

# iBeLink K1+ Specification and Operation Guide

This document is mainly used for the configuration and usage of the iBeLink K1+ mining machine, and there are also some useful suggestions which may reduce your loss.

iBeLink Spec

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### Version Update Information

Date	Introduction	Version
2020-10-14	Initial release version	0.1
2020-12-22	Update for firmware update	0.2
2021-12-22	Update for K1+	0.3

### Packing List

Item	Component	Number	Introduction
1	Machine Box	1	Size(cm)
2	Power Cabal	1	Power supply
3	Technique & Manual	1	Within this document

## 0 Declaration

1. iBeLink does not assume any responsibility for any damage or loss caused by force majeure.
2. iBeLink does not assume any responsibility for any damage or loss caused by unauthorized modification of software and hardware.
3. iBeLink does not assume any responsibility for any damage or loss caused by artificially adjusted overclock (set the specification Frequency over the maximum) or improper temperature.
4. iBeLink does not assume any responsibility for any mining machines sold through unauthorized sales channels.
5. iBeLink does not assume any responsibility for the loss of hash rate caused by nonmainstream or abnormal ore pools.
6. iBeLink does not assume any responsibility for any loss caused by the price fluctuation of digital currency.

## 1 Product Features

- Hashrate: 15THash  $\pm$  5%,
- Power: 2250W  $\pm$  5% (power on the wall below 25°C)
- Supply the digital currency produced by algorithm POW Blake2s.
- Operating temperature: 0°C ~40°C
- Networking connection: Ethernet
- Working power: 190V~240V, 50Hz/60Hz
- Dimensions: 399 mm(L) \* 131 mm(W) \* 157 mm(H)
- Weight: 9 kg
- Applies with the main protocol Stratum Protocol
- Provides with a management platform via web interface which simplifies system setup and large-scale deployment
- Applies with restarting mining software or system using the web interface
- Provides self-checking function of power-on system and real-time monitoring of chip status
- Provides LED display for hashrate blades which provides convenience for large-scale mining machine management
- Provides settings and automatic switching of the main mining pool and multiple backup mining pools.
- Able to monitor error with independent hashrate blades and also can use RESTART button to recover system automatically.
- The hardware Watch Dog guarantees that the system can automatically recover from network or system errors.

## 2 Guidelines

- **Connect**  
After connecting the network cable and power line, power on the device
- **Power on**  
When power on the device, the front panel lights up with 2 LED lights, one red and one green.
- **Working mode**  
After about 1 minute, the red light goes out and the green light continues flashing, which means the machine starts working normally.

### 2.1 Searching Mining Machine

Find Mining Devices with Searing Tool in Figure 1.

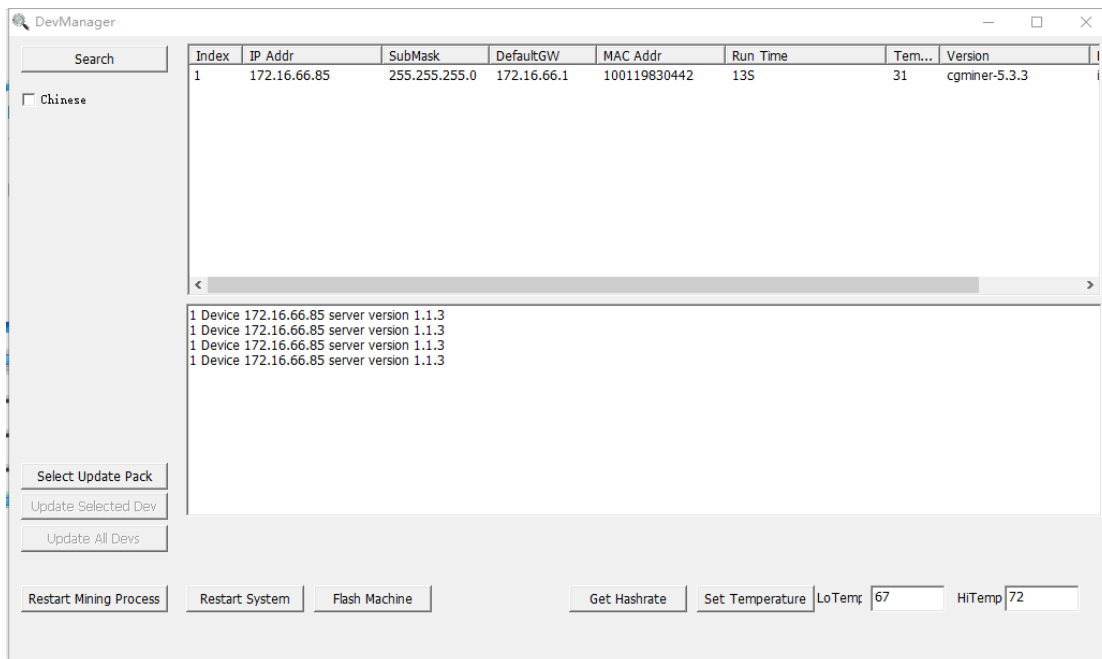


Figure 1 Search Device

The tool can be got from: <http://en.ibelink.com.hk/xiazai/>

**Firmware Download**

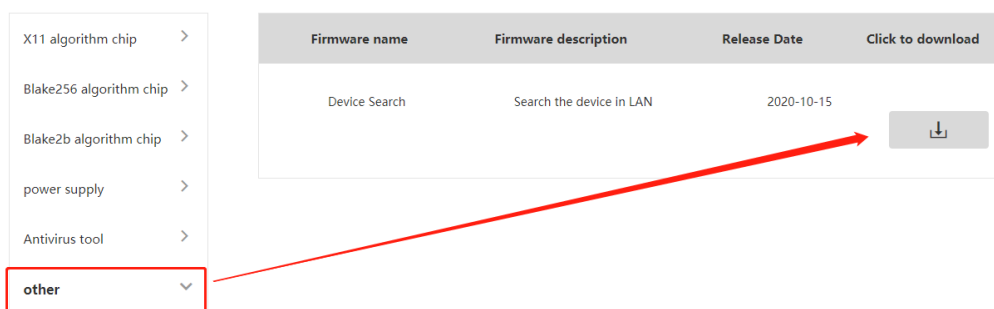


Figure 2 Search Device

**2.2 Login**

Open a web browser and enter the miner address to login, the password is *ibelink*. Click the **[Login]** button to login to the mining machine. The login page is shown in Figure 3.



Figure 3 Login Page

You can modify the username and password by clicking **[Password]** button. The password management interface is shown as below in Figure 4.

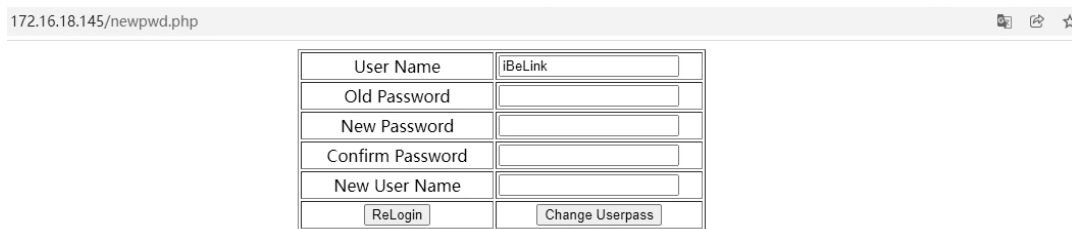


Figure 4 Management Interface

Enter in the old password, the new password and confirm password should be same. Then click [Change Userpass] to update the password. To modify the default username, please enter the new username in New User Name, otherwise leave it blank.

## 2.2 Mining Machine Status

After logging in to the miner system, the management homepage of the mining machine will be shown as in Figure 5.

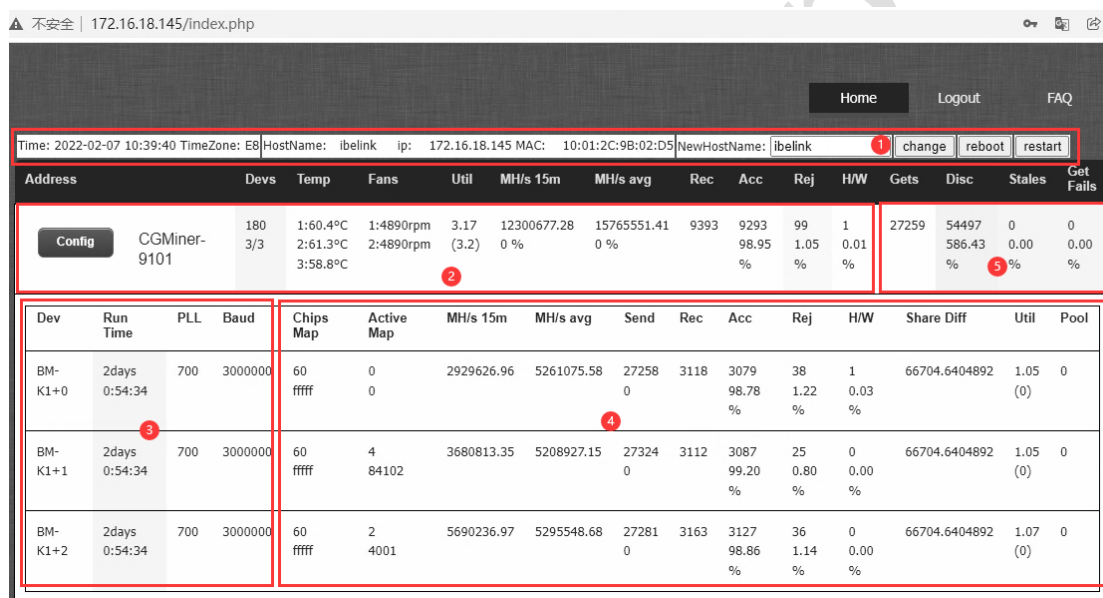


Figure 5 iBeLink K1+ Mining Machine Homepage

Basic information of the mining machine will be showing respectively in these four areas on the screen:

1. current time, time zone, machine name, IP address, MAC address.
2. number of mining chips and blades, temperature, number of nonce per minute, hashrate per five seconds, number of nonce returned by chips, times of acceptance/rejection/error.
3. continuous running period of each hashboard, PLL frequency and serial port rate.
4. chips number of each hashboard, current chip bitmap, number of nonce received by the chip in the past 15 minutes and its chip bitmap, times of acceptance/rejection/error, current depth of difficulty, average nonce per minute, other parameters.
5. Statistics of the mining pool.

## 2.3 Mining Configuration

Address	Devs	Temp	Fans	Util	MH/s 15m	MH/s avg	Rec	Acc	Rej	H/W	Gets	Disc	Stales	Get Fails
CGMiner-9101	180 3/3	1:60.2°C 2:61.2°C 3:58.7°C	1:4890rpm 2:4890rpm	3.17 (3.2)	13326305.26 0 %	15764687.9 0 %	9413	9313 98.95 %	99 1.05 %	1 0.01 %	27308	54595 586.22 %	0 0.00 %	0 0.00 %

Dev	Run Time	PLL	Baud	Chips Map	Active Map	MH/s 15m	MH/s avg	Send	Rec	Acc	Rej	H/W	Share Diff	Util	Pool
BM-K1+0	2days 0:59:34	700	3000000	60 ffff	8 98099	4045076.64	5262580.58	27307 0	3126	3087 98.78 %	38 1.22 %	1 0.03 %	51799.0356392	1.05 (0)	0
BM-K1+1	2days 0:59:34	700	3000000	60 ffff	10 87192	3947353.68	5207635.07	27373 0	3118	3093 99.20 %	25 0.80 %	0 0.00 %	51799.0356392	1.05 (0)	0
BM-K1+2	2days 0:59:34	700	3000000	60 ffff	8 1e021	5333874.94	5294472.24	27330 0	3169	3133 98.86 %	36 1.14 %	0 0.00 %	51799.0356392	1.07 (0)	0

Feature 6 iBeLink K1+ mining configuration

1. Modify Host Name: As shown in Feature 6. First click the **[change]** button and enter in new host name then click **[restart]** to activate it.
2. Click **[reboot]** to restart the system.
3. Click **[restart]** to restart the mining software.
4. Configuration

Click the **[Config]** button on the left side of Figure 6 to enter in the configuration interface, which is mainly divided into 3 parts, as shown in Figure 7.

### Part One:

Click the **[√]** button to display the details of the selected mining pool.

Click the **[Top]** button to set this mining pool to the highest priority.

Click the **[Delete]** button to delete this mining pool. The current pool can't be deleted.

### Part Two:

Type in the mining pool address in Pool URL, name of the miner in Pool User, and the password in Pool Password, and then click the **[Add Pool]** button to add the new mining pool to the mining software.



Pool	Priority	URL	Status	Delete	Gets	Diff	Accepts	Rejects	Discards	Stales	Get Fails
0	0	stratum+tcp://kda.ss.poolflare.net:443	Alive	Delete	27325	69507.986	9322 98.95 %	99 1.05 %	54633 199.94 %	0 0.00 %	0 0.00 %
1	1	stratum+tcp://81.68.90.50:443	Alive	Delete	1	NAN	0	0	0	0	0
2	2	stratum+tcp://kda.f2pool.com:5400	Alive	Delete	1	NAN	0	0	0	0	0
3	3	stratum+tcp://3.114.49.54:6611	Alive	Delete	0	NAN	0	0	0	0	0

**Pool URL:** stratum+tcp://kda.ss.poolflare.net:443  
**Pool User:** k...  
**Pool Password:** x  
**Action:** Add Pool

**Power Consumption(W):** 2092  
**Reconfig Times:** 0  
**Power Temperature:** 0

**Low Hashrate Threshold(MH):** [Slider]  
**High Reject Threshold(%):** [Slider]  
**Temperature Check Interval(s):** 10

**Time Zone:** 8  
**Warning Temperature(°C):** 87  
**Safe Temperature(°C):** 84  
**Action:** Set Param

**IP Address:** 172.18.18.145  
**Netmask:** 255.255.252.0  
**Gateway:** 172.18.18.1  
**Action:** Set IP Config

**Static IP Enable:**  Enable  
**Action:** Set IP Config

**PLL(30-800):** 700  
**Action:** Set PLL

**Voltage Get(100mV):** 120  
**Voltage Set(100mV):** 122  
**Action:** Set voltage

To updateMiner/restoreMiner press the corresponding button. Current Miner cgminer 5.5.12.

Figure 7 Configuration

### 5. Set Temperature Reminder

Fill in the temperature limit, and click the **[Set Warning Param]** button to complete the mail reminder setting. The alarm temperature is used for automatic frequency adjustment. The mining frequency will be reduced automatically to protect the chips when the current blade temperature is over the warning temperature. The maximum alarm temperature cannot be over 70°C.

### 6. Set Fixed IP

The miner is preset to use DHCP. If you want to use a fixed IP, you need to manage the setting as follows:

Fill out the fixed IP, subnet mask, network entry, enable IP Enable, and then click the **[Set IP Config]** button. If you want to return to DHCP mode in the future, you only need to remove IP Enable and click the **[Set IP Config]** button. Note that some routers require corresponding settings to use fixed IP addresses for mining. in that case you need to have a full understanding of the router you are using to correctly use the fixed IP address for mining. The IP mode settings need to restart the machine to take effect.

### 7. ASIC Chip Parameter Settings

The maximum working frequency PLL preset by the miner is 700Mhz. You can modify the upper limit of the frequency by entering a valid PLL value, and then click the **[Set PLL]** button to

complete the setting. Unless there with professional advice, we do not recommend you change the preset PLL frequency. The new highest PLL frequency will take effect after restarting the system.

### Part Three:

8. The updateMiner/restoreMiner function is used to upgrade and restore the version of the Miner program.

The current mining software version is shown in the third part of Figure 7, similar to cgminer 5.5.12.

## 2.4 Update

Since there may be bugs in the version of the production test or the firmware has been optimized in the future, it is suggested that the user should check whether the firmware version of the machine is consistent with the latest version on the official website as soon as it is received first time. If not, the latest version should be downloaded and upgraded.

Update your machines by DevManager.

Download the update package from our website <http://en.ibelink.com.hk/xiazai/>, As Figure 8. Select the device that you want to update as figure 9. And then click the button [Select Update Pack] to choose the update package which you can. The tool DevManager can also be downloaded in the item ‘Others’ of the same page. Then click [Update Selected Dev] to update the device you selected. Or, you can click [Update All Devs] to update all the device by your searching. More details you can see in Figure 8~10.

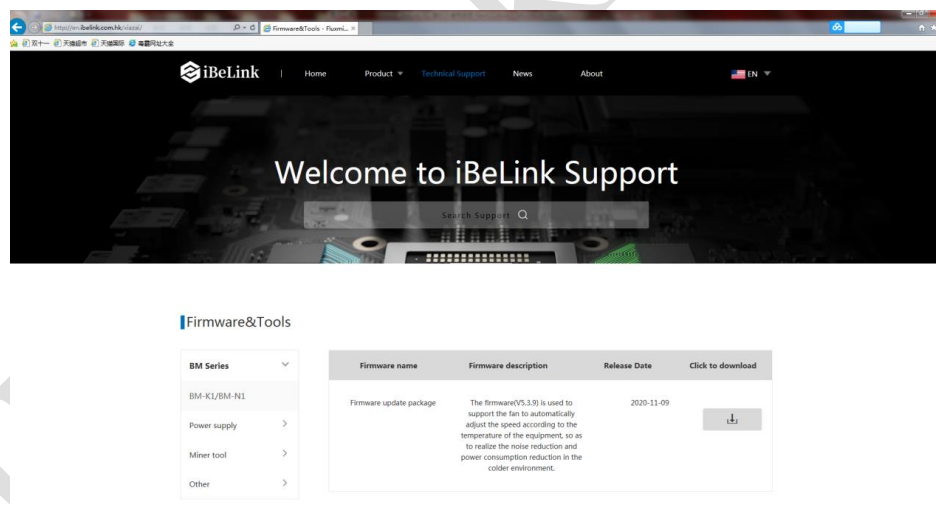


Figure 8 Download update pack

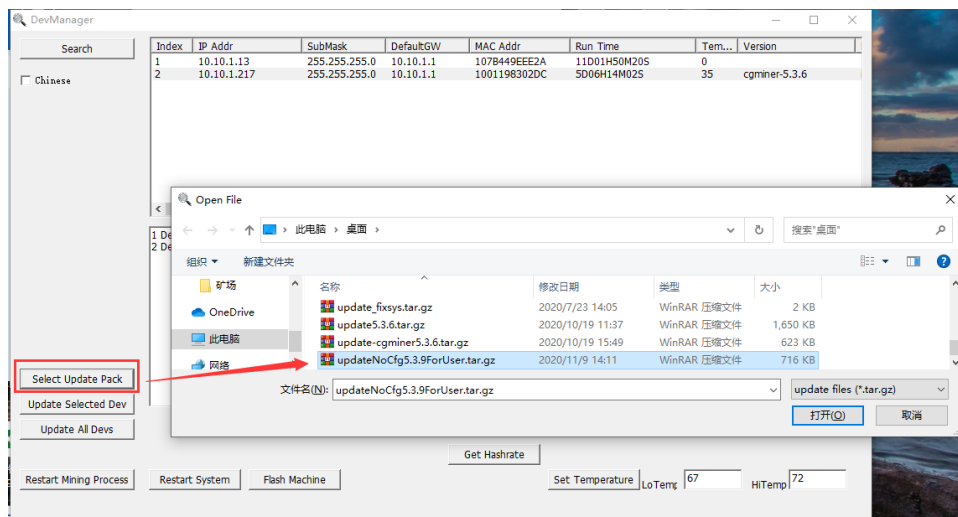


Figure 9 Select Update Pack

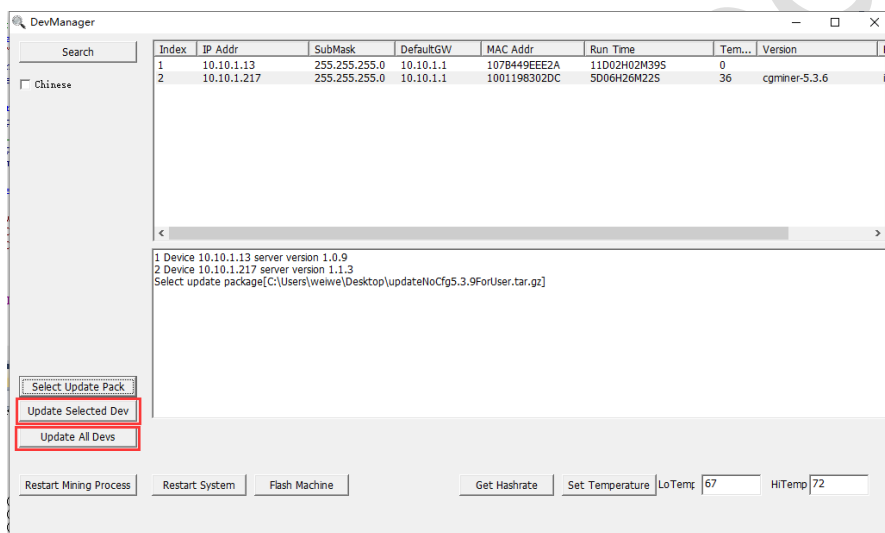


Figure 10 Update Selected Dev/Update All Devs

### 3 FAQ

#### 3.1 Can iBeLink K1+ mining machine be over clocked?

No, don't do this. Overclock has a high possibility of causing permanent damage to the ASIC chip.

#### 3.2 How to maintain the efficient operation of iBeLink K1+ mining machine?

Keep this miner running at a cool ambient temperature as much as possible. Maintaining the ambient temperature below 30°C can achieve good efficiency.

#### 3.3 What does DIY problem diagnosis and repair mean?

The design idea of iBeLink K1+ mining machine is modular design. The original intention of this design is to make it easier for miners to diagnose and repair by themselves when they encounter

problems with the mining machine without having to send the entire mining machine back to the manufacturer for repair. Most of the problematic miners should be able to resolve or reduce the loss of computing power through diagnosis and repair. We will publish a series of "how to" videos to help miners achieve DIY. We believe that iBeLink K1+ will provide the best product life cycle holding cost.

### **3.4 Why can't my browser configure the mining machine parameters?**

It is recommended to use Google's Chrome browser to save the miner configuration.

### **3.5 What does the bitmap of the chip on the homepage mean?**

When the mining software starts, it will detect all ASIC chips on each hashboard. Every 3 chips are one level. If the chips of the corresponding level are normal, the corresponding bitmap value is 1, otherwise it is 0. If there are 60 chips per hashboard and 30 levels are normal, the bitmap value is 0xffff and the corresponding binary value is 60 1. If the first chip is abnormal, the bitmap value is 0xffffe and the corresponding binary value is 111... 1110. The meaning of the active bitmap is similar to that of the chip. When the chip calculates the correct result, the value of the corresponding position is 1, otherwise it is 0, and the value is updated to 0 every 10 minutes.

### **3.6 Why sometimes the number of ASIC chips on my homepage is less than 0xffff?**

Due to electrical instability and possible bugs in the software driver, the checking process of mining software may miss out 1 or 2 chips occasionally.

### **3.7 Why does the mining software restart automatically?**

The mining software supports automatic recovery from network or driver errors and has a hardware watchdog to monitor the entire system. When an abnormality is detected, the mining software automatically restarts to try to recover itself, so it's normal that the mining software occasionally restarts automatically.

### **3.8 How to recover mining software from a crash?**

Update the device as 2.4.

### **3.9 Why the hash rate statistics results are different in different mining pools?**

The mining software performs hash rate statistics based on the returned nonce. The difference in the difficulty of the mining pool will result in a different number of nonce, which will affect the hash rate statistics and lead to different results.

### **3.10 Why my worker is not in the main mining pool but in other mining pools sometimes?**

When multiple mining pools are configured, the mining software will mine in the most important mining pool (main mining pool), but if the main mining pool loses connection due to the network and other reasons, the mining software will automatically switch to standby pool to continue mining.

### **3.11 Mainstream Blake2s mining pool**

stratum+tcp://kda.f2pool.com:5400

stratum+tcp://kda.ss.poolflare.net:443

## **4 iBeLink K1+ Technical Support Information**

<http://ibelink.com.hk/zhichi/>

[support@ibelink.com.hk](mailto:support@ibelink.com.hk)