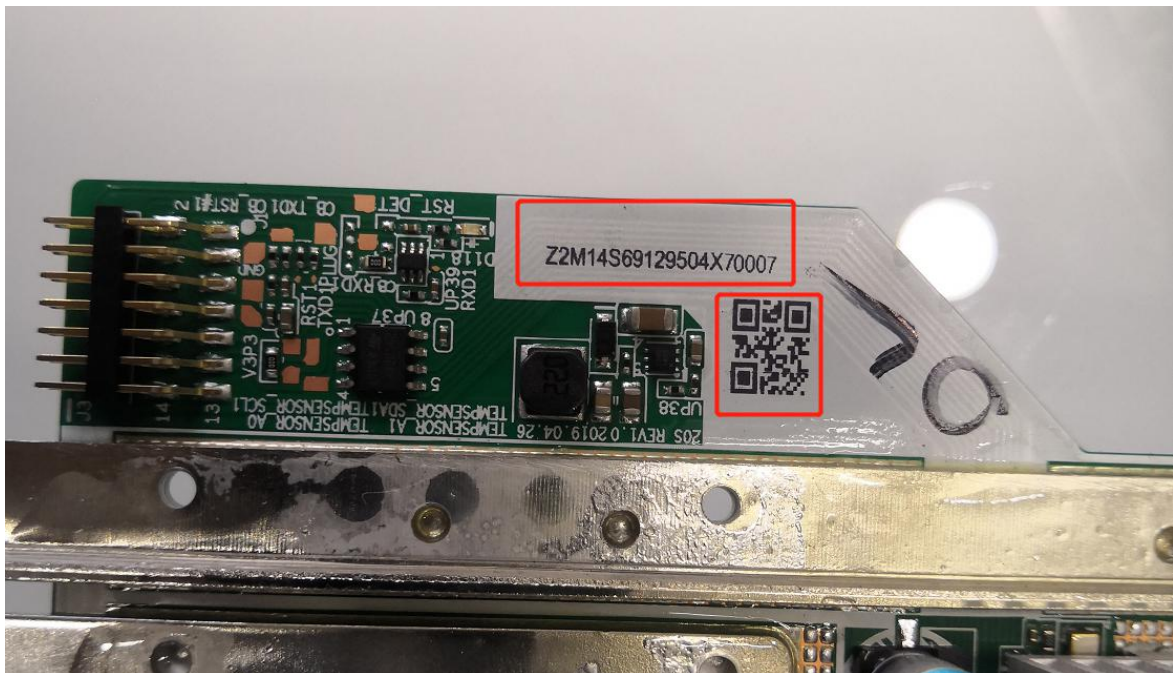
2）Remove the adapter plate and the copper bar fixed to the control panel as shown：

3）Extract the faulty hash board outward, as shown：

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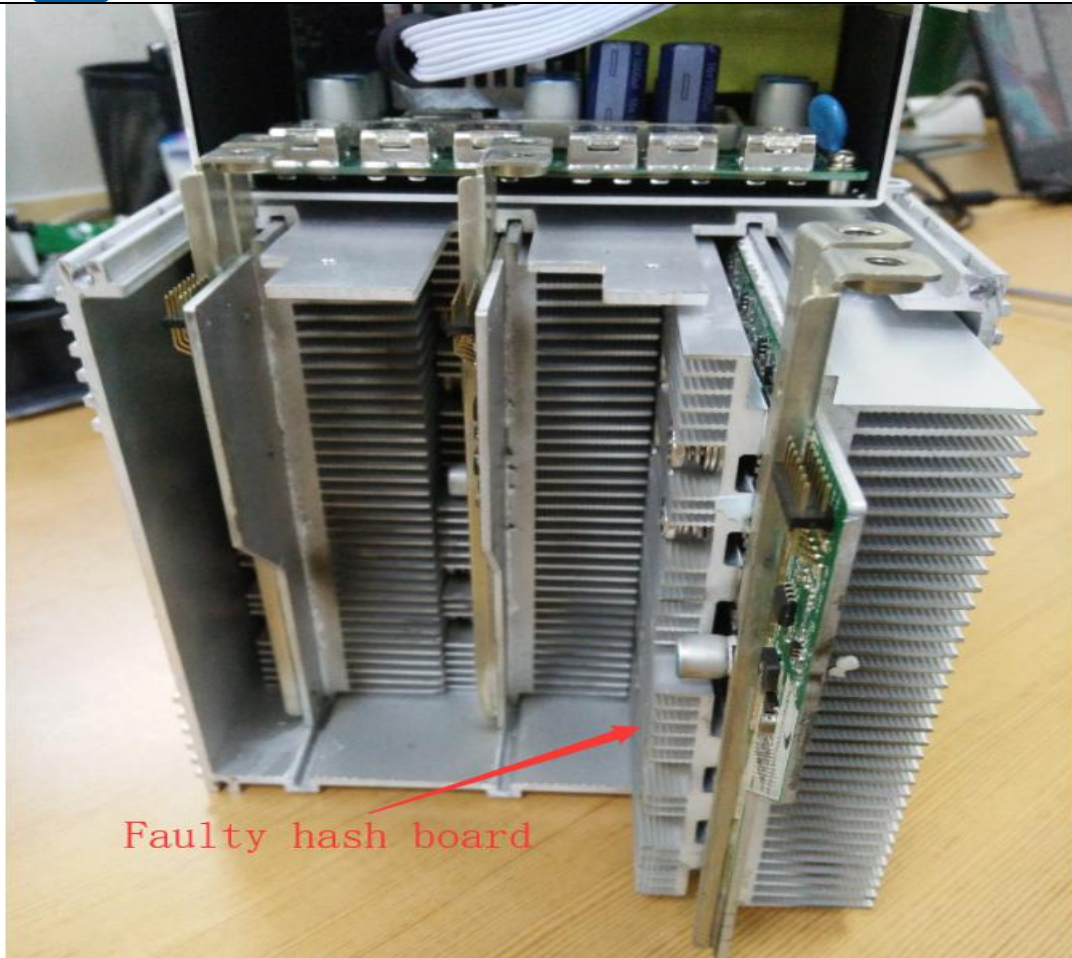
4）After taking out the hash board, record the serial number above or use WeChat "sweep" to scan the power board serial number and provide it to the relevant after-sales technician, as shown：


Z2M14S69129504X70007

8.3.2.Hash Board Installation

1）When the hash board is loaded into the chassis, one hand holds the board into the hash board slot, and sequentially enters the chassis, as shown in the figure：

2）After installing the hash board into the chassis, first install the adapter board. <mark>The socket of the adapter board and the pin of the hash board must be installed in place to avoid other problems caused by contact problems</mark>, as shown：
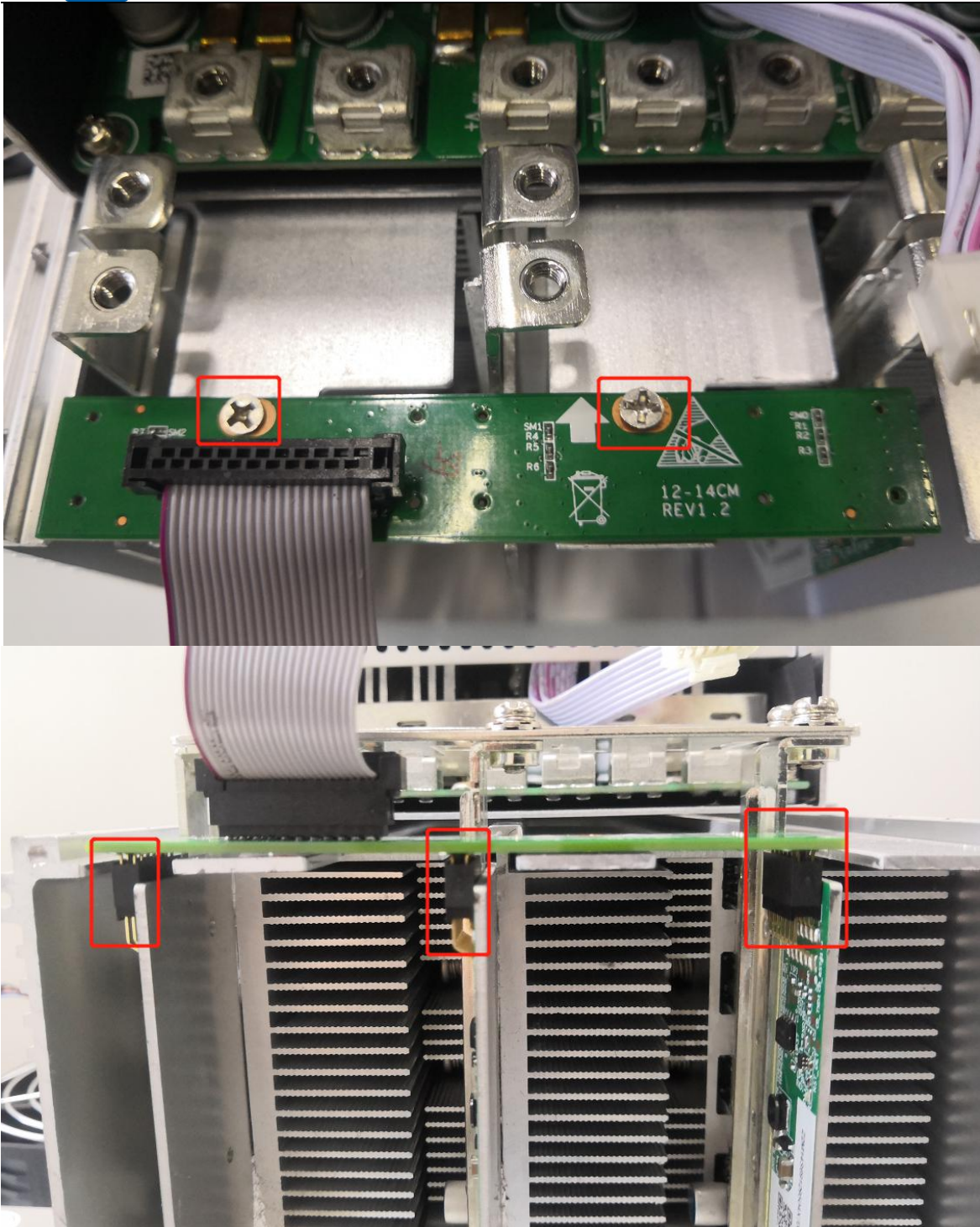
3）After the adapter plate is installed, install the copper bar. <mark>When the power busbar is connected to the hash board, the positive and negative poles of the copper bar cannot be connected incorrectly, and the screw pads of the fixed copper bar must be aligned with the edge of the copper bar, otherwise it may be possible to power on. The machine will be short-circuited and the fixed screws must be tightened to avoid the normal operation of the machine due to poor contact with the copper bars,</mark>as shown:
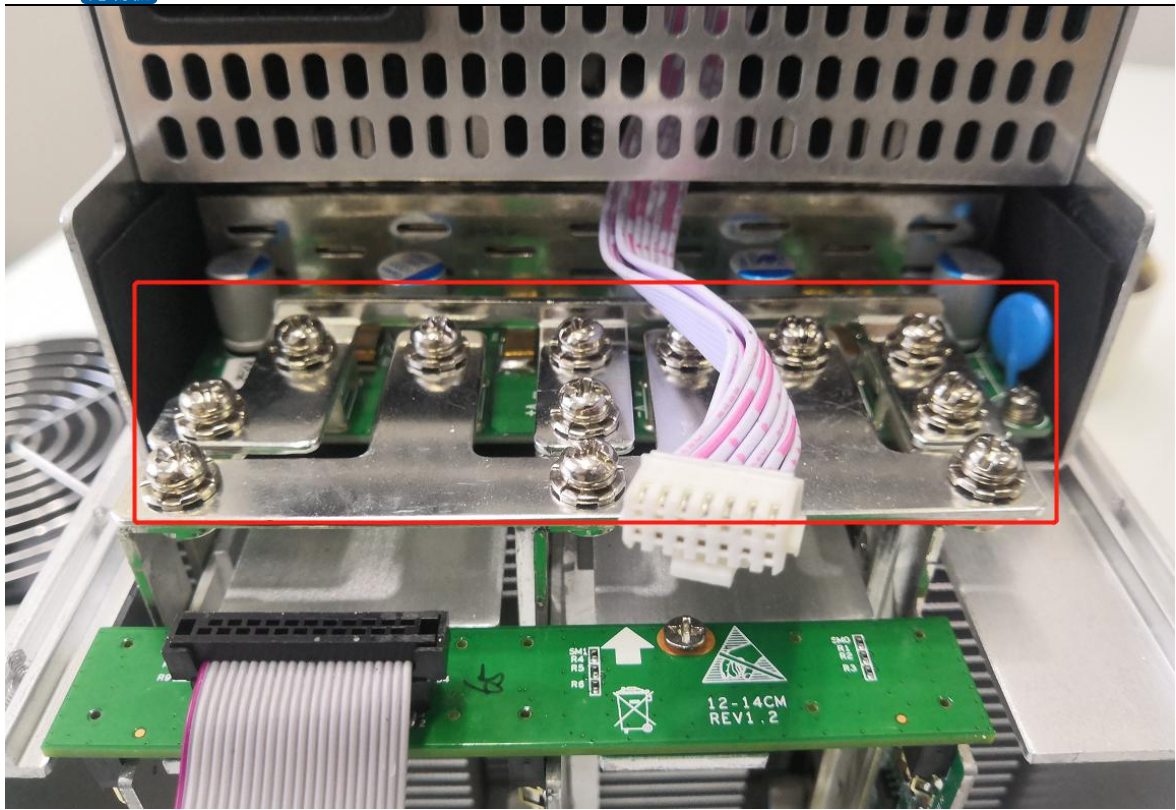
4）After the copper row is installed, the control board and the fan are installed, and the hash board is installed, as shown：