

# **2PAC BM1384 USB Stick Miner User Guide**

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GekkoScience

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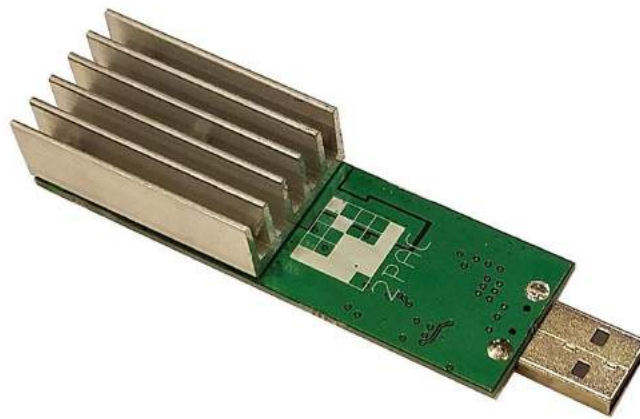
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## 1. The First Glance

Currently the most efficient USB miner ever manufactured, the 2PAC Compac features 2 Bitmain BM1384 chips (this is the same chip as in the Bitmain S5). It has a fully adjustable regulator design that gives you a core voltage range of 550mV to 800mV. Typical hasrate is 15+gh/s depending on clock rate. Efficiency is 0.31-0.35 watts per gh



## 2. Accessories & Connection

### 2.1 Accessories

You will need a **powered** USB hub that is capable of supplying at least 1.0 - 2.0 amps per port.

### 2.2 Connection

- a) Connect your USB hub to your host computer. Make sure the power adapter is plugged in as well.
- b) Insert the 2PAC BM1384 USB Stick Miner into the USB hub via the USB port. Please note:

Connection order must be “a)” first, and then “b)”. Order cannot be reversed.

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## 3. Setup (Windows)

Download cgminer and zadig winUSB driver to your computer.

VH Modified cgminer from here:

<http://23.108.83.14/images/cgminer-4.10.0-windows-gekko-b682468.7z>

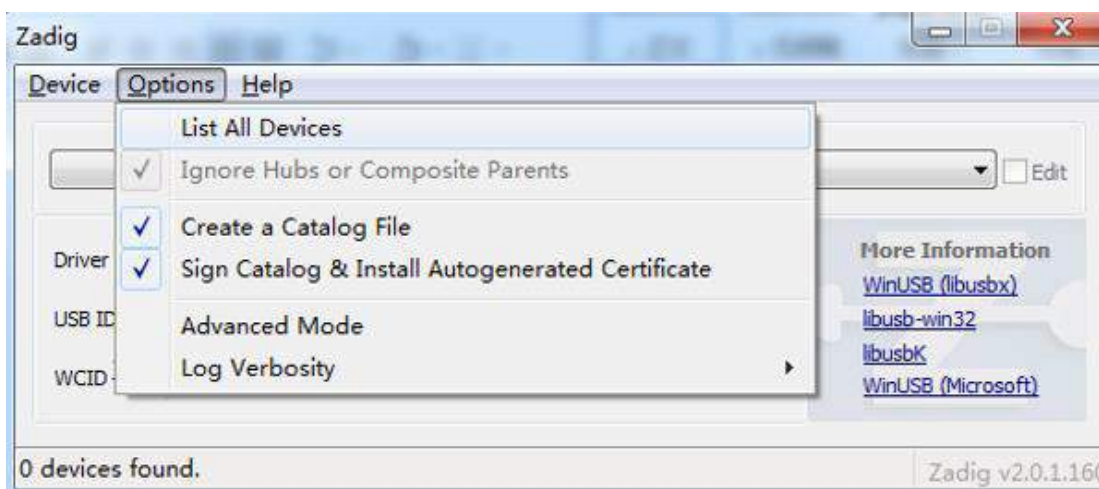
Zadig WinUSB Driver:

<http://zadig.akeo.ie/>



1> Plug in your 2Pac BM1384 USB miner.

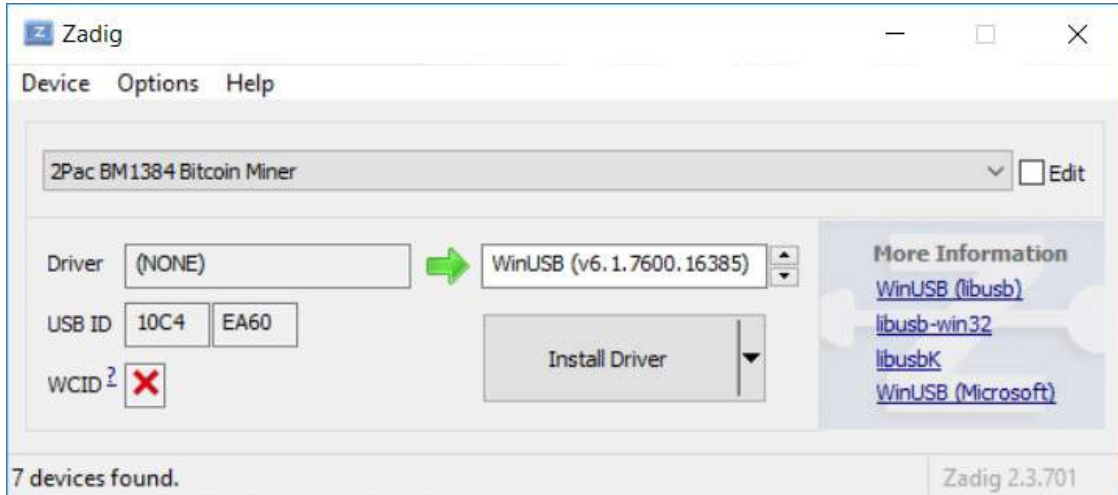
2> Open Zadig and click "Options -> List All Devices"



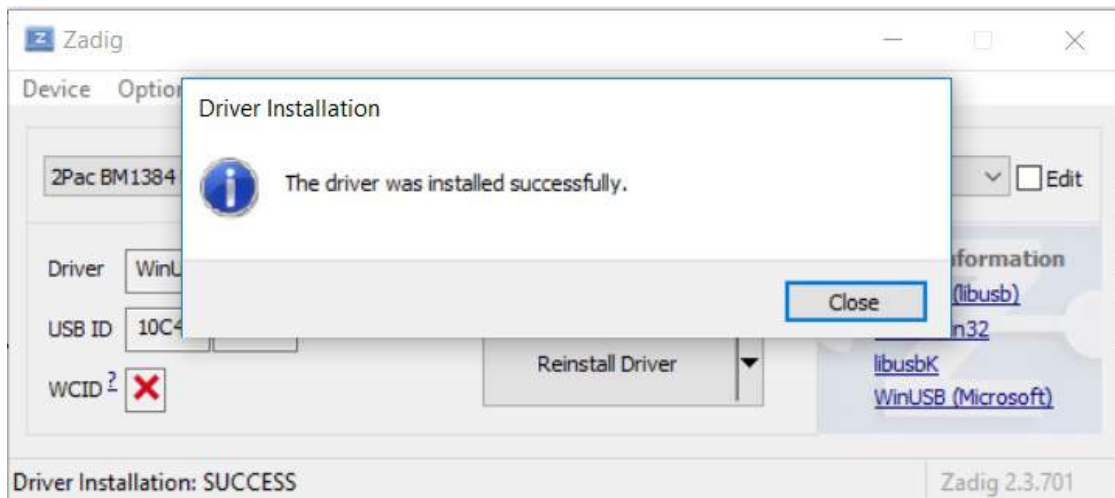
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3> Select 2Pac BM1384 Bitcoin Miner, and then click “Replace Driver”



4> If it is successful you will see the following message:



5> Run cgminer following commands below:

```
cgminer.exe --gekko-2pac-freq 200  
-o stratum+tcp://solo.ckpool.org:3333  
-u (your username here) -p (your password here)
```

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## 4. Setup (Linux)

Linux cgminer build steps

Ubuntu 16.04.1 LTS new install.

Default Install (+OpenSSH server)

### Code:

```
sudo apt-get update
sudo apt-get upgrade -y
```

```
sudo apt-get install -y build-essential git autoconf automake libtool pkg-config libcurl4-openssl-dev libudev-dev
```

```
mkdir -p git/vthoang; cd git/vthoang
git clone https://github.com/vthoang/cgminer.git
cd cgminer
```

```
CFLAGS="-O2 -march=native" ./autogen.sh --enable-gekko
make -j 2
```

## 5. Setup (Debian)

Debian 8.7.1 new install.

Default Install (No desktop environment, + SSH Server)  
(\*do not specify root password to enable sudo)

or Raspbian - Kernel version: 4.4 (Raspberry Pi)

### Code:

```
sudo apt-get update
sudo apt-get upgrade -y
```

```
sudo apt-get install -y build-essential git libusb-1.0-0-dev libusb-1.0-0 libcurl4-openssl-dev libncurses5-dev libudev-dev screen
libtool automake pkg-config libjansson-dev
```

```
mkdir -p git/vthoang; cd git/vthoang
git clone https://github.com/vthoang/cgminer.git
cd cgminer
```

```
CFLAGS="-O2" ./autogen.sh --enable-gekko
make -j 2
```

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## 6. Basic Troubleshooting (Q&A)

### **Q: Does the miner need cooling?**

A: If you run the miners over about 100MHz it is strongly advised to cool them with a fan. The cooling requirements are fairly low and unless you're trying to run 250MHz or above almost any fan at all will do.

### **Q: Can I run this cgminer build with the original Compact?**

A: Yes. The original Compac will register with separate device name from the 2pac.

### **Q: How can I set a different frequency for the 2Pac vs the Compact?**

A: cgminer will accept the following parameters for the stick.  
`--gekko-2pac-freq 150`

### **Q: I have compac sticks running with my 2Pacsticks How do I set the freq?**

A: cgminer will accept the following parameter for the stick  
`--gekko-compac-freq 150`

### **Q: How many 2Pac(s) can I run at a time?**

A: You can run as many as your USB hub can power. Please remember you will need a powered USB hub that can do 1-2 amps per port for all the ports you wish to use.

### **Q: How do I get the latest version of the driver and code?**

A: Updates to main cgminer and gekko updates will be checked in regularly. If you are following along with the instructions, enter the cgminer directory, pull and rebuild:

```
cd ~/git/vthoang/cgminer/  
git pull  
...
```

### **Q: How to get past the “USB init, open device failed” and “you don't have privilege to access” ?**

A: Use the following code:  
`cd ~/git/vthoang/cgminer/  
sudo usermod -G plugdev -a `whoami` su-  
do cp 01-cgminer.rules /etc/udev/rules.d/  
sudo reboot`

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## 7. VCore Frequency and Power Draw/Current

Please refer to the below table for rough guide to power and current draw according to frequency.

		Frequency													
		50	100	125	150	175	200	225	250	275	300				
Vcore	1.26	2.07	3.67	4.47	5.27	6.07	Power (Watts)								
	1.32	2.41	4.06	4.89	5.73	6.58						7.43			
	1.36	2.64	4.32	5.18	6.04	6.91						7.80	8.71		
	1.40	2.87	4.59	5.46	6.35	7.25						8.18	9.13	10.13	
	1.46	3.21	4.98	5.88	6.81	7.76						8.74	9.76	10.84	12.02
	1.50	3.44	5.24	6.17	7.12	8.09						9.11	10.18	11.32	12.57
		Frequency													
		50	100	125	150	175	200	225	250	275	300				
Vcore	1.26	0.41	0.73	0.89	1.05	1.21	Current Draw (Amps)								
	1.32	0.48	0.81	0.98	1.15	1.32						1.49			
	1.36	0.53	0.86	1.04	1.21	1.38						1.56	1.74		
	1.40	0.57	0.92	1.09	1.27	1.45						1.64	1.83	2.03	
	1.46	0.64	1.00	1.18	1.36	1.55						1.75	1.95	2.17	2.40
	1.50	0.69	1.05	1.23	1.42	1.62						1.82	2.04	2.26	2.51

### Predicted GH Speeds Vs Frequency

Freq	GH	Vcore	Power	J/GH
100	11.00	1.26	3.67	0.33
125	13.75	1.26	4.48	0.33
150	16.50	1.26	5.27	0.32
175	19.25	1.26	6.12	0.32
200	22.00	1.32	7.43	0.34
225	24.75	1.36	8.73	0.35
250	27.50	1.40	10.11	0.37
275	30.25	1.46	12.25	0.40
300	33.00	1.50	13.98	0.42



## 8. Acknowledgements

This setup guide could not have been put together without the help and contribution of many people. Big thanks to the following people on [bitcointalk.org](http://bitcointalk.org) forum:

vh  
sidehack  
kintay

Following [bitcointalk.org](http://bitcointalk.org) threads;

GekkoScience 2Pac BM1384 Stickminer Official Support Thread  
<https://bitcointalk.org/index.php?topic=1764803>

GekkoScience 2PAC - 2x BM1384 USB Stick Miner  
<https://bitcointalk.org/index.php?topic=1718358>