

# Antminer U2 V1.2 ASIC Bitcoins Hash BM1380 test

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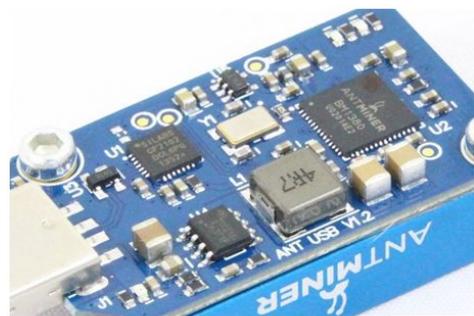
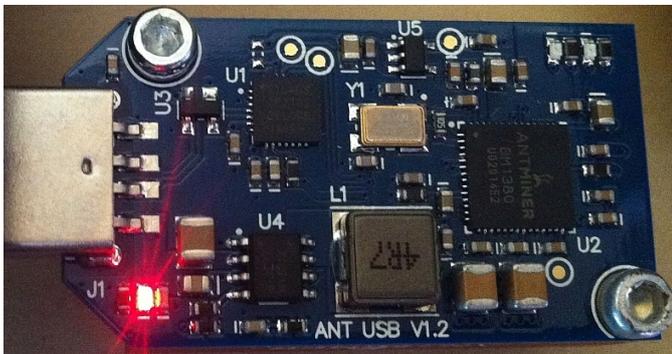
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## Abstract

A brief introduction to a test conducted on USB device Antminer V1.2 based on the ASIC BM1380 with the tool **cgminer 4.4.0** with calculations around 1.5 GigaHash/sec.

*Keywords:* Antminer, bitcoins, BM1380, mining, wallet

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<http://www.amazon.co.uk/Bitmain-AntMiner-U2-Bitcoin-miner/dp/B00ITR1X16>

## 1. Introduction

In June 2014, I so tested the Antminer U2 USB interconnected to a Windows 7 laptop for testing purpose and paid it US \$16.00. This ASIC is provided by *Bitmain Technologies Limited* <https://www.bitmaintech.com> but I got mine from <http://www.aliexpress.com>. The goal for me was definitely not to gain any money but just become familiar with the **bitcoins** vocabulary and techniques.

The Antminer U2 from Bitmain works on SHA256 cryptocurrencies with up to a theoretic 2GH/S speed and is based on ASIC BM1380.<sup>1</sup>

## 2. Antminer U2 test steps

1. Review [startbitcoin.com](http://startbitcoin.com)<sup>2</sup>

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1. [http://buy-antminer.com/guide/datasheet/BM1380\\_Datasheet\\_v1.0.pdf](http://buy-antminer.com/guide/datasheet/BM1380_Datasheet_v1.0.pdf)

2. <http://www.startbitcoin.com>

2. Get your Bitcoin wallet <https://bitcoin.org/en/download>, this is a wallet.dat file.
3. Get Bitcoin Core <https://bitcoin.org/en/download>, at the time of the test I used a Version 0.9.2.1. When installed the process is bitcoin-qt.exe. At startup the tool is indicating that it is loading the blocks index. A debug.log is created, main subdirectories created are database, chainstate and blocks.
4. Become member of a pool like <http://mining.bitcoin.cz>.
5. Get BFGminer <http://bfgminer.org>, at the time of this test I used a version 4.4.0-win64.
6. Run the Bitcoin Core tool until having a block (can take days...).
7. Install a generic USB driver <http://zadig.akeo.ie/>, at the time of this test I used Zadig v2.1.0. The device was detected as

"CP2102 USB to UART Bridge Controller in my case.

8. Plug the USB device, if OK the Red LED should be on.
9. Run Bfgminer, provide the url which is with bitcoin.cz : startum.bitcoin.cz :3333 and the login/password.

### 3. Bitcoins



According to wikipedia,<sup>3</sup> Satoshi Nakamoto is a person or group of people who created the Bitcoin protocol.

### 4. Antminer U2 Specifications

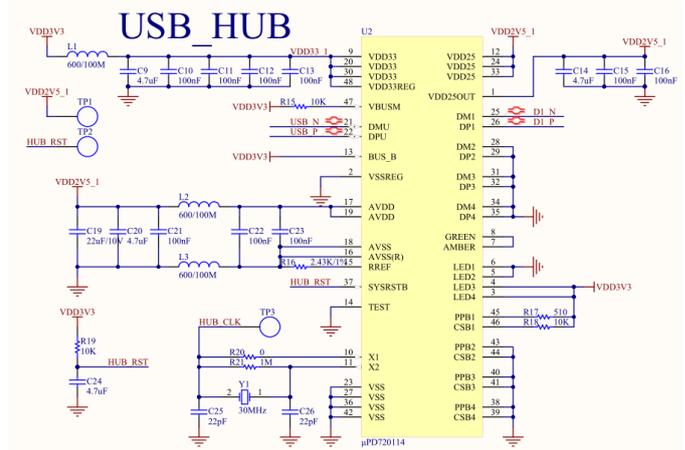
- Power : 1.2-2 Watts
- USB version : 3.0
- Detailed model : ASIC Bitcoins U2 V1.2  
Hash : BM 1380 U020114E2

#### 4.1. ASIC Control Unit schema part

Control board PCB was provided as "open-source" with PCB schema<sup>4</sup>. I reproduce herebelow only the schema around the ASIC BM1380 aka U2.

3. [http://en.wikipedia.org/wiki/Satoshi\\_Nakamoto](http://en.wikipedia.org/wiki/Satoshi_Nakamoto)

4. Original schema from Bitmain Technologies : ANT\_Miner\_CtrlUnit\_V1.2.pdf



### 5. cgminer

Output example from cgminer version 3.12.3 :

```
cgminer version 3.12.3 - Started: [2014-02-14 14:50:35]
%-----
%(5s):1.647G (avg):1.600Gh/s | A:0 R:0 HW:20 WU:22.5/m
%ST: 2 SS: 0 NB: 51 LW: 0 GF: 0 RF: 0
%Connected to
%127.0.0.1 diff 2.62G without LP as user username
%Block: c0d78cc9... Diff:2.62G Started: [17:38:39] Best share:
21.3K
%-----
%[Pool management [S]ettings [D]isplay options [Q]uit
%ANU 0: | 1.595G/1.600Gh/s | A:0 R:0 HW:20 WU
:22.5/m
%-----
%[2014-02-14 17:21:13] Network diff set to 2.62G
```

Output example from cgminer version 4.4 :

```
cgminer version 4.4.0 - Started: [2014-07-12 18:02:51]
(5s):1.593G (1m):1.327G (5m):486.9M (15m):183.0M (avg):1.593Gh/s
A:48 R:0 HW:0 WU:21.8/m
Connected to startum.bitcoin.cz diff 4 with stratum as user
Block: ac5 0... Diff:16.8G Started: [18:02:51] Best share: 252
[USB management [Pool management [S]ettings [D]isplay options [Q]uit
0: ANU 0 : | 1.593G / 1.593Gh/s WU:21.8/m
[2014-07-12 18:02:49] Pool 0 difficulty changed to 16
[2014-07-12 18:02:50] Probing for an alive pool
[2014-07-12 18:02:51] Network diff set to 16.8G
[2014-07-12 18:03:05] Accepted 0bff8 3 Diff 21/16 ANU 0
[2014-07-12 18:03:34] Pool 0 difficulty changed to 4
[2014-07-12 18:03:34] Stratum from pool 0 requested work restart
[2014-07-12 18:03:35] Accepted 0b46d1b1 Diff 23/4 ANU 0
[2014-07-12 18:03:42] Accepted 0e4ec21f Diff 18/4 ANU 0
[2014-07-12 18:03:44] Accepted 09cc6329 Diff 26/4 ANU 0
[2014-07-12 18:03:44] Accepted 334e525e Diff 5/4 ANU 0
[2014-07-12 18:04:11] Accepted 2e6b2418 Diff 6/4 ANU 0
[2014-07-12 18:04:28] Accepted 12735ad2 Diff 14/4 ANU 0
[2014-07-12 18:04:31] Accepted 3e0ab7d3 Diff 4/4 ANU 0
[2014-07-12 18:04:40] Accepted 010438c2 Diff 252/4 ANU 0
```

### 6. Conclusion

Based on the dashboard from <https://mining.bitcoin.cz/accounts/profile/> my Total Reward was 0.00012062 BTC... I found this pragmatic approach very useful to have a better understanding of the cryptocurrencies world.