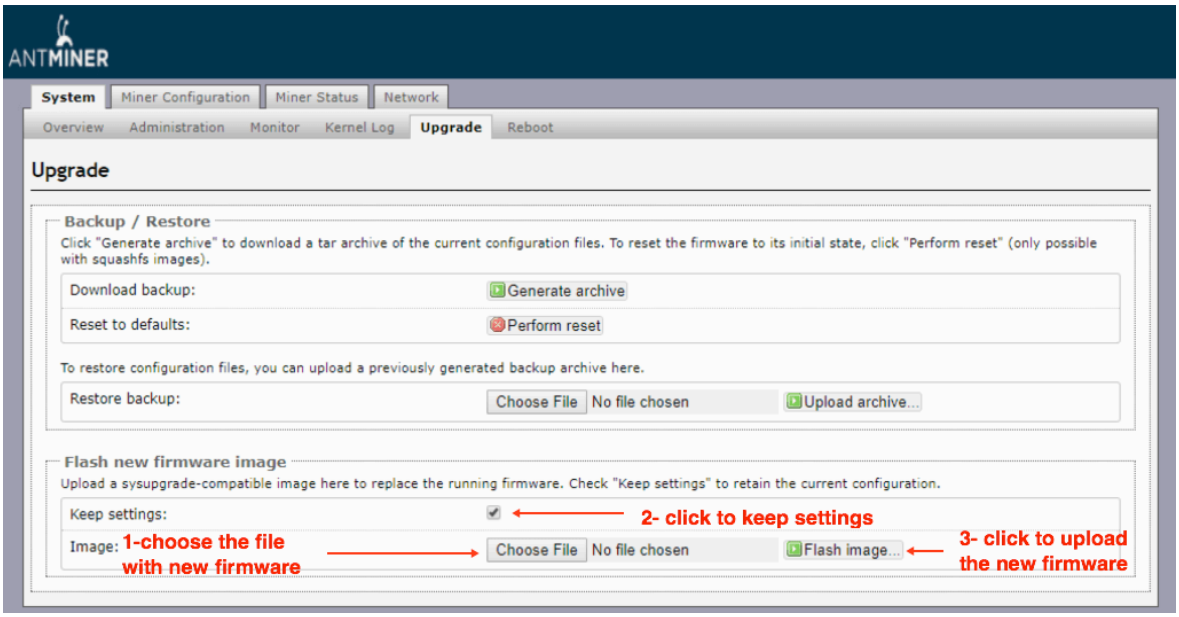
USER MANUAL

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

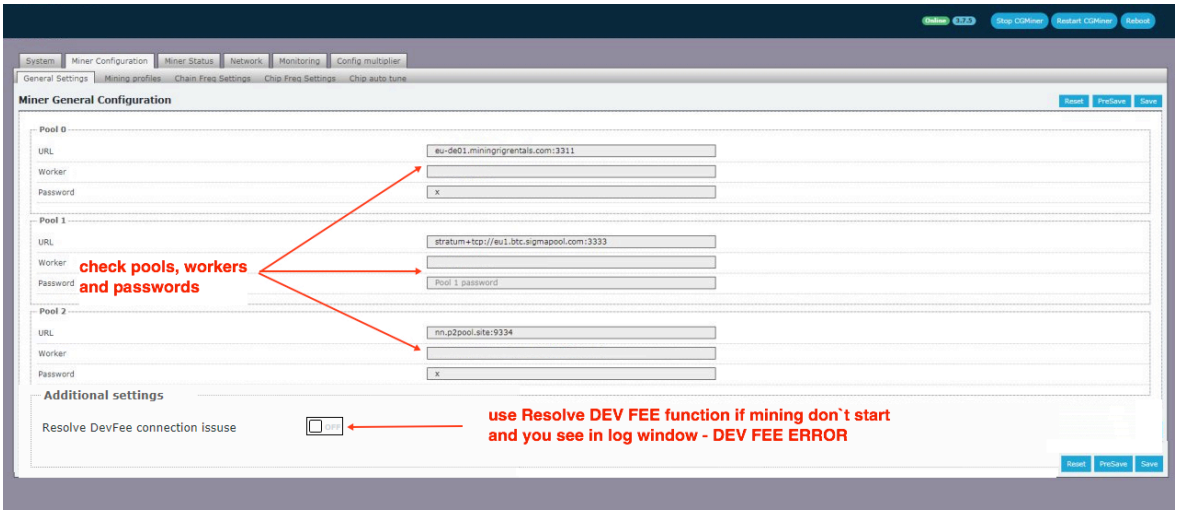


2) Next, write only the IP address of your ASIC in the browser (example 192.168.1.1) and if you see the original BITMAIN firmware, press CTRL+F5 and the cache will be updated.

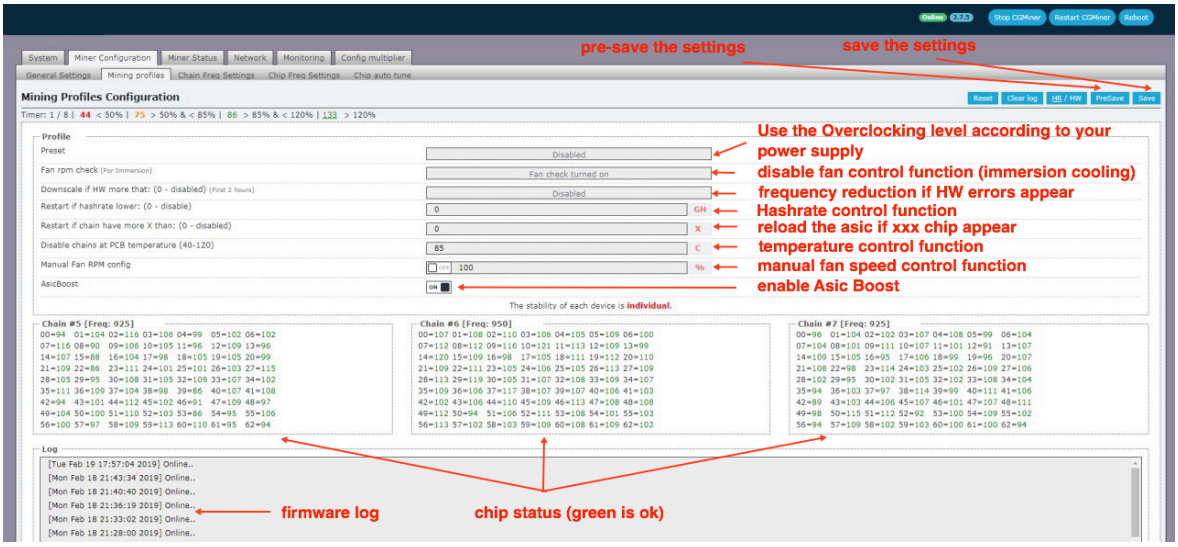
3) Choose System - Regional settings -UI language and select your language RU-EN-CN-AR)

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

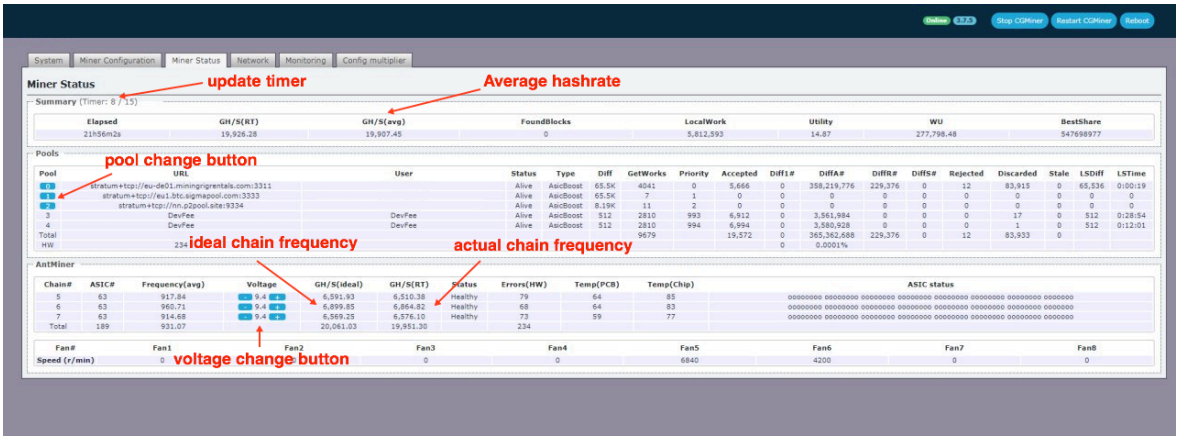
1) Choose the Miner Configuration – General settings and check the settings of pools, workers and passwords



2) Choose the Miner Configuration - Mining Profiles - Preset
Select overlocking or downvolt option from the menu. Use the Overclocking level according to your power supply. We recommend to overlock not more than **16 Th/s** with BITMAIN 1600 watt power supply and not more than **17 TH/s** with 1800 watt power supply.

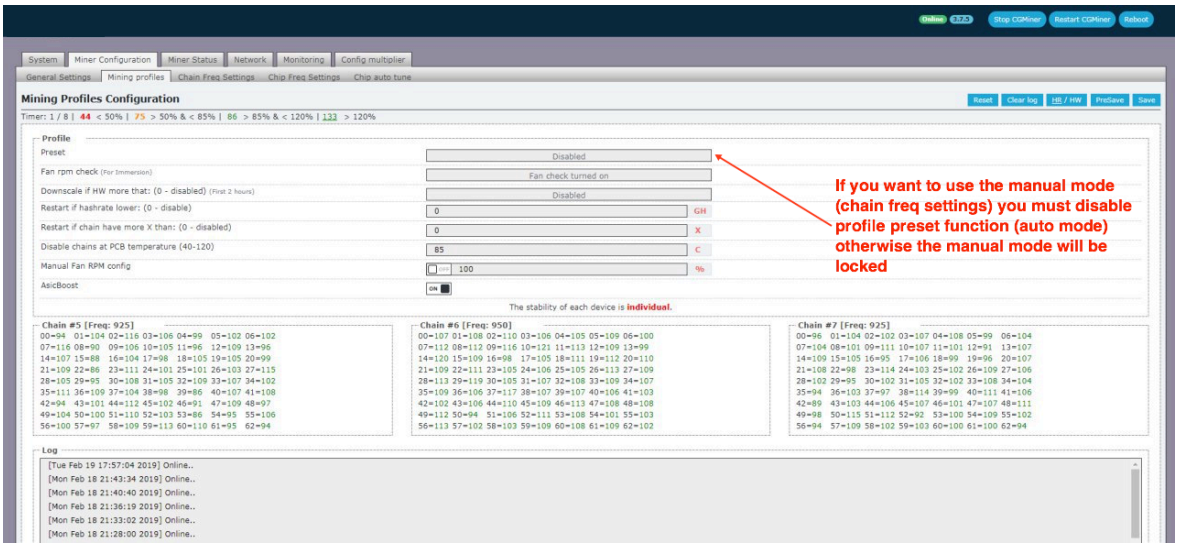


3) If you need to disable the fan control and remove the fans you must enable the Fan RPM check : fan check turn off (**only for immersion cooling**)
4) If you want to enable hashrate control function you need to set the value at which the firmware will reload the ASIC if the chains does not show the required hashrate, Restart if hashrate lower: 12 000 GH=12 TH/s during mining (example)
5)If you want to control the overheating of the device, set the maximum temperature at which the firmware will turn off the ASIC: Disable Chains at PCB at temperature: (0 = standard temperature-90C), you can manually set another value
6) Enable the ASIC BOOST function (to reduce consumption), Attention: your pool must support ASIC BOOST technogoly, otherwise mining will not start.
7) Click the Save button at the bottom or top of the firmware page.
8) Overclocking Program is set, ASIC can be set up to 30 minutes and will be reloaded during the setup process (this is normal)
9) If mining does not start and the logs have the info: DEV FEE ERROR you need to go to the Miner Configuration – General settings and use function: RESOLVE DevFee connection (this option **appears** after restarting of the ASIC at the beginning of mining)

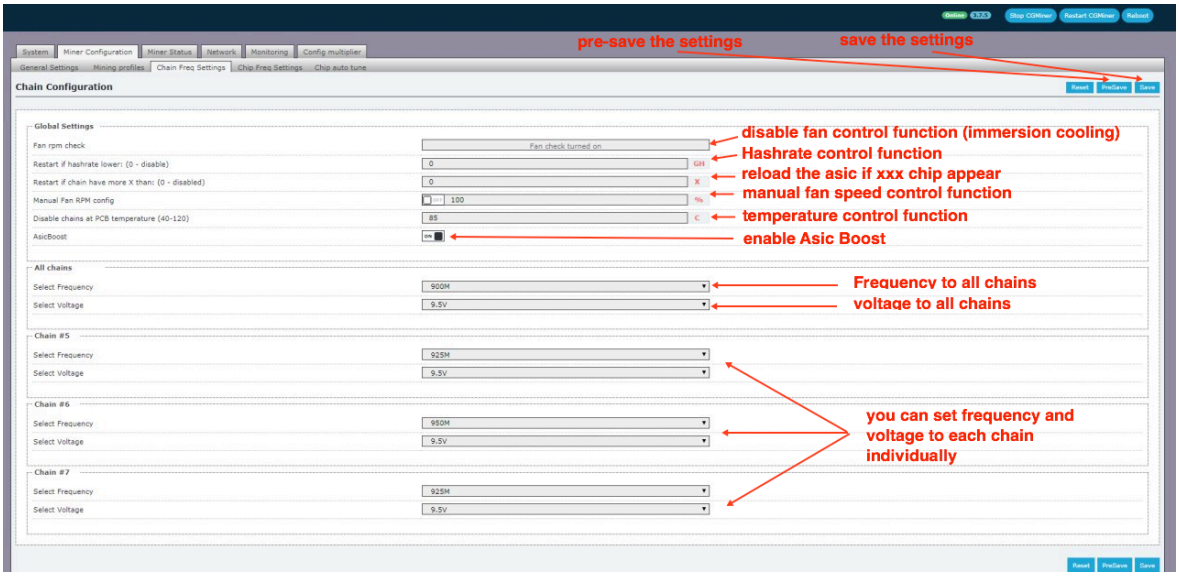


Overclocking and downvolt (manual mode)

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)

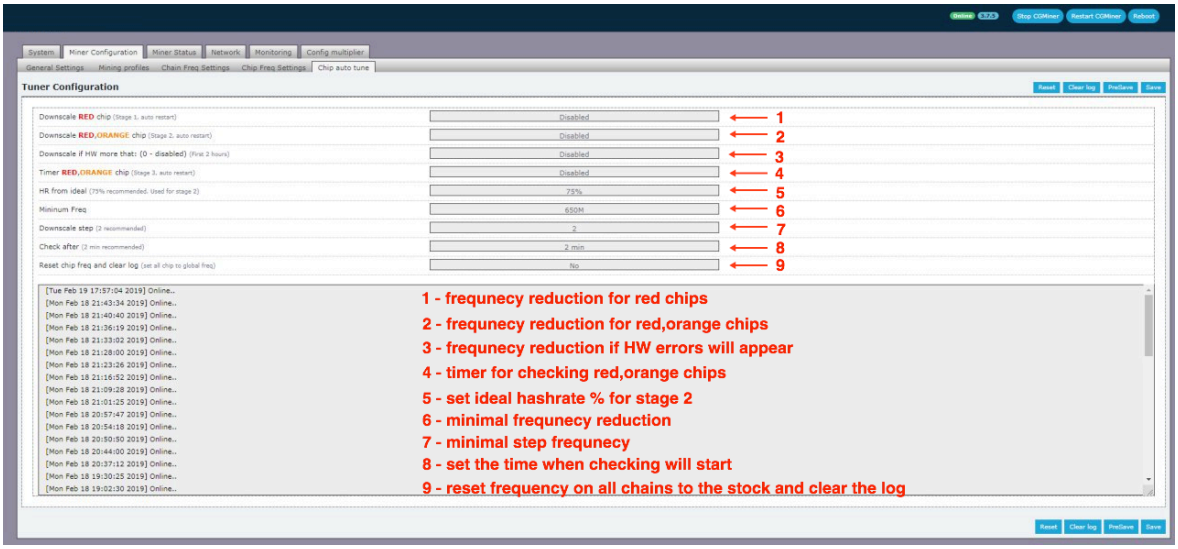


3) Choose the Miner Configuration-Chain Freq Settings



- 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 technogoly, 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)

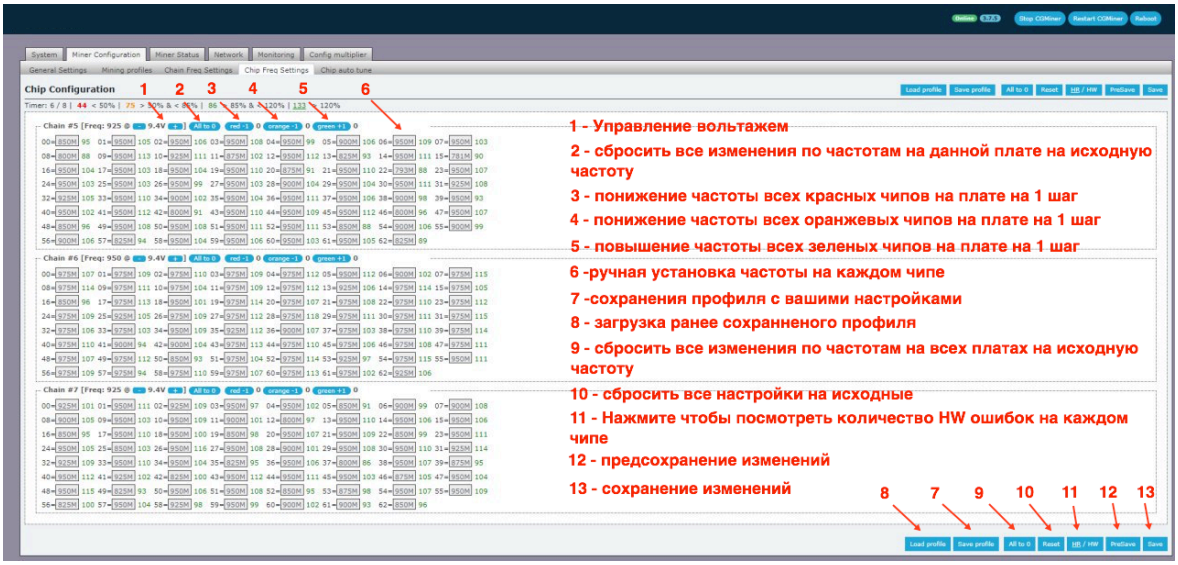
7) You can check the status of the chips in the Miner Configuration - chip Freq Settings

If the AUTO TUNE function is enabled the firmware automatically will tune each chip in the automatic mode and will not be stoped 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 frquency 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

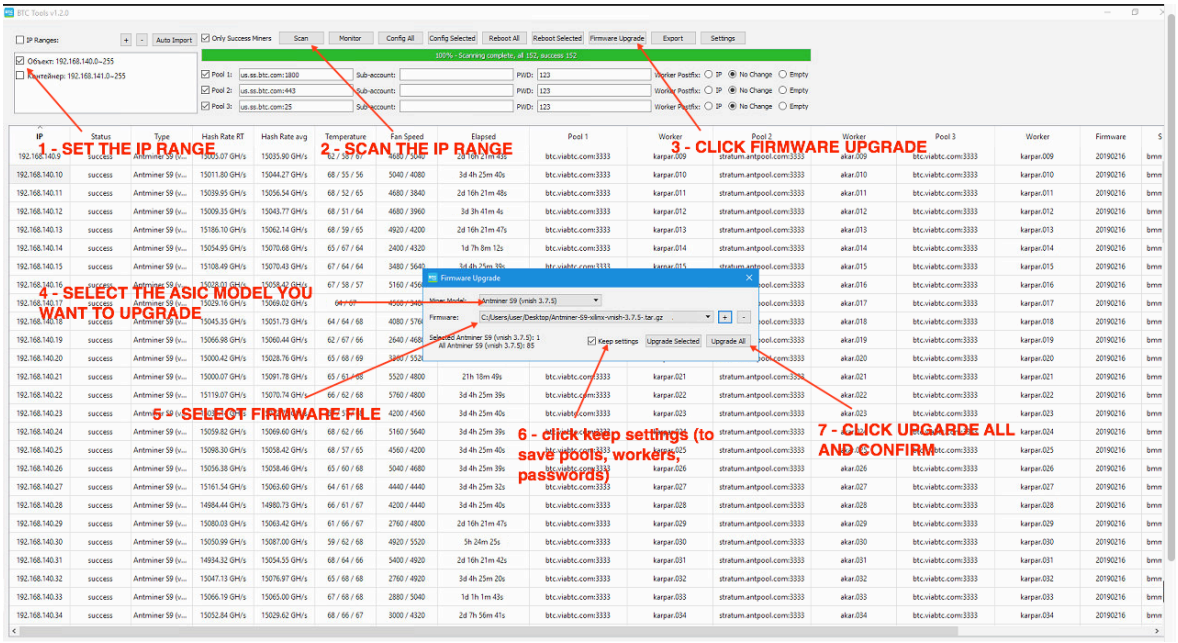
NOTE: You can use lower voltage modes for better energy saving but some ASIC`s will give much lower hashrate than must be and can be not stable, if this happened you need to raise the voltage of this asics

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

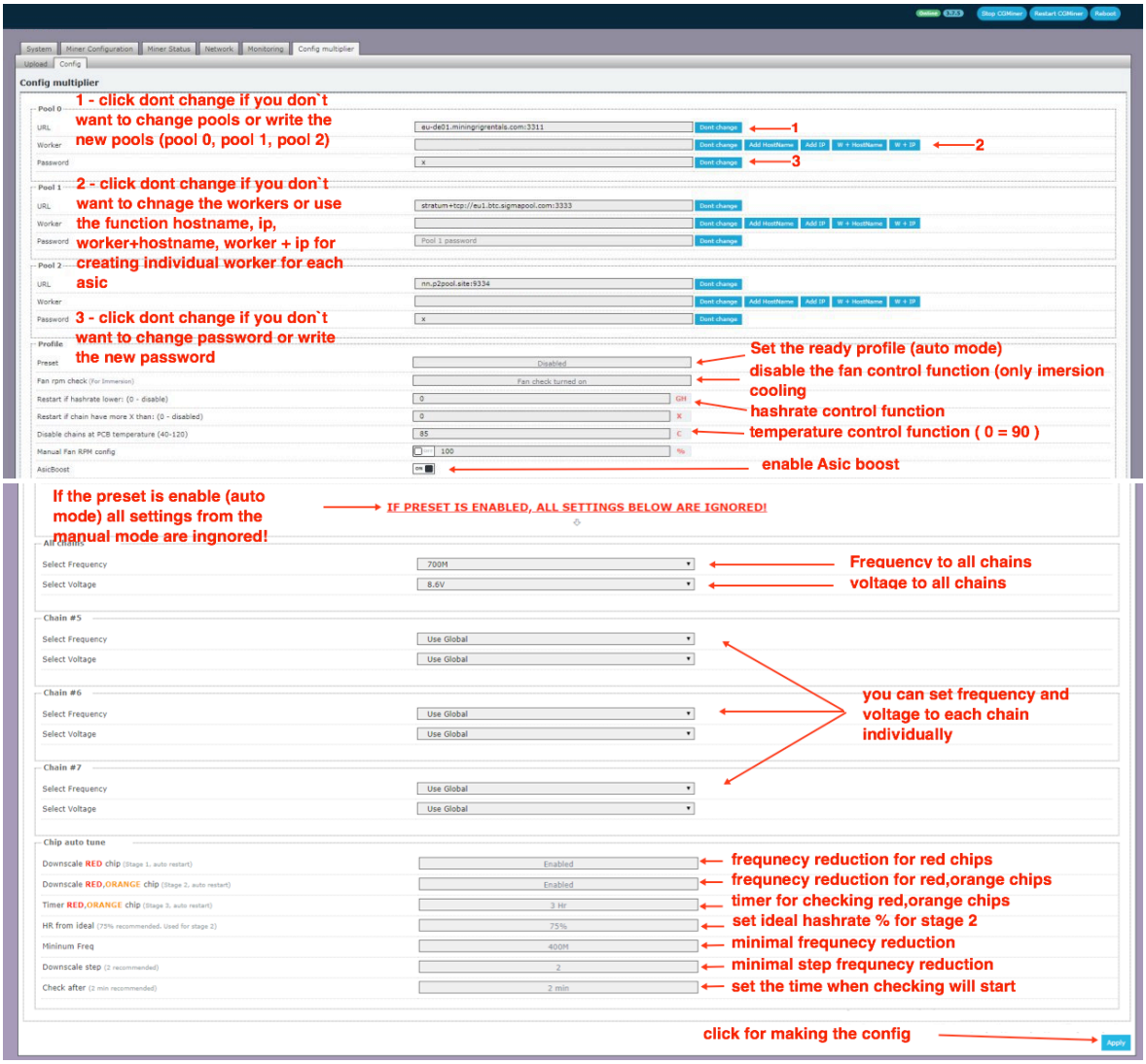
Upload the firmware, create CONFIG (overclocking and downvolt settings), create workers on the unlimited quantity of ASICS in one network

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



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



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)

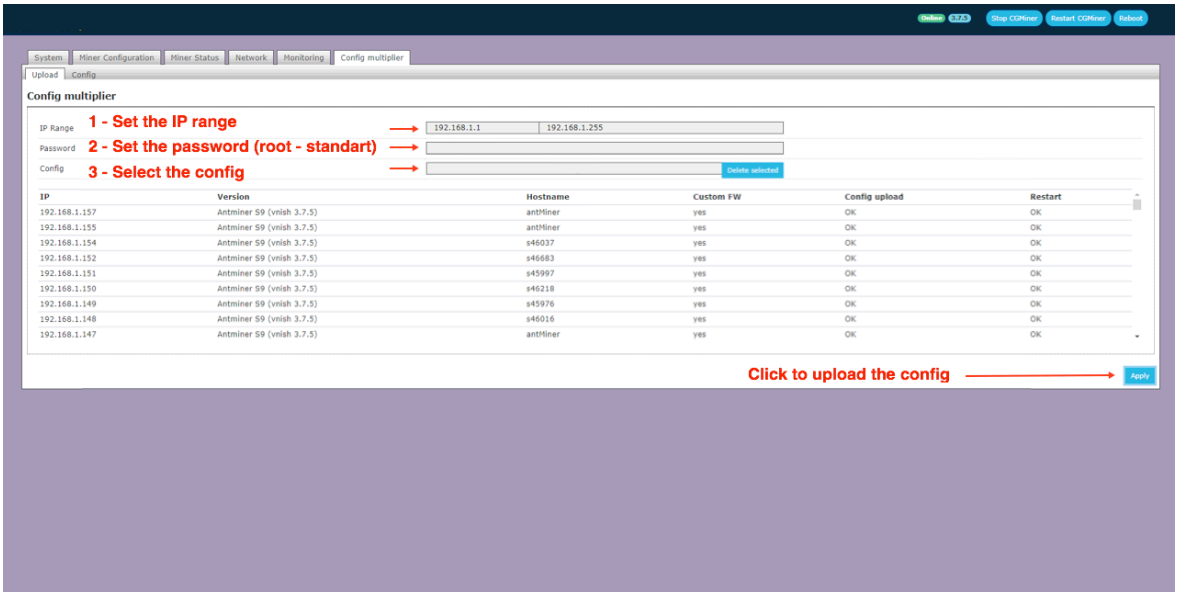
7) turn on the ASIC BOOST function

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



- Set the IP RANGE range of the ASIC with new firware
- 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