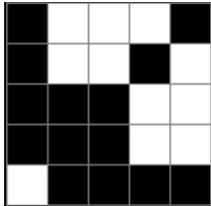


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GekkoScience / MinersSupply

NewPac BM1387 USB Stick Miner Instruction Manual & User Guide

Official Manufacturer Support Forum:

GekkoScience NewPac Support Thread:

<https://bitcointalk.org/index.php?topic=5053833.0>

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1. The First Glance

Currently the most efficient USB miner ever manufactured, the NewPac features two Bitmain BM1387 ASIC chips (this is the same chip as in the Bitmain Antminer S9). It has a fully adjustable regulator design that gives you a core voltage range of 550mV to 830mV. Typical hashrate is 35+Gh/s depending on clock rate. Expected performance can be calculated using the following formula: $0.228 * \text{MHz} = \text{GH}$



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2. Accessories & Connection

2.1 Accessories

You will need a **powered** USB hub capable of supplying at least 1.0 - 2.0+ amps per port. The GekkoScience USB Hub was engineered for these miners, & is highly recommended!

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 NewPac BM1387 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-4.11.1-windows-gekko-3339a51.7z>

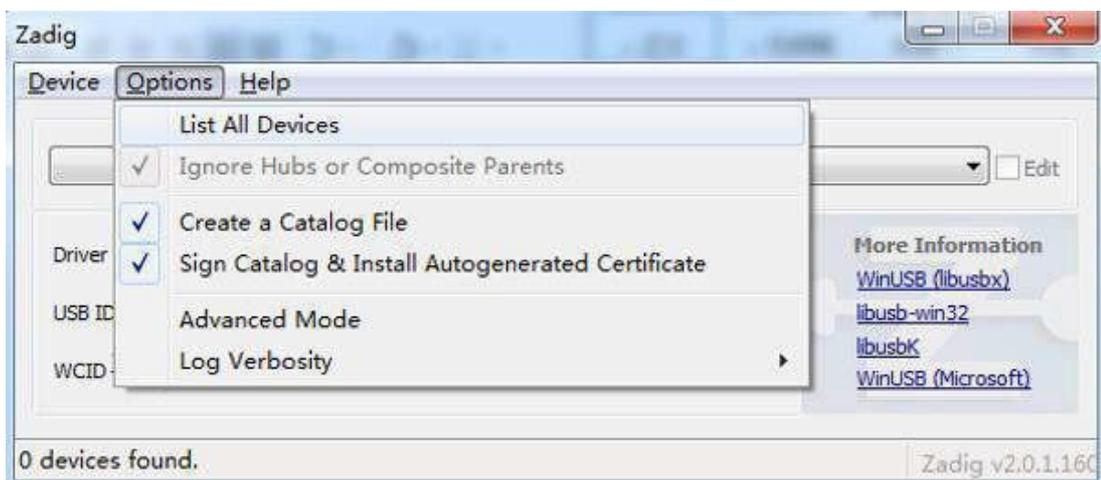
Zadig WinUSB Driver:

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



1> Plug in your NewPac BM1387 USB miner.

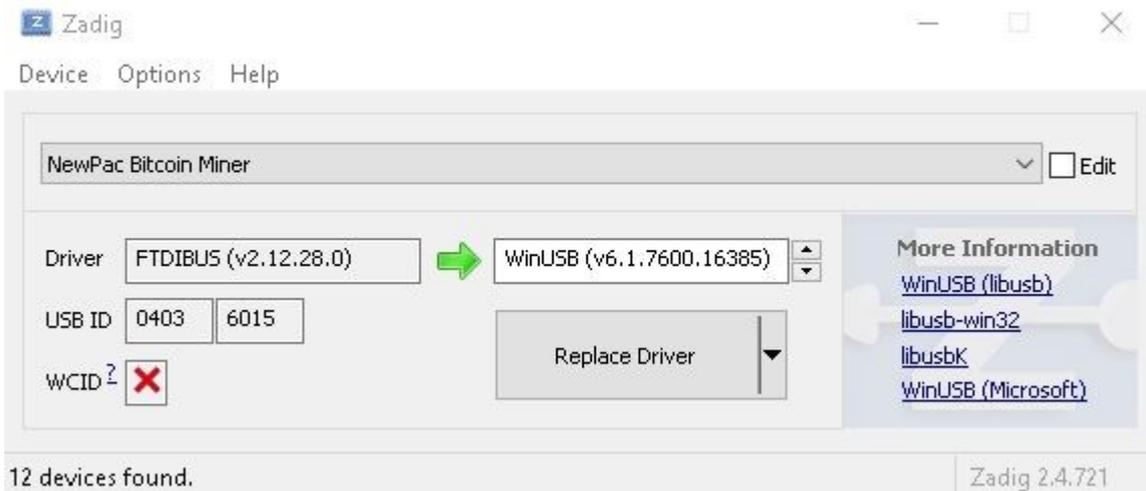
2> Open Zadig and click "Options -> List All Devices"



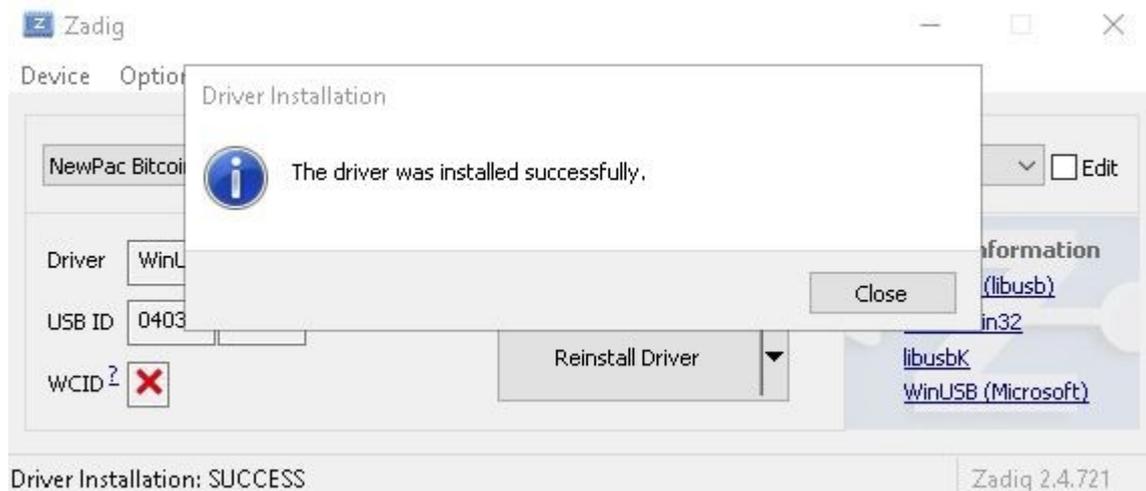
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3> Select NewPac BM1387 Bitcoin Miner, and then click “Replace Driver”



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



5> Run cgminer following commands below:

```
cgminer.exe -gekko-newpac-freq 100
```

```
-o stratum+tcp://solo.ckpool.org:3333
```

```
-u (your username here) -p (your password here)
```

- Enable AsicBoost With the Following Flag: --gekko-newpac-boost

ATTN: Not every mining pool accepts AsicBoost enabled miners, and will need turned OFF in order to connect with a pools that do not support AsicBoost. Please check with your pool operator and/or disable AsicBoost by removing the syntax -gekko-newpac-boost

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Now, compile all syntax (commands/codes) to run cgminer:

- In the same folder you downloaded the VH/Gekko version of cgminer, create a new Notepad/.txt file, and add the following text (some of which you will need to change, according to your mining pools instructions):

```
cgminer.exe -o stratum+tcp://stratum.kano.is:3333 -u your.username -p x --gekko-newpac-freq XXX --gekko-newpac-boost
```

[replace "-o" with your pool, "-u" with your username, "-p" with your password, "XXX" with desired frequency (i.e. 250), remove AsicBoost syntax when mining on pools that do not support AsicBoost]

- Now, click "Save File As", change from ".txt file" to "all files", and name as follows: whatever-name-u-want.bat

- Double click the file you just created, and cgminer should appear on your screen, and begin mining

ATTN:

[Most major mining pools offer specific instructions on how to fill the information in your .bat/command line file with the required pool information. Please use the official manufacturer support thread for usage instructions and examples. Questions are generally answered within hours!]

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4. Setup (Linux) [\[Visit Support Thread for Updated Instructions\]](#)

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) [\[Visit Support Thread for Updated Instructions\]](#)

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
```

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 200MHz or above almost any fan at all will do.

Q: Can I run this cgminer build with the original Compac?

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, Compac, or NewPac?

A: cgminer will accept the following parameters for the stick.
--gekko-2pac-freq 150 or --gekko-newpac-freq 100 or --gekko-compac-freq 100

Q: How many NewPac sticks 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, Power Draw/Current, Voltage Adjustment

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

Frequency	GH/s	Watt (P)	Watt	J/GH (P)	J/GH
100	22.8	3.553	2.645	0.15583	0.11601
125	28.5	4.840	3.158	0.16982	0.11081
150	34.2	N/A	3.626	-	0.10602
175	39.9	N/A	4.137	-	0.10368
200	45.6	N/A	4.662	-	0.10224
225	51.3	N/A	5.184	-	0.10105
250	57.0	N/A	5.716	-	0.10028
275	62.7	N/A	6.252	-	0.09971
300	68.4	N/A	6.795	-	0.09934

(P) = Passively Cooled
(P) > 100MHz = Increased risk of Thermal Runaway

Voltage Adjustment (adjusting voltage for overclocking will void warranty):

(for advanced users ONLY, will likely void warranty)



Approximate position of potentiometer on stock units. Notice flat part of screw head, and use it as your reference point.

 To increase voltage, turn screw clockwise. Make adjustments in very small increments, as even the slightest turn will change voltage!

 To decrease voltage, turn screw counterclockwise. Make adjustments in very small increments, as even the slightest turn will change voltage!

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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 forum:

sidehack
vh
rockmoney
MinersSupply
Klintay

Official Manufacturer Support Forum:

GekkoScience NewPac Support Thread:

<https://bitcointalk.org/index.php?topic=5053833.0>

**FOR QUESTIONS, SUPPORT, TROUBLESHOOTING, COMMENTS, AND
ALL OTHER NEEDS, PLEASE USE THIS INVALUABLE RESOURCE!
RMA (Return Merchandise Authorization) WILL NOT BE ISSUED
WITHOUT FIRST SEEKING MANUFACTURER & COMMUNITY SUPPORT
FIRST!**