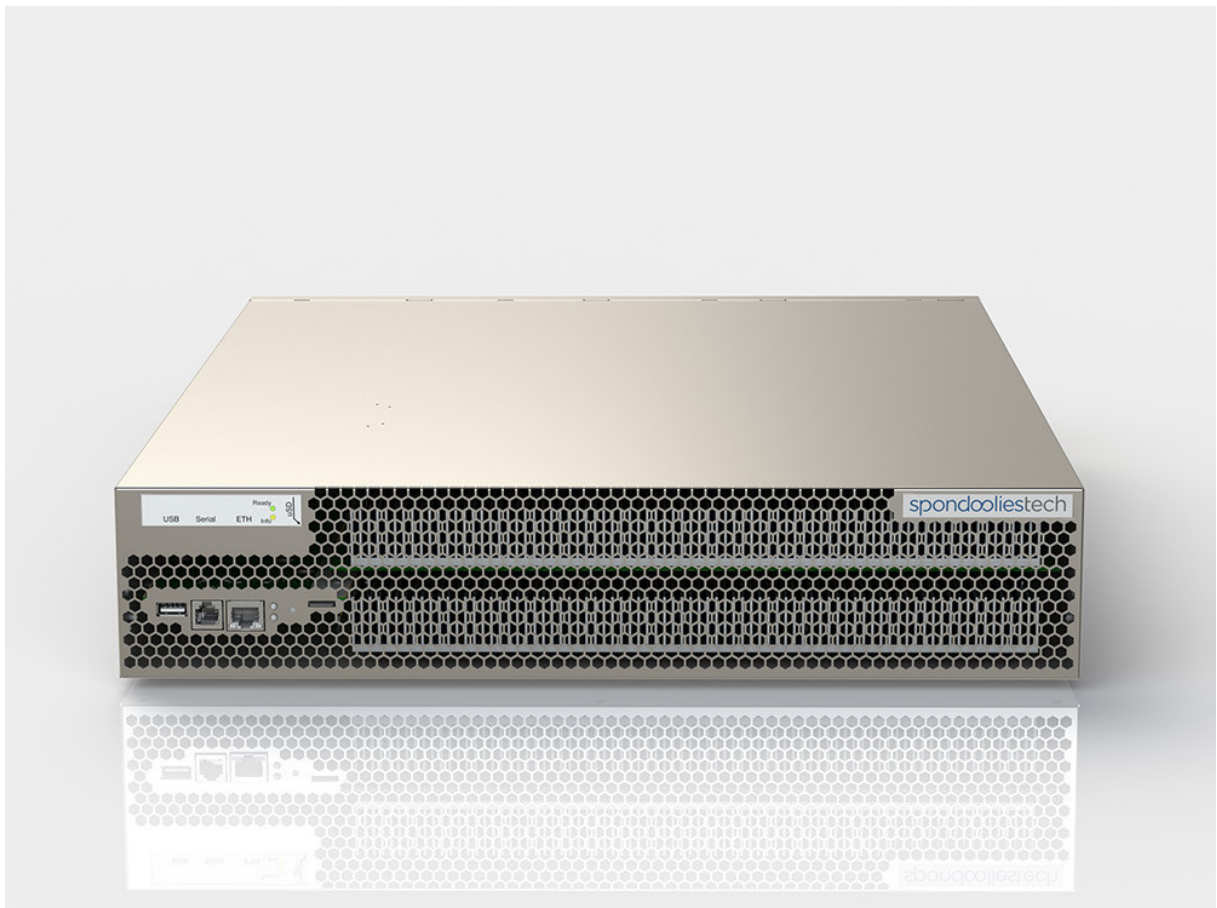


# SP3X

## User Guide



**September 2014**  
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**REVISION HISTORY**

Date	Revision	Description
September 2014	1.0	First Release

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# 1 Introduction

The SP3X is the most powerful Bitcoin miner available in the current market. With amazing 4.5 TH/s hash power and remarkably low power consumption, the SP3X offers nearly three times the hashing power of the SP10, while maintaining a slim 2U case suitable for both home and data center hosting.

## 1.1 Scope

This guide describes additional configuration procedures for the SP3X following installation and initial configuration, as described in the SP3X Quick Start Guide.

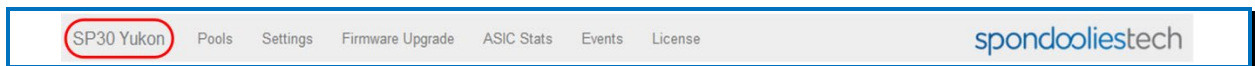
## 1.2 Related Documents

- SP3X Quick Start Guide
- SP3X Rack Installation Guide
- SP3X FAQs

# 2 Using The SP3X Dashboard

The dashboard gives you a summarized overview of the important information you need to know about your SP3X.

To reach the dashboard from anywhere in the management console, in the menu click **SP30 Yukon**:



## 2.1 Viewing Mining Information

SP30 Yukon Pools Settings Firmware Upgrade ASIC Stats Events License spondooliestech

**Mining Rate: 4390.75Ghs**

1

Temp Front / Back T,B 32 °C / 67,78 °C  
 Socket Voltage 218/217 volt  
 Fan Speed 80  
 Start Voltage 0.66 / 0.67  
 Max Voltage 0.75  
 Max Watts 1335 / 1341

Best Share 1861905  
 Miner time Tue, 12 Aug 2014 10:33  
 System Uptime 55 min 10 sec  
 CGMiner Uptime 54 min 12 sec

Hostname miner-FL1431007575  
 MAC address 20:CD:39:F7:73:24  
 Hardware Version SP30 Yukon  
 FW Version 2.2.35  
 CGMiner Version cgminer4.5.0  
 CGMiner Status Running  
 MinerGate Status Running

Stop Miner Restart MinerGate Reboot Blink LED

**Pools**

URL	User	Status	Pr	GW	Acc	Rej	Disc	Last	Diff1	DAcc	DRej	DLast	Best
stratum.mining.eligius.st	.....	Alive	0	120	1449	1	2206	10:33:53	182208	3397324	2048	4096	1861905

**Statistics**

Name	GH/s	Accepted shares	Rejected shares	Errors	Utility	Last Share
	4390.75	1450	1	1	26.76	10:33:53

2

3

1. **Mining Rate** – displays four graphs showing you the rate of the mining process over different durations.
2. **Pools Information** – listd the pools you have entered and their status, in addition to different mining statistics for each pool.
3. **Statistics** – displays a brief summary of the mining statistics from all pools.

## 2.2 Controlling Units

The unit section displays essential information for your SP3X and allows you to perform basic actions.

The screenshot displays the SP3X Yukon administrative interface. At the top, there are navigation tabs: SP30 Yukon, Pools, Settings, Firmware Upgrade, ASIC Stats, Events, and License. The main heading is "Mining Rate: 4390.75Ghs". Below this are four line graphs showing "Hash per second" over different time periods: Last Hour, Last Day, Last Week, and Last Month. The graphs show a relatively stable mining rate around 4.3 TH/s.

Below the graphs is a section labeled "1" containing unit information:

Temp Front / Back T,B	32 °C / 67,78 °C	Best Share	1861905	Hostname	miner-FL1431007575
Socket Voltage	218/217 volt	Miner time	Tue, 12 Aug 2014 10:33	MAC address	20:CD:39:F7:73:24
Fan Speed	80	System Uptime	55 min 10 sec	Hardware Version	SP30 Yukon
Start Voltage	0.66 / 0.67	CGMiner Uptime	54 min 12 sec	FW Version	2.2.35
Max Voltage	0.75			CGMiner Version	cgminer4.5.0
Max Watts	1335 / 1341			CGMiner Status	Running
				MinerGate Status	Running

Below this is a section labeled "2" containing control buttons: Stop Miner, Restart MinerGate, Reboot, and Blink LED.

The "Pools" section shows a table with columns: URL, User, Status, Pr, GW, Acc, Rej, Disc, Last, Diff1, DAcc, DRej, DLast, Best. One pool is listed: stratum.mining.eligius.st, with status "Alive".

The "Statistics" section shows a table with columns: Name, GH/s, Accepted shares, Rejected shares, Errors, Utility, Last Share. One entry is shown: 4390.75, 1450, 1, 1, 26.76, 10:33:53.

1. Unit Information - displays a summary of SP3X import information and unit status.
2. Control Buttons – enables you to perform the following actions:
  - **Stop Miner** – stops miner activity.
  - **Restart MinerGate** – restarts the mining software only.
  - **Reboot** – performs a power reset.
  - **Blink LED** – identifies the SP3X to which you are currently connected by flashing its front panel LED (useful if you have multiple units).

## 3 Administrative Management

### 3.1 Network Settings

#### 3.1.1 Configuring Manual LAN Settings

By default, the unit automatically receives the network settings from DHCP.

To set network settings manually:

1. Remove the selection mark from the **Use DHCP** checkbox.

Network settings

Use DHCP

WiFi networks Blink LED

Save

The following options appear:

Network settings

Use DHCP

WiFi networks Blink LED

LAN IP address 10.102.20.87

LAN Subnet 255.255.255.0

WiFi IP address 192.x.x.x

WiFi Subnet 255.255.255.0

Gateway 10.102.20.1

DNS 8.8.8.8

Note that incorrect settings may make your miner unavailable.  
Change this setting only if you are sure this is what you want.

Save

2. Fill in the fields as follows:

- **LAN IP Address** – the IP Address you want to set for the SP3X.
- **LAN Subnet** – the Subnet mask of your network. (By default: 255.255.255.0)
- **Gateway** – the IP Address of the router in your network (which connects to the internet)
- **DNS** – the address of the DNS server you want to use (by default: same as your router)

3. Click **Save**. The SP3X will restart with the new network settings.

### 3.2 Changing Administrator Password

It is highly recommended that you set a secure password in order to keep your SP3X and data safe.

**To change the Administrator Password:**

1. In the menu, click **Settings**.
2. In the **UI password** section, in the **New password** fields, enter the new password you want to set in both fields.

UI password

New password New password

Repeat Password

It is **highly** recommended that you create a secure password, but if you forget your password you will need to perform a recovery with micro-SDcard.

Save

3. Click **Save**.

UI password

New password

Repeat Password

It is **highly** recommended that you create a secure password, but if you forget your password you will need to perform a recovery with micro-SDcard.

**Save**

### 3.3 Changing SSH Password

The SP3X supports SSH connection from remote networks. It is highly recommended that you set a secure password in order to keep your SP3X and data safe.

#### To Change SSH Password:

1. In the menu, click **Settings**.
2. In the **SSH password** section, in the **New password** fields, enter the new password you want to set in both fields.

SSH password

New password

Repeat Password

It is **highly** recommended that you create a secure password, but if you forget your password and you want to access your miner with ssh you will need to perform a recovery with micro-SDcard.

**Save**

3. Click **Save**.

SSH password

New password

Repeat Password

It is **highly** recommended that you create a secure password, but if you forget your password and you want to access your miner with ssh you will need to perform a recovery with micro-SDcard.

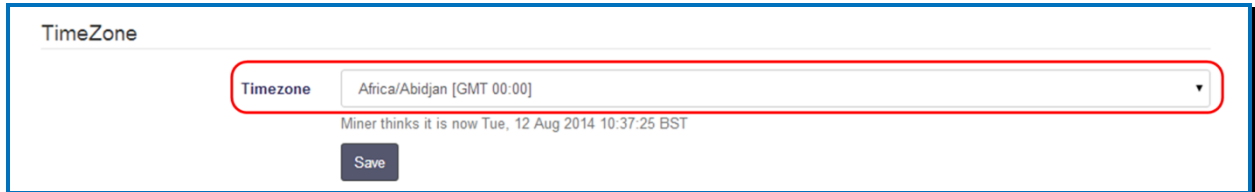
**Save**



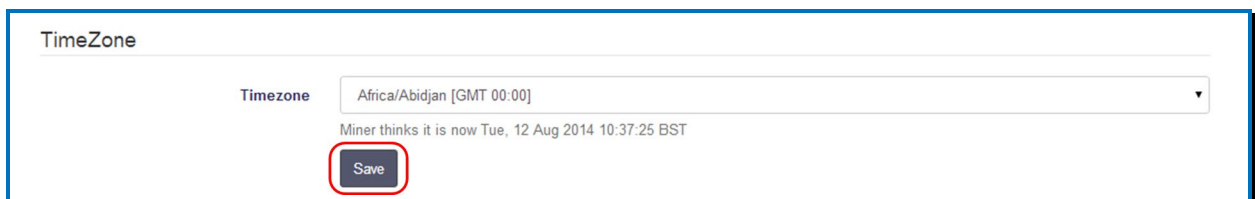
### 3.4 Setting Time Zone

To set your time zone:

1. In the menu, click **Settings**.
2. In the **TimeZone** section, select your time zone from the dropdown list.



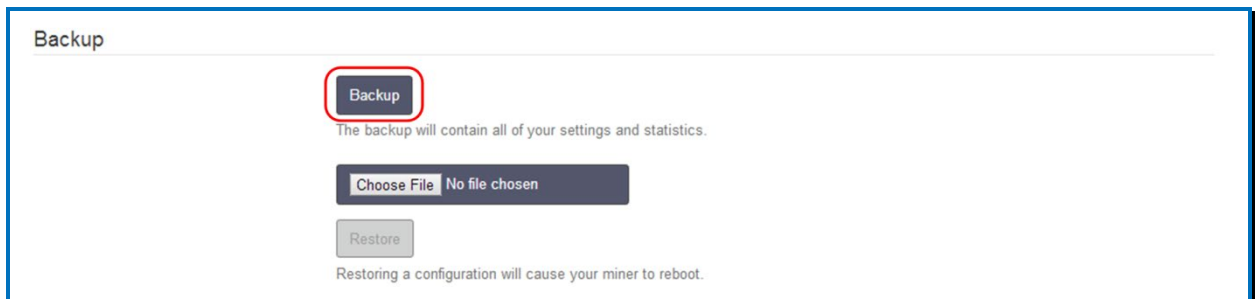
3. Click **Save**.



### 3.5 Backup/Restore Settings

To backup your custom SP3X settings and statistics to a file:

1. Plug a USB flash drive into the USB port in the front panel.
2. In the menu, click **Settings**.
3. In the **Backup** section, click **Backup**.



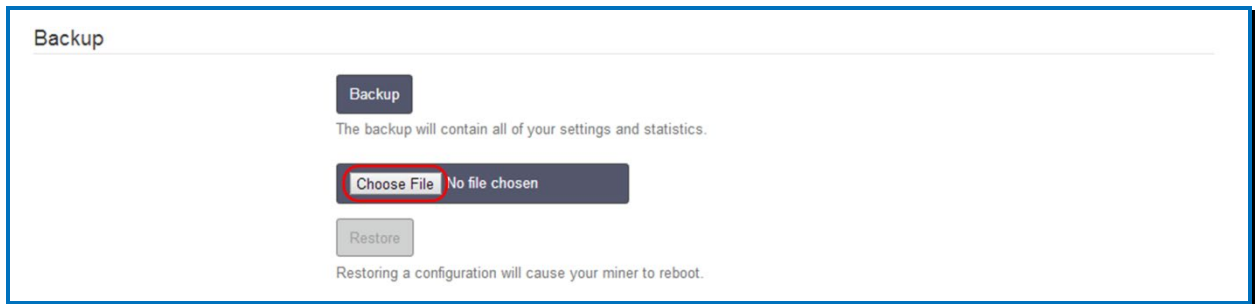
4. Enter the name you want to give the backup file and navigate to the directory where you want to save it, then click **OK**.

~screenshot

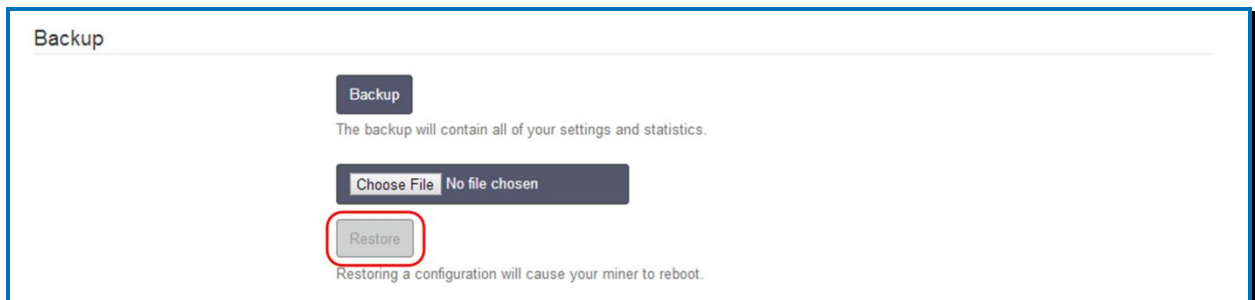
To restore configuration and statistics from a backup file:

1. Plug the USB flash drive that contains the backup file into the USB port on the front panel.
2. In the menu, click **Settings**.

3. In the **Backup** section click **Choose File**.



4. Select the backup file you want to restore and click **OK**.
5. Click **Restore**.

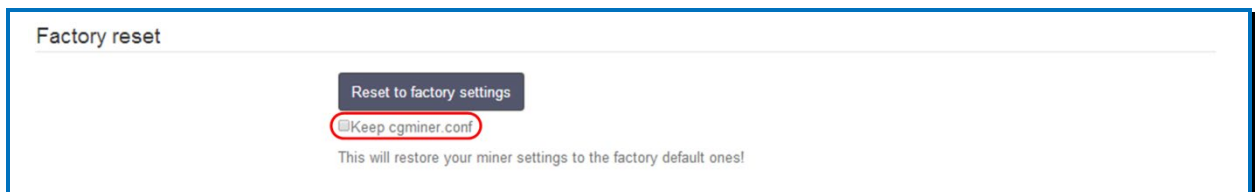


6. The unit reboots with the backup configuration and statistics.

## Reset to Factory Settings

To reset the unit to its factory settings:

1. In the menu, click **Settings**.
2. In **Factory reset** section, select one of the following options:
  - To reset only unit configuration and keep your pool and mining settings, select the **Keep cgminer.conf** checkbox.
    - For a complete configuration and data reset, make sure that the **Keep cgminer.conf** checkbox is NOT selected.



3. Click **Reset to factory settings**. The SP3X restarts.




#### NOTE

If a factory reset in this method did not work for you, refer to the procedure in <http://www.spondoolies-tech.com/blogs/technical-blog/13098521-sp10-sp30-recovery-sd-card-boot-sd-card-creation-instructions>.

## 4 Overclocking

### 4.1 Overview


When the operating environment allows (in terms of surrounding temperature), you can adjust various power settings to run the ASICs at a higher performance level.

	<p>Overclocking causes the SP3X to generate more heat, therefore make sure that sufficient cooling is used and pay attention to the temperatures in the dashboard.</p>
--	--

Alternatively, you can adjust overclocking settings to lower values if you want to SP3X to consume less power.

#### NOTE

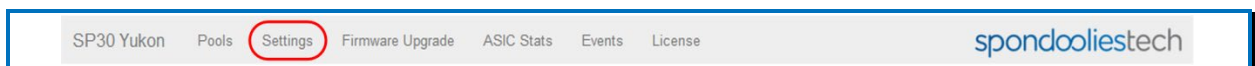
Lower overclocking settings results in lower mining productivity.

	<ul style="list-style-type: none"><li>• Changes to overclocking settings are your responsibility only. Although the SP3X shuts down automatically in case of over heating, incorrect overclocking settings may result in damage to your SP3X.</li><li>• Pay careful attention to temperature changes after changing overclocking settings.</li></ul>
---	--

### 4.2 Configuring Overclock Settings

To set overclocking:

1. In the Main Menu, click **Settings**.



2. In the **Fan Speed** dropdown menu, select the required fan speed.

#### NOTE

The fan speed affects the noise that the SP3X produces. The higher the speed, the more noise it will produce. However, setting the fan to a low speed will reduce cooling effectiveness, which may result in unit overheating.

Settings  
Over-clocking (Socket voltage: 218/217 volt)

Fan Speed	80 ▾
Maximum Voltage (0.660-0.790)	0.75
Max PSU Power Top (500W - 1400W)	1335
Max PSU Power Bottom (500W - 1400W)	1341

Save Basic Voltage Settings

3. If you want the SP3X to consume less than 0.75 volts, in the **Maximum Voltage** field enter a lower voltage limit.

Settings  
Over-clocking (Socket voltage: 218/217 volt)

Fan Speed	80 ▾
Maximum Voltage (0.660-0.790)	0.75
Max PSU Power Top (500W - 1400W)	1335
Max PSU Power Bottom (500W - 1400W)	1341

Save Basic Voltage Settings

4. In **Max PSU Power Top** and **Max PSU Power Bottom** fields, enter the maximum watts you want the each PSU to consume, accordingly:

Settings  
Over-clocking (Socket voltage: 218/217 volt)

Fan Speed	80 ▾
Maximum Voltage (0.660-0.790)	0.75
Max PSU Power Top (500W - 1400W)	1335
Max PSU Power Bottom (500W - 1400W)	1341

Save Basic Voltage Settings

5. Click **Save**:

Settings  
Over-clocking (Socket voltage: 218/217 volt)

Fan Speed	80 ▾
Maximum Voltage (0.660-0.790)	0.75
Max PSU Power Top (500W - 1400W)	1335
Max PSU Power Bottom (500W - 1400W)	1341

Save Basic Voltage Settings

6. To reset the overclocking settings to default values, click **Basic Voltage Settings**:

## Settings

Over-clocking (Socket voltage: 218/217 volt)

Fan Speed	80 ▾
Maximum Voltage (0.660-0.790)	0.75
Max PSU Power Top (500W - 1400W)	1335
Max PSU Power Bottom (500W - 1400W)	1341

7. After changing overclocking settings, watch the temperatures in the dashboard to make sure they remain within the valid range.

## Appendix A. Upgrading Your Firmware

Spondoolies-Tech Ltd releases firmware upgrades for the SP3X as required.

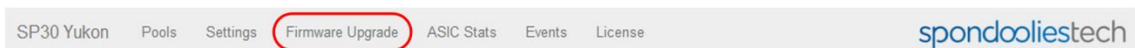
You can upgrade your firmware in two ways:

- Automatic Upgrade – automatically downloads and installs the newest stable version of firmware for your unit if a newer version exists.
- Manual Upgrade (for advanced users) - allows you to choose a specific version to install from a list of older versions and test versions.

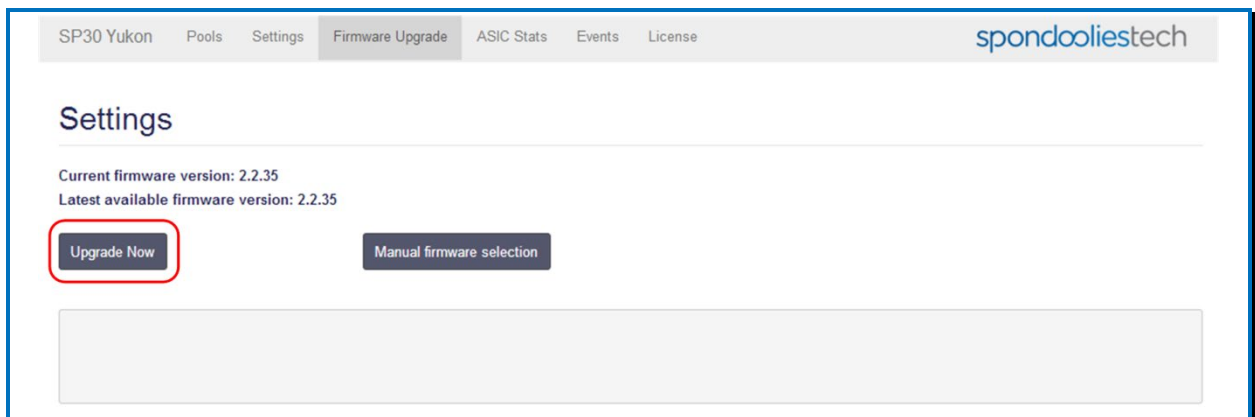
### A.1. Automatic Upgrade

To upgrade the unit firmware automatically:

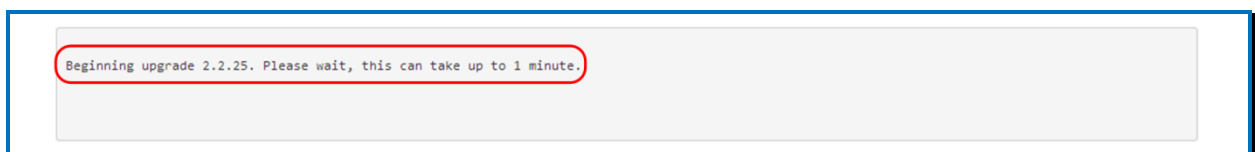
1. In the menu, click **Firmware Upgrade**:



2. Click **Upgrade Now**.



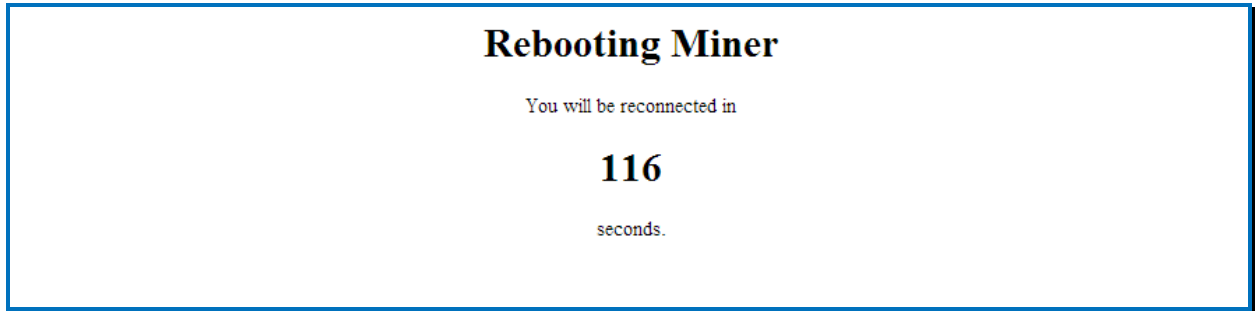
The SP3X will check if a newer version for the unit is available. If found, it will be automatically downloaded and installed. Progress is displayed in the status box at the bottom. Upgrading can take up to one minute.



3. When the upgrade successfully completes, a message appears in the status box. Click **Reboot**



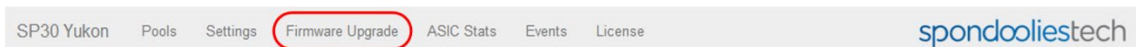
4. The miner reboots with the new version.



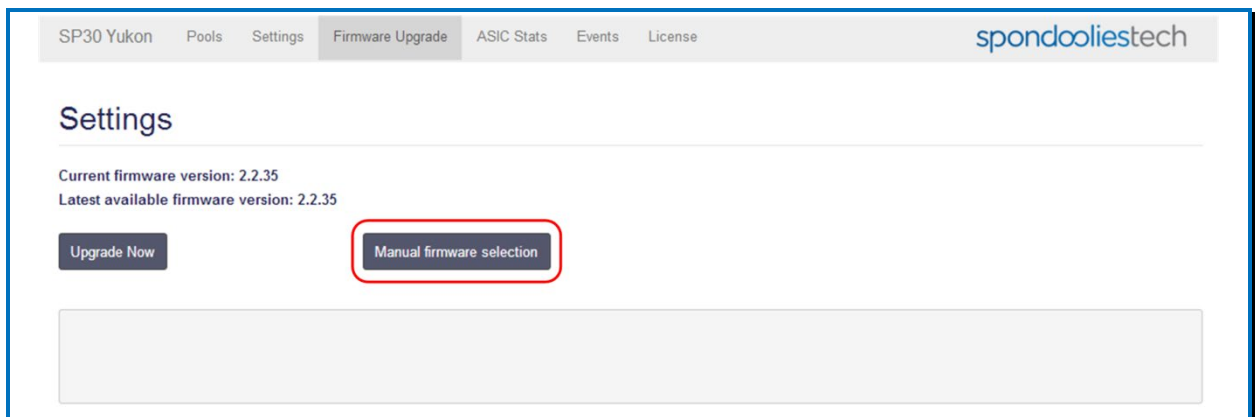
## A.2. Manual Upgrading

To upgrade the unit firmware manually:

1. In the menu, click **Firmware Upgrade**:

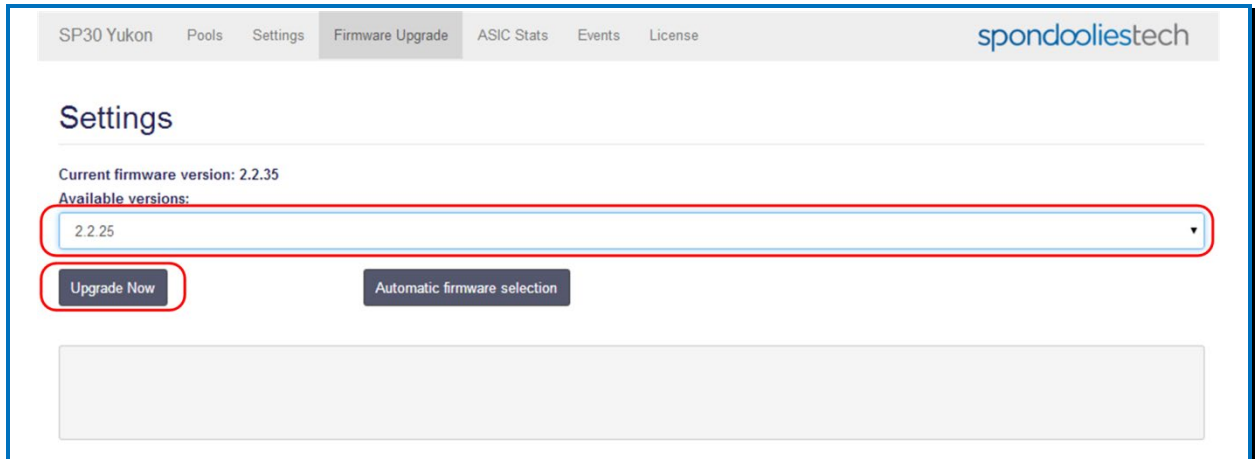


2. Click **Manual firmware selection**:

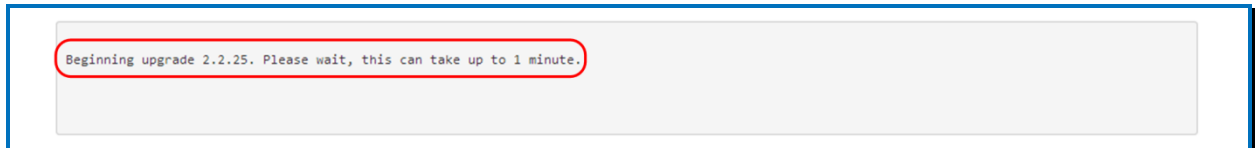


3. A notification appears, read the notification and approve by clicking **OK**.

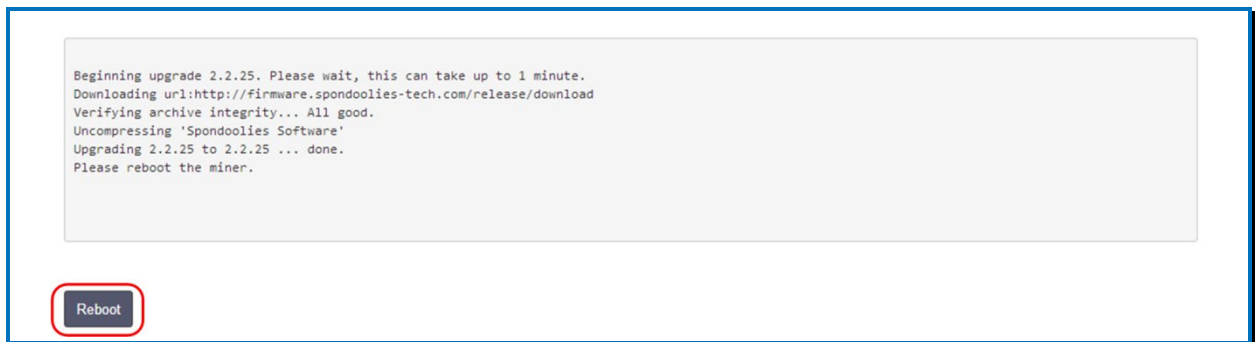
- In the dropdown list, select the required firmware version and click **Upgrade Now**:



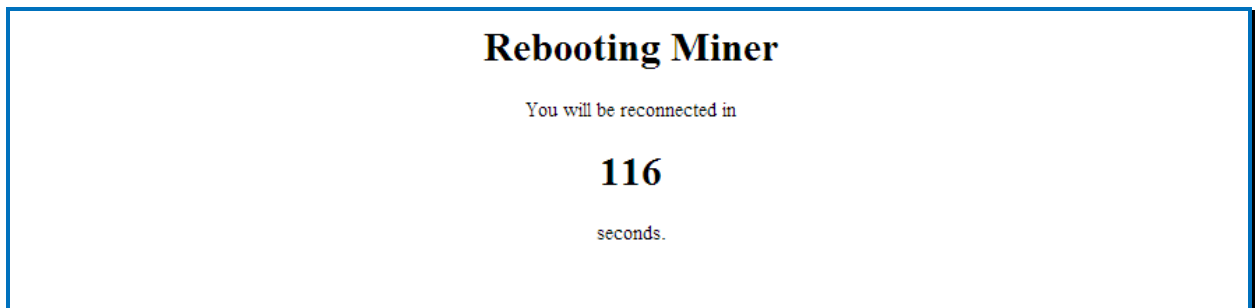
- Another notification appears. Read through the notification and approve by clicking **OK**.  
The upgrade will start. The progress is displayed in the status box at the bottom. Upgrade can take up to one minute.



- When upgrade completes successfully a message appears in the status box. Click **Reboot**



- The miner reboots with the new version.





## Appendix B. Find Your Unit IP Address

If you connected the SP3X to your network but cannot open the management console by typing **myminer.io** in the browser (see the SP3X Quick Start Guide), you can enter the unit IP address instead.

To find the IP address you can use one of the following methods:

### Router Management Console

Log into your router management console and find the list of connected devices with their IP address. In the list of connected devices, look for an entry beginning with “**miner**” and enter its IP address in the browser.

### IP Scanner

Run an IP scanner to scan for devices connected to your network. You can download Angry IP Scanner from <http://angryip.org/download> (or use any other IP scanner of your choice). In the list of devices, in the list of connected devices, look for an entry beginning with “**miner**” and enter its IP address in the browser.

## Appendix C. Viewing ASIC Statistics

The **Statistics** window displays detailed information about the unit and for each ASIC separately. This information is especially important when configuring overclocking (in order to check temperatures).

The list of ASICs is divided into groups represented in the log as **LOOPS**:

- Loops 0-4 contain the ASICs on the top board front to back (0 – front; 4 – back)
- Loops 5-9 contain the ASICs on the bottom board front to back (5 – front; 9 – back).

Each ASIC temperature is displayed in the column marked in the following figure:

ASIC Temperature

Asic stats

Top ASICs

Bottom ASICs

```

uptime:3399
---- TOP BOARD-----
PSU-TOP[EMERSON1200]: 1456->1324w[1324 1320 1320] (lim=1335) 0c cooling:0/0x30006400
LOOP[0] ON
0: DC2DC/1/:[vlt1:697 vlt2:701(DCl:794 Tl:794 Ul:749) 66W 94A 63c] ASIC:[ 85c 755hz(BL: 755) 78 (E:193) F:0]
1: DC2DC/1/:[vlt1:697 vlt2:701(DCl:794 Tl:794 Ul:749) 65W 93A 63c] ASIC:[ 85c 725hz(BL: 725) 95 (E:193) F:0]
2: DC2DC/1/:[vlt1:695 vlt2:701(DCl:794 Tl:794 Ul:749) 73W 104A 63c] ASIC:[ 85c 810hz(BL: 810) 137 (E:193) F:0]
LOOP[1] ON
3: DC2DC/1/:[vlt1:697 vlt2:701(DCl:794 Tl:794 Ul:749) 70W 101A 68c] ASIC:[ 85c 785hz(BL: 785) 98 (E:193) F:0]
4: DC2DC/1/:[vlt1:699 vlt2:701(DCl:794 Tl:794 Ul:749) 74W 106A 78c] ASIC:[ 85c 840hz(BL: 840) 97 (E:193) F:0]
5: DC2DC/1/:[vlt1:695 vlt2:701(DCl:794 Tl:794 Ul:749) 62W 89A 73c] ASIC:[ 85c 740hz(BL: 740) 96 (E:193) F:0]
LOOP[2] ON
6: DC2DC/1/:[vlt1:697 vlt2:701(DCl:794 Tl:794 Ul:749) 73W 104A 82c] ASIC:[ 85c 815hz(BL: 815) 89 (E:192) F:0]
7: DC2DC/1/:[vlt1:695 vlt2:701(DCl:794 Tl:794 Ul:749) 70W 100A 82c] ASIC:[ 85c 815hz(BL: 815) 107 (E:193) F:0]
8: DC2DC/1/:[vlt1:699 vlt2:703(DCl:794 Tl:794 Ul:749) 79W 112A 69c] ASIC:[ 85c 875hz(BL: 875) 113 (E:193) F:0]
LOOP[3] ON
9: DC2DC/1/:[vlt1:699 vlt2:703(DCl:794 Tl:794 Ul:749) 78W 111A 81c] ASIC:[ 85c 870hz(BL: 870) 100 (E:193) F:0]
10: DC2DC/1/:[vlt1:687 vlt2:695(DCl:794 Tl:695 Ul:749) 77W 110A 94c] ASIC:[105c 870hz(BL: 870) 128 (E:193) F:0]
11: DC2DC/1/:[vlt1:699 vlt2:703(DCl:794 Tl:794 Ul:749) 79W 112A 90c] ASIC:[ 85c 885hz(BL: 885) 121 (E:193) F:0]
LOOP[4] ON
12: disabled (Stuck DLL)
13: DC2DC/1/:[vlt1:667 vlt2:674(DCl:794 Tl:674 Ul:749) 65W 97A 88c] ASIC:[105c 775hz(BL: 775) 92 (E:193) F:0]
14: DC2DC/1/:[vlt1:681 vlt2:685(DCl:794 Tl:685 Ul:749) 67W 99A 74c] ASIC:[105c 780hz(BL: 780) 102 (E:193) F:0]
----BOTTOM BOARD-----
PSU-BOT[EMERSON1200]: 1456->1336w[1332 1336 1336] (lim=1341) 0c cooling:0/0x30006400
LOOP[5] ON
15: DC2DC/1/:[vlt1:689 vlt2:695(DCl:794 Tl:794 Ul:749) 70W 100A 61c] ASIC:[ 85c 785hz(BL: 785) 100 (E:192) F:0]
16: DC2DC/1/:[vlt1:691 vlt2:695(DCl:794 Tl:794 Ul:749) 74W 107A 67c] ASIC:[ 85c 835hz(BL: 835) 100 (E:193) F:0]
17: DC2DC/1/:[vlt1:693 vlt2:698(DCl:794 Tl:794 Ul:749) 82W 117A 66c] ASIC:[ 85c 890hz(BL: 890) 109 (E:192) F:0]
LOOP[6] ON
18: DC2DC/1/:[vlt1:691 vlt2:695(DCl:794 Tl:794 Ul:749) 72W 105A 67c] ASIC:[ 85c 805hz(BL: 805) 110 (E:193) F:0]
19: DC2DC/1/:[vlt1:689 vlt2:695(DCl:794 Tl:794 Ul:749) 68W 97A 68c] ASIC:[ 85c 775hz(BL: 775) 87 (E:193) F:0]
20: DC2DC/1/:[vlt1:693 vlt2:695(DCl:794 Tl:794 Ul:749) 70W 101A 74c] ASIC:[ 85c 810hz(BL: 810) 122 (E:193) F:0]
LOOP[7] ON
21: DC2DC/1/:[vlt1:689 vlt2:695(DCl:794 Tl:794 Ul:749) 75W 108A 74c] ASIC:[ 85c 840hz(BL: 840) 117 (E:193) F:0]
22: disabled (Stuck DLL)
23: DC2DC/1/:[vlt1:691 vlt2:695(DCl:794 Tl:794 Ul:749) 73W 105A 73c] ASIC:[ 85c 830hz(BL: 830) 110 (E:193) F:0]
LOOP[8] ON
24: DC2DC/1/:[vlt1:689 vlt2:695(DCl:794 Tl:794 Ul:749) 78W 113A 79c] ASIC:[ 85c 865hz(BL: 865) 100 (E:193) F:0]
25: DC2DC/1/:[vlt1:689 vlt2:695(DCl:794 Tl:794 Ul:749) 60W 87A 74c] ASIC:[ 85c 650hz(BL: 650) 75 (E:187) F:0]
26: DC2DC/1/:[vlt1:691 vlt2:695(DCl:794 Tl:794 Ul:749) 74W 107A 87c] ASIC:[ 85c 865hz(BL: 865) 110 (E:193) F:0]
LOOP[9] ON
27: DC2DC/1/:[vlt1:693 vlt2:698(DCl:794 Tl:794 Ul:749) 77W 110A 91c] ASIC:[ 85c 870hz(BL: 870) 125 (E:193) F:0]
28: DC2DC/1/:[vlt1:683 vlt2:688(DCl:794 Tl:688 Ul:749) 76W 111A 90c] ASIC:[105c 860hz(BL: 860) 96 (E:193) F:0]
29: DC2DC/1/:[vlt1:671 vlt2:677(DCl:794 Tl:677 Ul:749) 66W 97A 74c] ASIC:[105c 750hz(BL: 750) 106 (E:191) F:0]

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