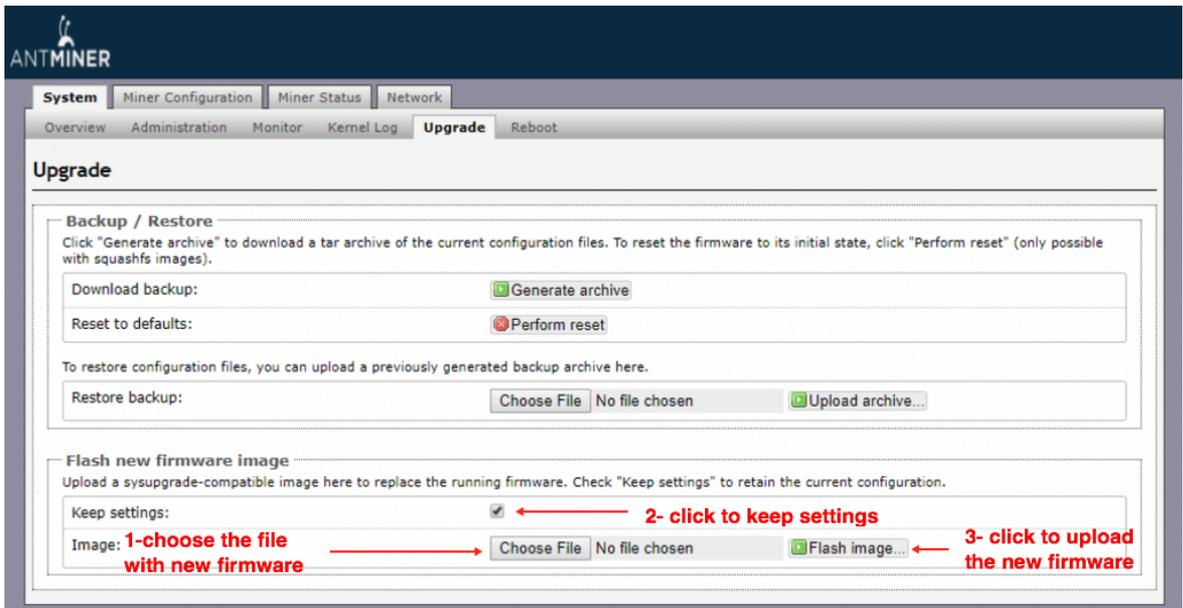


# USER MANUAL

## FIRMWARE FOR ANTMINER S9, S9i, S9j with AsicBoost

### Firmware upload and language selection:

- 1) Use the web interface of the original BITMAIN firmware, System - Upgrade - Flash new firmware image and select the file with the new firmware, click - keep settings (save pool, worker, password) and click FLASH IMAGE

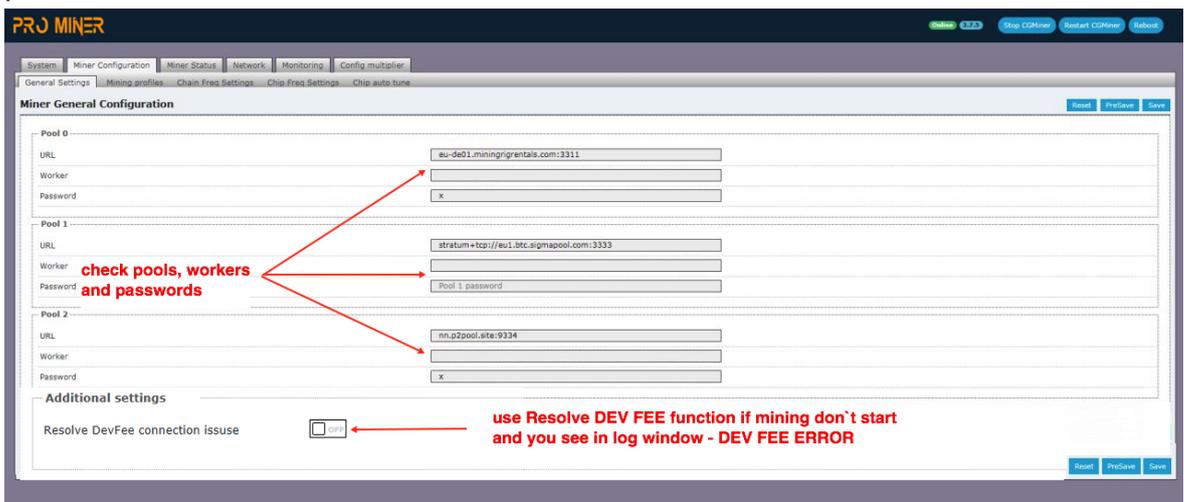


- 2) Next, write only the IP address of your ASIC in the browser ( example 192.168.1.1) and if you see the original BITMAIN firmware, press CTRL+F5 and the cache will be updated.
- 3) Choose System - Regional settings -UI language and select your language RU-EN-CN-AR)



### Overclocking and downvolt using the profile (auto mode for beginners)

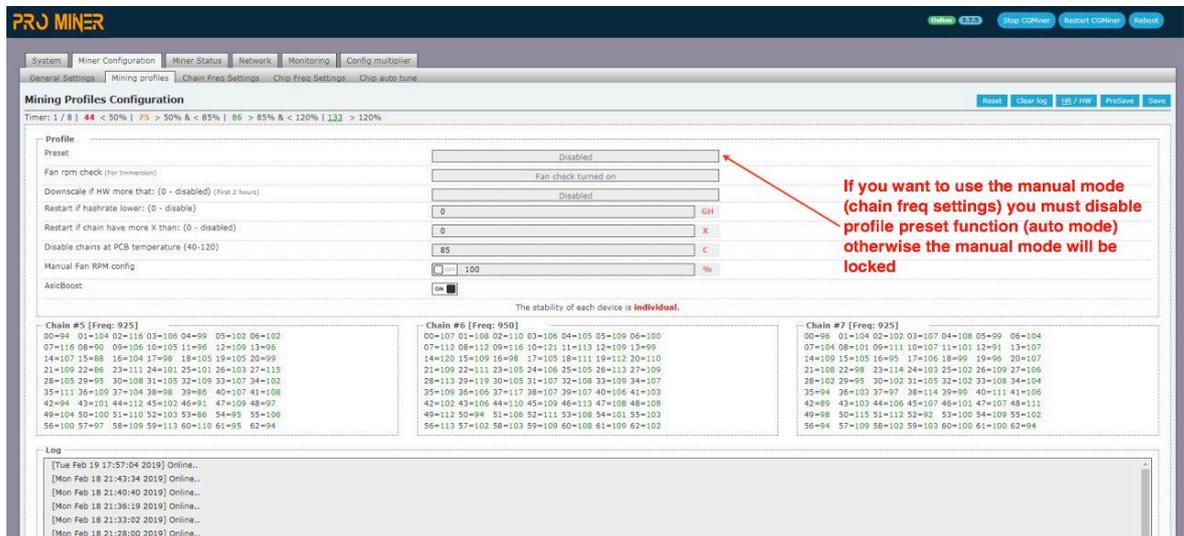
- 1) Choose the Miner Configuration - General settings and check the settings of pools, workers and passwords



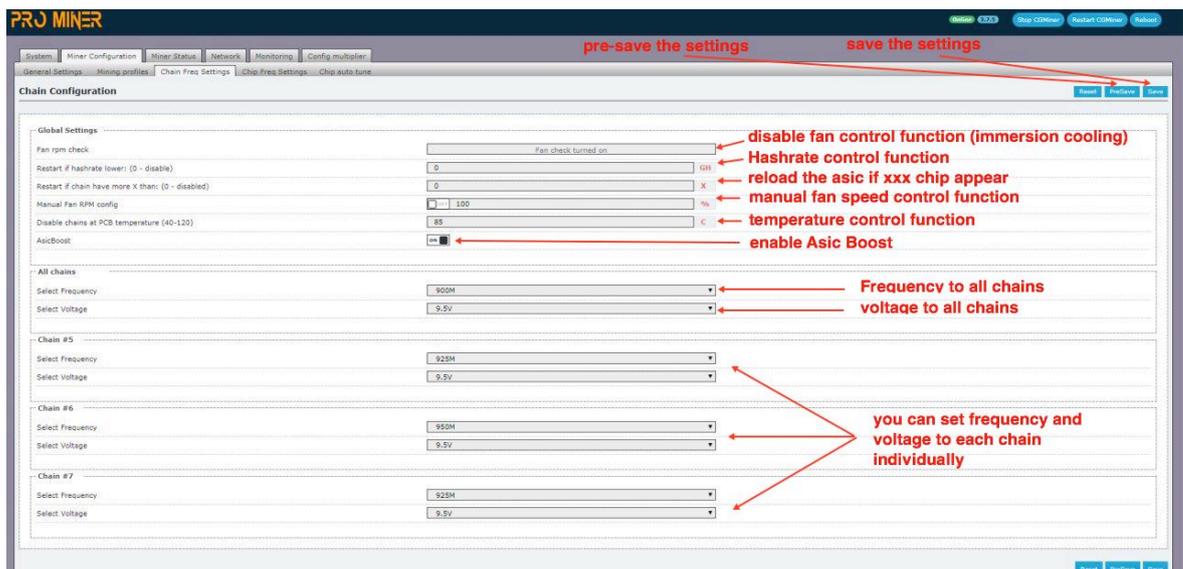


## Overclocking and downvolt (manual mode)

- 1) Choose the Miner Configuration - General settings and check the settings of pools, workers and passwords.
- 2) make Sure that the Miner Configuration - MININGS PROFILES - PRESET - SET DISABLE (otherwise, the manual mode will be blocked)

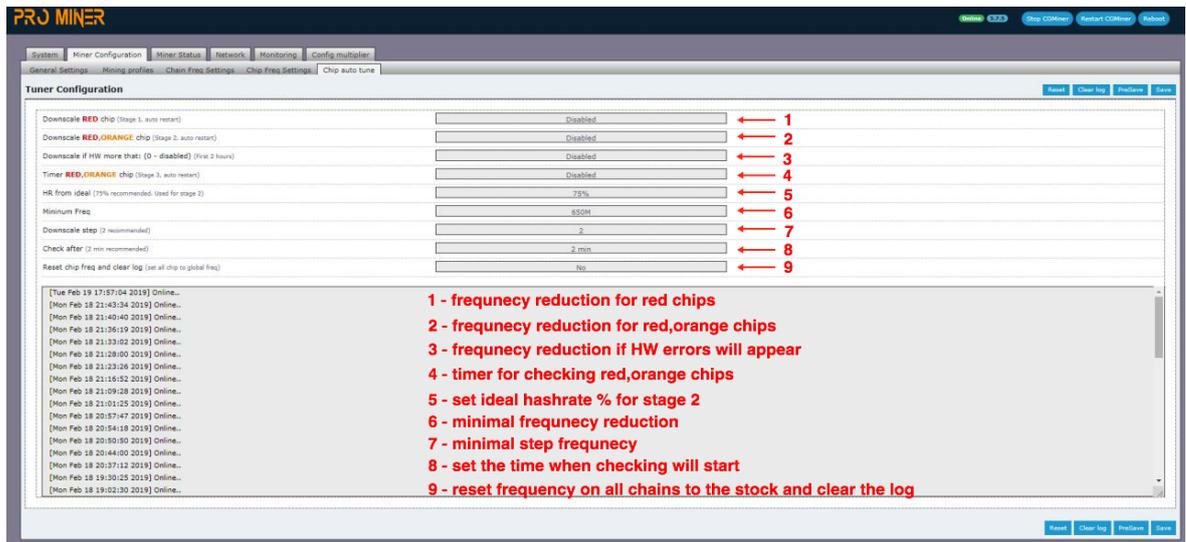


- 3) Choose the Miner Configuration-Chain Freq Settings



- activate the hashrate control function (reload the Asic in the case of falling hash rate ): Restart if Hashrate Lower : 12000 GH=12 TH/s (example)
- activate the temperature control function (ASIC will shutdown in case of too high temperature Disable chains at PCB temperature: (0 = standard temperature - 90s), you can set manually different temperature for the chains
- Enable the ASIC BOOST function (reducing the consumption), Attention your pool must support ASIC BOOST technology, otherwise mining will not start.
- Set frequency and voltage to all chains for overclocking or downvolt Asic (ALL CHAINS), also you can set different frequency and voltage to each chain
- Press the **PRESAVE** button located at the bottom and top of the firmware page

4) Next, choose the CHIP AUTO TUNE and turn on :



- Downscale red CHIP (stage 1) - enable
- Downscale red, orange Chip (stage 2) - enable
- Timer Red, Orange-12 Hr
- Minimal frequency - 400

5) Click the **SAVE** button located at the bottom and top of the page

6) The overclocking Program is set, the ASIC can be set up to 30 minutes and will restart during the setup process ( this is normal )

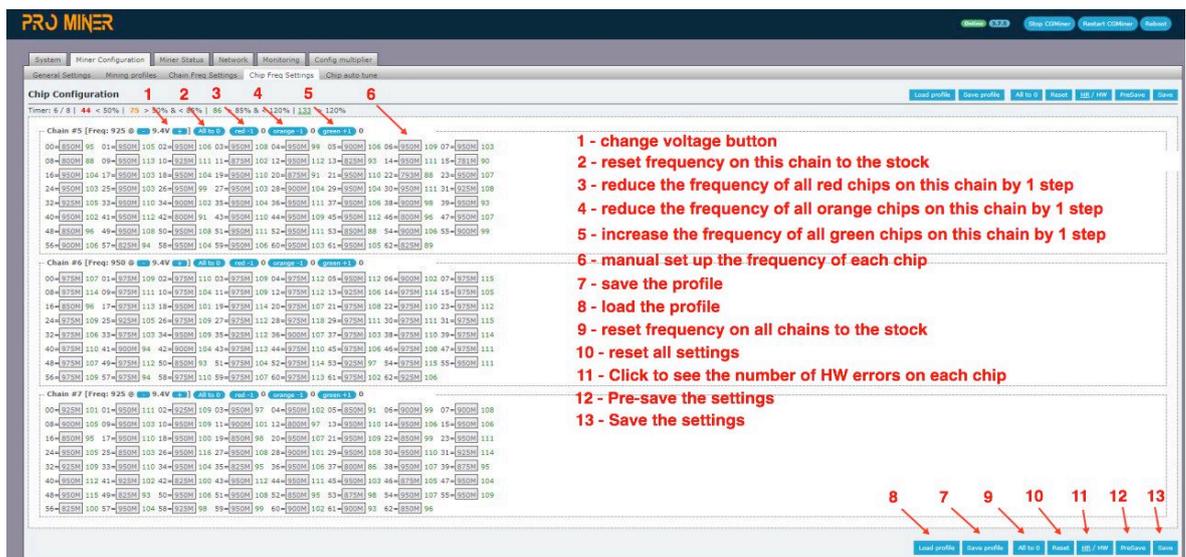
7) You can check the status of the chips in the Miner Configuration - chip Freq Settings

If the AUTO TUNE function is enabled the firmware automatically will tune each chip in the automatic mode and will not be stopped until all the chips will be in the green zone. (the frequency of the red and orange chips will drop)

If you set up the timer (in hours) for stage 3 (AUTO TUNE option) the firmware will check for the appearance of red or orange chips and will drop the frequency until they become green.

Also, you have possibility to change the frequency of each chip manually.

Manual settings allow you to drop the frequency of all the red, orange chips or manually increase the frequency of the green chips to get maximum efficiency from each Asic.



We recommend using the following settings for 1600 watt power supply :  
 Frequency: 750, Voltage: 9.0, avg speed: 16.1 Th/s

We recommend using the following settings for 1800 watt power supply :  
 Frequency: 800 Volt 9.0, avg speed: 17 Th/s

NOTE: You can use lower voltage modes for better energy saving but some ASIC`s will give much lower hashrate than must be and can be not stable, if this happened you need to raise the voltage of this asics

Downvolt modes:

- Frequency: 750, Voltage: 8.8, speed 16.1 Th/s-1450 watt (93 watt - Th/s)
- Frequency: 700, Voltage: 8.6, speed 15 Th/s-1300 watt (86 watt - Th/s)
- Frequency: 631, Voltage: 8.4, speed 13.5 Th/s-1050 watt (78 watt - Th/s)
- Frequency: 550, Voltage: 8.3, speed 11.8 Th/s-880 watt (75 watt - Th/s)

The power consumption in fact may be different and depends on the quality of the Asic and power supply

## Upload the firmware, create CONFIG (overclocking and downvolt settings), create workers on the unlimited quantity of ASICS in one network

1) Download the BTC TOOL program ( [https://url.btc.com/btc-tools-download?\\_ga=2.39099043.1874240382.1550499030-903294307.1550403289](https://url.btc.com/btc-tools-download?_ga=2.39099043.1874240382.1550499030-903294307.1550403289) )

The screenshot shows the BTC Tools v1.2.0 interface. At the top, there are buttons for 'Scan', 'Monitor', 'Config All', 'Config Selected', 'Reboot All', 'Reboot Selected', 'Firmware Upgrade', 'Export', and 'Settings'. Below these are fields for IP Ranges and Pool settings. The main area is a table with columns for IP, Status, Type, Hash Rate RT, Hash Rate avg, Temperature, Fan Speed, Elapsed, Pool 1, Worker, Pool 2, Worker, Pool 3, Worker, and Firmware. A dialog box titled 'Firmware Upgrade' is open, showing a list of ASIC models and a 'Keep settings' checkbox. Red annotations with arrows point to specific elements: '1 - SET THE IP RANGE' points to the IP Range field; '2 - SCAN THE IP RANGE' points to the Scan button; '3 - CLICK FIRMWARE UPGRADE' points to the Firmware Upgrade button; '4 - SELECT THE ASIC MODEL YOU WANT TO UPGRADE' points to the ASIC model dropdown; '5 - SELECT FIRMWARE FILE' points to the firmware file selection area; '6 - click keep settings (to save pools, workers, passwords)' points to the 'Keep settings' checkbox; '7 - CLICK UPGRADE ALL AND CONFIRM' points to the 'Upgrade all' button.

2) Use the BTC TOOL and set the IP range of the ASICS  
 3) Use the UPGRADE function and select the file with the firmware , click keep SETTINGS (to save the POOL settings , workers and passwords) , select Antminer S9, S9i , S9j and confirm the upload of the firmware.

4) After the firmware is uploaded use the web interface of any ASIC with new firmware and choose CONFIG MULTIPLIER-CONFIG

**1 - click dont change if you don't want to change pools or write the new pools (pool 0, pool 1, pool 2)**

**2 - click dont change if you don't want to change the workers or use the function hostname, ip, worker+hostname, worker + ip for creating individual worker for each asic**

**3 - click dont change if you don't want to change password or write the new password**

**Set the ready profile (auto mode)**

**disable the fan control function (only immersion cooling)**

**hashrate control function**

**temperature control function ( 0 = 90 )**

**enable Asic boost**

**If the preset is enable (auto mode) all settings from the manual mode are ingnored!**

**IF PRESET IS ENABLED, ALL SETTINGS BELOW ARE IGNORED!**

**Frequency to all chains**

**voltage to all chains**

**you can set frequency and voltage to each chain individually**

**frequency reduction for red chips**

**frequency reduction for red,orange chips**

**timer for checking red,orange chips**

**set ideal hashrate % for stage 2**

**minimal frequency reduction**

**minimal step frequency reduction**

**set the time when checking will start**

**click for making the config**

Create the config :

- if you don't want to change the current pool, worker and password click : DON'T CHANGE , Skip will appear in the fields
  - if you want to change the current POOL write the new POOLS in the field-0,1,2
  - if you want to set all ASICS to different workers, you can select the ADD function (host name, IP, worker + host name, worker + IP) and all ASICS will get different workers
- 5) Set up the overlocking or downvolt settings using PROFILE (automatic mode ) or in manual mode (ALL CHAINS)
- 6)Turn on the hashrate control function (reload the Asic in the case of falling hash rate ) and the overheating control function (disable chains at PCB temperature)
- 7) turn on the ASIC BOOST function
- 8) turn on AUTO TUNE CHIP :
- Downscale red CHIP (stage 1) - enable
  - Downscale red, orange Chip (stage 2) - enable
  - Timer Red, Orange-set parameter in hours (for example 3 hours)
- 9) Click APPLY and specify the name of the CONFIG and click SAVE

## 10) Choose CONFIG MULTIPLIER - UPLOAD

The screenshot shows the 'Config Multiplier' upload interface in the PRO MINER software. It includes the following elements:

- IP Range:** 192.168.1.1 to 192.168.1.255
- Password:** (Empty field)
- Config:** (Dropdown menu with 'Default selected' button)
- Table of ASICs:**

IP	Version	Hostname	Custom FW	Config upload	Restart
192.168.1.157	Antminer S9 (vriah 3.7.5)	antMiner	yes	OK	OK
192.168.1.155	Antminer S9 (vriah 3.7.5)	antMiner	yes	OK	OK
192.168.1.154	Antminer S9 (vriah 3.7.5)	s46037	yes	OK	OK
192.168.1.152	Antminer S9 (vriah 3.7.5)	s46683	yes	OK	OK
192.168.1.151	Antminer S9 (vriah 3.7.5)	s45997	yes	OK	OK
192.168.1.150	Antminer S9 (vriah 3.7.5)	s46218	yes	OK	OK
192.168.1.149	Antminer S9 (vriah 3.7.5)	s45976	yes	OK	OK
192.168.1.148	Antminer S9 (vriah 3.7.5)	s46016	yes	OK	OK
192.168.1.147	Antminer S9 (vriah 3.7.5)	antMiner	yes	OK	OK

Click to upload the config → **Apply**

- Set the IP RANGE range of the ASIC with new firmware
- if the ASIC password is standard use the ROOT password, if not use other password
- select the config you saved earlier and click APPLY at the bottom of the page.

All Antminer S9, S9i, S9j in the selected IP range will receive the settings from the saved CONFIG.

All other ASIC models in this IP range will not be affected