BITMAIN

AntMiner R4 Manual



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1 Overview

The AntMiner R4 with 8.6th/s is Bitmin's newest iteration. The Antminer R4 uses the fully custom made, state of the art BM1387 chip powered by ultra-low power 16nm technology. The R4 is tested and configured prior to shipping to make your setup as easy and seamless as possible.



Please note:

1. You must prepare your own ATX Power Supply

2 Features

| Ideal Hash Rate (GH/s) | 8.6TH/S ±5% |
|--|----------------------------------|
| Default chip clock (M) | 600 |
| Input Voltage (V) | 11.6~13.00 |
| Estimate power on wall (W) - assume with | 845W + 9% |
| APW3, 93% efficiency, 25°C ambient temp | |
| Estimate efficiency on wall (J/GH) | 0.1J/GH + 9% |
| Dimensions (mm) | 515*100*222 |
| Net Weight (kg) | 5 |
| Operating ambient temperature (°C) | 0~40 |
| Noise | 52dB@ambient temperature of 35°C |
| Networking connection mode | Ethernet cable |

Notes: All the 3 PCIE connectors are required on each hash board and there is no DC/DC inside the miner. Higher input voltage will cause higher mining efficiency.



3 Power Supply

Each AntMiner R4 has 6 PCI-e connectors for +12V/15A DC **STABLE** input on hash boards and 1 PCI-e connector on the controller, **all the 7 PCI-e connectors are required**. **Do not connect more than one PSU to the same hash board to prevent possible damage and instability. After connecting all the hash boards and the controller to PSU and the wire cable to the ETHERNET port, you can start the miner.** See the screen shot below for the CORRECT and INCORRECT connection of the PCI-E connectors: **Correct connection:**

PSU 1



Incorrect connection:





4 Connect to Miner

Step 1. The default DHCP network protocol distributes IP addresses automatically. Please download IPReporter.zip (only supported by Windows) from minerlink.com, then please follow the below steps to find out the IP of the miner.

1. Extract the file and double click 'IPReporter.exe'.

The 'Shelf, Step, Position' options are suitable for farm miners to mark the location of the miners. For home miners, it can be left as default.

Then click 'Start'.

| 4 | | | | | Ip Re | porter | | | - 🗆 × |
|---|-------------------|-------------------------|--------|--------------------|------------------------------|---------------------------|--------------------------|----|----------|
| | | | | | | | | | \frown |
| | Shelf | 1 | | Step | 1 | Positio | n 1 |](| Start |
| | Infor | mation - | | | | | | | |
| | NO. | IF | D C | | | | MAC | | |
| | this is if you | s suitable I're home | for fa | arm mir er, you | ners to mark may leave it | location of as default | f miners. t directly. | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | ۲ | | | | | | | | > |
| | | | | | | | | | |
| | | Skip | | | Stop | E | xport | | Quit |
| | | | | | | | | | |

2. Press the IP Reporter button on the controller board for about 5 seconds and you'll hear a beep sound:





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3. Check your PC, you'll see the IP address showing in the pop-up window.

| 2 | | IP Re | eporter | | _ 🗆 🗙 🛪 |
|---------|-------|-----------------|-----------------------|------|------------|
| Shelf 1 | 5 | Step 1 Confi | Position 1 rmation | | Start × |
| ln I | | | | 1 | |
| | IP | 1.70.123 | | | |
| | MAC | 6C:EC:EB:62:3 | 9:F2 | | |
| POS | ITION | 1-1 | | | |
| | OK | s | škip | Stop | |
| Skip | | Stop | Export | | Quit |

Step 2. Enter the IP address provided into your WEB browser and proceed to login using 'root' for both the username and password.

In the 'Network' section, you can assign a 'Static' IP address if you like. Click 'Save & Apply' after modifying it.

| ANTMINER | |
|---|---|
| System Miner Configuration Miner Status | Network |
| Settings Diagnostics | |
| Network Settings | |
| Network setup for Miner | |
| Status | MAC-Address:78:A5:04:CD:18:B1 1P:192.168.1.181 eth0 Netmask:255.255.0 |
| Hostname | antMiner |
| Protocol | Static |
| IP Address | Static DHCP |
| Netmask | |
| Gateway | |
| DNS Servers | |
| | |
| | Save&Apply |
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5 Miner Configuration

5.1 General Settings

You can configure your miner through 'Miner Configuration->General Settings'.

Pool URL- Enter the URL of your desired pool in this column.

Worker- This is your worker ID on the selected pool.

Password- This is the password for your selected worker.

Comment:

5.1.1 The AntMiner R4 can be set up with three mining pools, with decreasing priority from the first pool (pool 1) to the third pool (pool 3). The pools with low priority will only be used if all higher priority pools have gone offline.

5.1.2 When 'Stop running when temperature is over 80 $^{\circ}$ C' is checked, the miner will stop mining when the temperature(PCB) exceeds 90 $^{\circ}$ C to protect the miner. If it is unchecked, the miner will still mine even at high temperatures. Note that while the interface says 80 $^{\circ}$ C the PCB temperature will actually go to 90 $^{\circ}$ C before the machine stops mining.

5.1.3 When "Customize the fan speed percentage" is checked, the fan speed can be controlled by the user. If it is unchecked, the fan speed will depend on the temperature of the hash boards. Click 'Save & Apply' to save and restart miner.

Kindly reminder: Please set the fan speed above 80% to keep the temp(PCB) below 90 degrees and the temp(chip) below 115 degrees.

| ANTRINER | |
|---|---|
| System Miner Configuration Miner Status Network | |
| General Settings Advanced Settings | |
| Miner General Configuration | |
| | |
| Pool 1 | |
| URL | solo.antpool.com:3333 |
| Worker | antminer.1 |
| Password | 123 |
| Pool 2 | |
| URL | stratum.antpool.com:3333 |
| Worker | antminer.1 |
| Password | 123 |
| Pool 3 | |
| URL | stratum.f2pool.com:3333 |
| Worker | antminer.1 |
| Password | 123 |
| Setup | |
| Stop running when temprerature is over 80°C | |
| Customize the fan speed percentage | □ % |
| | |
| | Preset Save&Apply |
| P | Copyright © 2013-2014, Bitmain Technologies |



5.2 Frequency Modification

You are able to modify the frequency value through 'Miner Configuration->Advanced Settings'. The default frequency for the AntMiner R4 is 600M.

| NTMINER | | |
|---|---|------------------|
| System Miner Configuration Miner Status Network | | |
| General Settings Advanced Settings | | |
| Miner Advanced Configuration | | |
| Settings | | |
| Frequency | 600.00M ¢ | |
| | | Reset Save&Apply |
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| | | |
| | | |

6 Miner Status

You can check the operating status of your miner on 'Miner Status' page.

ASIC#: Number of chips detected in the chain Frequency: ASIC frequency setting GH/S(RT): Hash rate of each hash board Temp(PCB): Temperature of the hash board, centigrade Temp(Chip): Temperature of the chips on the hash board, centigrade ASIC status: 'o' denotes OK, 'x' denotes error '-' denotes dead.

| ystem Min | er Configuration | Miner Status | Network | | | | | | | | | | | | | | | |
|-----------|------------------|----------------------|--------------------|------------|--------|----------|----------|----------|----------|--------|---------------|------------|----------|----------|--------------|---------|---------|--------|
| ner Statu | s | | | | | | | | | | | | | | | | | |
| Summary | | | | | | | | | | | | | | | | | | |
| Elap | sed | GH/S(RT) | | GH/S(| avg) | | Foun | dBlocks | | Local | Work | Uti | lity | v | vu | | BestSha | re |
| 1h28 | im5s | 8,620.972 | | 8,665 | .56 | | | 0 | | 168, | ,598 | 6. | 77 | 118,9 | 917.62 | | 2359111 | 0 |
| Pools | | | | | | | | | | | | | | | | | | |
| Pool | | URL | | User | Status | Diff | GetWorks | Priority | Accepted | Diff1# | DiffA# | DiffR# | DiffS# | Rejected | Discarded | Stale | LSDiff | LSTim |
| 0 | stratum+tcp:/ | /stratum.antpool.co | m:3333 | sherryiyi | Alive | 16.4K | 111 | 0 | 596 | 0 | 10,475,520 | 0 | 0 | 0 | 2,756 | 0 | 16,384 | 0:00:0 |
| 1 | stratum+tcp: | //stratum.antpool.co | om:443 | sherryiyi | Alive | | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Never |
| 2 | stratum+tcp: | //stratum.f2pool.com | m:3333 | antminer.1 | Alive | 1.02K | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Neve |
| HW | | 9 | | | | | 115 | | 596 | 0 | 0.0001% | 0 | 0 | 0 | 2,756 | 0 | | |
| AntMiner | | | | | | | | | | | | | | | | | | |
| Chain# | ASIC# | Frequency | GH/S(RT |) HW | Temp | (PCB) | Temp(| Chip) | | | | | ASIC st | atus | | | | |
| 1 3 | 63 63 | 600 600 | 4311.09 4309.88 | 2 7 | 6 | 56 57 | 92 80 | | | 000 | 000000 000000 | 0 00000000 | 00000000 | | 0000 0000000 | 0000000 | | |
| Far | # | Fan1 | | Fan2 | | Far | 3 | Far | 14 | F | an5 | | Fan6 | | Fan7 | | Fan | .8 |
| Speed (| r/min) | 1,800 | | 0 | | 0 | | 0 | | | 0 | | 0 | | 0 | | 0 | |



7 System Configuration and status

7.1 System Upgrading

You can upgrade the miner's firmware on the 'System > Upgrade' page.

| MINER | | | |
|--|--|------------------------|--|
| System Miner Configuration Miner Status Network | | | |
| Overview Administration Monitor Kernel Log Upgrade Reboot | | | |
| Upgrade | | | |
| Backup / Restore Click "Generate archive" to download a tar archive of the current configuration files. | To reset the firmware to its initial state, click "Perform reset" (only possible | with squashfs images). | |
| Download backup: | D Generate archive | | |
| Reset to defaults: | Perform reset | | |
| To restore configuration files, you can upload a previously generated backup archive | here, | | |
| Restore backup: | Choose File No file chosen | Upload archive | |
| Flash new firmware image Upload a sysupgrade-compatible image here to replace the running firmware. Check | "Keep settings" to retain the current configuration. | | |
| Keep settings: | * | | |
| Image: | Choose File No file chosen | 3 Flash Image | |
| | Coopright & 2013-2014, B | Rimain Technologies | |

'Keep setting' is chosen by default and should be enabled if you want to keep your current settings. You should deselect this option if you are trying to return the miner to default settings.

Click 'Browse' button to choose upgrade file. Select the upgrade and click the 'Flash image' button. The interface will display if the firmware can be upgraded and download the software. During the upgrade process, you need to **wait patiently, and must keep power on, otherwise, the AntMiner can only be fixed with returned to factory.** You will see below screenshot after upgrading successfully.



Clicking the 'Reboot' button will restart the miner so it can load the new software. Clicking 'Go Back' will keep the AntMiner mining before switching to the new software when it is restarted next time or power cycled.



7.2 Password Modification

The AntMiner login password can be changed on the 'System->Administration' page. Once modified, press 'Save and Apply' to save the new password.

| ANTMINER | |
|---|---|
| System Miner Configuration Miner Status Network | |
| Overview Administration Monitor Kernel Log Upgrade Reboot | |
| Password | |
| Changes the administrator password for accessing the device | |
| Current Password | Current Password |
| New Password | New Password |
| Confirmation | Confirmation Password |
| | |
| | Save&App |
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7.3 Software Version

You can check which version of the software you are currently running on the 'System > Overview' page. 'File System version' displays the date of the firmware your miner use. In the example below, the miner is using 20160527 firmware.

| System Miner Configuration Miner Status | Network | |
|---|--|--|
| Overview Administration Monitor Kernel | Log Upgrade Reboot | |
| verdew | | |
| verview | | |
| System | | |
| Miner Type | AntMiner S9 | |
| Hostname | antMiner | |
| Model | GNU/Linux | |
| Hardware Version | 0.1.1.0 | |
| Kernel Version | Linux 3.10.31-ltsi-00003-qcf03eb9 #81 SMP Mon Apr 25 11:20:36 CST 2016 | |
| File System Version | Fri May 27 11:57:58 CST 2016 | |
| Cgminer Version | 4.9.0 | |
| Uptime | 1 | |
| Load Average | 0.70, 0.71, 0.68 | |
| Memory | | |
| Total Available | 27540 kB / 1016172 kB (3%) | |
| Free | 988632 kB / 1016172 kB (97%) | |
| Cached | 0 kB / 1016172 kB (0%) | |
| Buffered | 0 kB / 1016172 kB (0%) | |
| Network | | |
| IP Status | Type: DHCP Address: 192.168.20.30 stbp | |

7.4 Restore Initial Setting

There is a 'Reset' button on the right hand side of the ETH port, next to the green and red LED light. Power on miner and let it run for 5 minutes, then press and hold the reset button for 10 seconds in order to restore to the default settings and reboot. The red LED will flash once every 15 seconds automatically if the reset is operated successfully.